Understanding recently arrived Chinese late-life migrants' experiences of healthcare access and utilisation in Aotearoa New Zealand during and beyond the COVID-19 pandemic: a mixed-methods study.

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ATTESTATION OF AUTHORSHIP

"I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor used artificial intelligence tools or generative artificial intelligence tools (unless it is clearly stated, and referenced, along with the purpose of use), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning."

Signed: ___ _____ Dated: 18-06-2024

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ABSTRACT

This mixed-methods study investigated the experiences of recently arrived Chinese late-life migrants in accessing and utilising healthcare services in Aotearoa New Zealand (NZ), under both non-pandemic and COVID-19 pandemic conditions. The research objectives were to: 1) to explore the possible factors that inform recently arrived Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ, in the face of non-pandemic and COVID-19 pandemic environments; 2) to modify and pilot a nationally administered survey on the health service access and utilisation and patient experiences of recently arrived Chinese late-life migrants in Aotearoa NZ, in the non-pandemic and COVID-19 pandemic circumstances; and 3) to propose actionable recommendations for enhancing health service access and utilisation for Chinese late-life migrants and their families in the face of non-pandemic and future pandemic environments. The study followed an exploratory sequential approach, beginning with a qualitative study (phase one) and subsequently building a quantitative study (phase two) based on the qualitative results. The study population comprised Chinese late-life migrants aged 65 and over who had immigrated to Aotearoa NZ within the last ten years.

In phase one, a qualitative descriptive (QD) approach with purposive sampling was used to identify factors influencing participants' healthcare access and utilisation since arriving in Aotearoa NZ. Semi-structured in-depth interviews (n=12: 5 males, 7 females) were conducted. Four themes emerged from the data: 1) "It is the Little Things that Matter the Most," 2) Fractured Patient-Practitioner Relationship, 3) Cultural Beliefs and Attitudes Towards Healthcare Access and Utilisation, and 4) Desire for Healthcare Information. These themes highlight key factors affecting healthcare access and utilisation among Chinese late-life migrants.

Drawing from phase one's insights, phase two involved developing a cross-sectional survey based on the 2017/18 NZ Health Survey to collect quantitative data on healthcare access and utilisation among the target population. Network sampling recruited 63 survey participants (21 males, 42 females). Findings revealed that Chinese late-life participants commonly used primary healthcare over secondary/tertiary services, preferred public institutions, and visited emergency departments for after-hours care. Significant barriers included differences between the healthcare systems in Aotearoa NZ and China, and ineffective communication between migrants and healthcare practitioners. Additional factors such as costs, transportation, support

networks, disease urgency, and previous healthcare experiences also influenced healthcare-seeking behaviours. Unlike existing literature, this survey found that having health/medical insurance did not significantly affect participants' likelihood of utilising healthcare services in Aotearoa NZ.

By integrating findings from both phases, three main factors affecting healthcare access and utilisation among recently arrived Chinese late-life migrants in face of the non-pandemic and the COVID-19 pandemic circumstances were identified. First, ineffective communication and cultural conflicts were major predisposing characteristics that fractured patient-practitioner relationships and negatively impacted attitudes towards healthcare. Second, limited enabling resources, such as inaccessible healthcare facilities, long waiting times, lack of public healthcare information, and insufficient family and social support, significantly disrupted healthcare access and utilisation. Third, although the study did not collect participants' health status, it found that their perspectives and experiences of healthcare access were consistently associated with their health conditions.

This study added an in-depth understanding of the factors impacting healthcare access and utilisation among recently arrived Chinese late-life migrants, in general and COVID-19 pandemic circumstances. It had important implications for developing the NZ healthcare system for migrant service delivery, especially during pandemics. The study also offers valuable insights for designing future studies on other late-life migrants' healthcare experiences during future pandemics, both in NZ and globally. Additionally, this study also offered the evaluation of the pilot survey using the Categorical Principal Components Analysis (CATPCA) method, which can identify potential deficiencies in the pilot survey and improve the design of a formal nationally administered survey in future studies.

CHAPTER 1: INTRODUCTION

According to Statistics New Zealand (Stats NZ, 2017), 15% of the population in Aotearoa, New Zealand (NZ) are aged 65 years or older. Within this aged population, nearly 8% are Asians who were born overseas (Stats NZ, 2018). Projections based on 2013 data anticipate that this proportion will double, reaching 16% of the total aged population by 2038 (Ministry of Health [MOH], 2016a, 2017, 2018a). A longer life brings with it not only opportunities but also health challenges for both the individual and the societies in which late-life citizens reside (Chew-Graham & Ray, 2016). Difficulties in accessing healthcare services for the general population, specifically in the face of a pandemic environment like COVID-19, may result in delays in seeking and obtaining treatment and increase risks of ending complications. These challenges became more serious among late-life migrants. Therefore, providing healthcare services to meet late-life migrants' needs becomes one of the essential healthcare issues in Aotearoa NZ (MOH, 2016a, 2017, 2018b), which heightened during the COVID-19 pandemic.

This study aims to comprehensively investigate the healthcare access and utilisation of recent arrived Chinese late-life migrants in Aotearoa NZ, in both non-pandemic and COVID-19 pandemic circumstances. It focuses on accessing and utilising a wide range of healthcare services in Aotearoa NZ, including primary, secondary, and tertiary care services, alternative/other healthcare services (i.e., acupuncture and Chinese medicine), and support services for COVID-19 (i.e., Healthline and telehealth). The study also aimed to identify the barriers and facilitators to healthcare access and utilisation, such as demographic characteristics, language competence, cultural beliefs, family and social support, transportation issues, and available and affordable healthcare resources. The study also planned to propose recommendations for improving the healthcare services for this population.

This chapter first offers an overview of the research objectives and outlines the methods employed to address the research objectives. It then briefly introduces the background of the Chinese immigrant population in Aotearoa, NZ, the global and NZ ageing population demographics, trends, the formal and informal healthcare system in Aotearoa, NZ, and the factors influencing the recently arrived Chinese late-life migrants' healthcare

access and utilisation. This chapter also provides the rationale for choosing the research topic. Lastly, it outlines the structure of the thesis.

1.1 Statement of the Research Objectives

The term "migration" emphasises that individuals are either "joining" or "relocating to" a new and unfamiliar host environment distinct from their accustomed one (Oxford Dictionaries, 2024). Undergoing such a process undoubtedly has a profound effect on the health and health-related decision-making of immigrants, especially late-life migrants (Hiam et al., 2019; Wong, 2015).

There are three research objectives for this study. The first research objective was to explore the possible factors that inform recently arrived Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ, in the face of non-pandemic and COVID-19 pandemic environments. Based on the findings from phase one, the second research objective was to modify and pilot a nationally administered survey on the health service access and utilisation and patient experiences of recently arrived Chinese late-life migrants in Aotearoa NZ, in the non-pandemic and COVID-19 pandemic circumstances. The third research objective was to pose recommendations for improving health service access and utilisation for recently arrived Chinese late-life migrants and their families in the face of non-pandemic and future pandemic environments.

The study population was a diverse and inclusive group of Chinese late-life migrants. These individuals, aged 65 years or over, migrated to NZ less than ten years ago and currently reside in Aotearoa NZ. This study included migrants who self-identify as Chinese, encompassing those born in the mainland area of the People's Republic of China, Hong Kong, Taiwan, and Macao, and subsequently relocated to Aotearoa NZ, with the purpose of establishing permanent residency. This study also considered individuals aged 65 and above as the criterion for identifying late-life migrants. The WHO definition of a late-life person relates to the age (around age 65) at which one begins to receive pension benefits (WHO, 2018). According to the outcomes of Stats NZ (2018), a pension is only available for individuals aged 65 or older. Therefore, it is reasonable to consider individuals aged 65 and above as the criterion for identifying late life in this NZ-based study.

1.2 How to Achieve the Research Objectives - Statement of the Research Methodology

This study employed the sequential exploratory mixed-methods approach to guide the research design. By integrating qualitative and quantitative methods, the mixed-methods study can maximise the strength of each approach (Schoonenboom & Johnson, 2017). It can then provide a better understanding of research questions from different points of view (Venkatesh et al., 2013).

The initial phase (phase one of the study) employed a qualitative descriptive approach (QD) to gain participants' perceptions and experiences of accessing and using NZ health services in the non-pandemic and COVID-19 pandemic circumstances. A QD study, known for its practicality, concentrates on a detailed phenomenon description (Saunder et al., 2019). It emphasises disclosing the who, what, where, and why of events/phenomena (Neergaard et al., 2009) and gathering direct information from participants experiencing the phenomenon (Lambert & Lambert, 2012). Therefore, QD methodology is particularly relevant in healthcare studies that require direct descriptions from participants experiencing the phenomenon, mainly when time and resources are limited (Creswell, 2014). In addition, this methodology has also significantly contributed to developing questionnaires, specifically within mixed methods studies (Creswell, 2014). Using the QD method to creatively generate survey questions can add rigour to the study through triangulation (Hastings, 2012; Venkatesh et al., 2013).

Phase two of the study aimed to develop a cross-sectional survey to gather and analyse data from a specific point in time (between 07 December 2021 and 31 May 2022) within a targeted population (recently arrived Chinese late-life migrants). In this phase, the qualitative results from phase one were used to modify an existing survey and develop a pilot survey on healthcare utilisation by the target population. The main strength of using a quantitative survey in phase two of the study is its ability to produce factual and reliable outcome data (Nardi, 2018), enhancing the credibility of the findings. A cross-sectional survey can describe some population features and support inferences of cause and effect (Hall, 2008), thereby providing objective results that are generalisable to a larger population (Nardi, 2018; Navarrete, 2009). Additionally, the findings related to pilot survey evaluation can inform the recommendations for the design of a robust, nationally representative survey for future studies, further enhancing the generalisability of this research.

1.3 Background of the Study

The following sections briefly introduced the history and background of Chinese immigrants in Aotearoa NZ, drawing the background of the global and NZ ageing population demographic and trends. They describe the health system in Aotearoa NZ and outline the factors (such as predisposing, enabling, and need-related factors) that frame the context for the healthcare access and utilisation of the recently arrived Chinese late-life migrants.

1.3.1 Chinese Identity

The term 'Chinese' carries a profound dual connotation, not merely as a country of origin (China), but also as a deeply rooted ethnic identity. This complexity is evident in various regions. For instance, a substantial portion of Singaporeans, despite holding Singaporean nationality, identify themselves as ethnically Chinese. Similarly, historical and political contexts have led to regions like Taiwan being home to an almost 100% Chinese population.

The intricacy of Chinese identity presents significant challenges in research designs and data analyses. This is not a mere theoretical concern, but a pressing issue with practical implications. For instance, Aotearoa NZ 2018 Census questionnaire's single option for identifying Asian ethnicity in major surveys like the NZ Census can lead to mixed ethnicity data that is prone to misuse or misrepresentation, particularly in healthcare studies focusing on the specific ethnicity or Chinese population (Stats NZ, 2018). The necessity of addressing this issue is not a mere suggestion, but an urgent call to action that may require stratifying research participants based on two pivotal dimensions: specific ethnicity and settlement history (MOH, 2016a).

Overall, ethnic heredity, which refers to the passing down ethnic traits from one generation to another, may establish a person's ethnicity. However, cultural belongingness and upbringing environments also play a crucial role in shaping individuals' perspectives and beliefs of their ethnicity. Thus, considering these complex factors, this study defines a person as Chinese only when they self-identify as such.

1.3.2 Migration and immigration

Migration is the "movement of persons to a new area or country to find work or improve living conditions" (Oxford Dictionaries, 2024, para. 1). Distinctly, immigration emphasises the individuals who move into and live in a new region, characterised as the "movement of non-native people into a country in order to settle there" (Collins English Dictionary, 2024, para. 1). Based on this definition, immigration in this study refers to a process of people departing from their original home country to move to another foreign country. As this study reviewed global and NZ-based literature, there is a mixed usage of the term "immigrant" and "migrant."

Numerous factors impact the continuously ascending global immigration trend. According to the outcomes of the World Migration Report 2022, the common motivations for people choosing to migrate to foreign countries are socio-political factors (i.e., refugees) and economic-educational reasons (i.e., international students and skilled migrants) (McAuliffe & Triandafyllidou, 2021). These driving forces are often country/region-specific. For instance, millions of Ukrainian refugees moved to European countries due to the war. Conversely, the primary motivation for most immigration from Aotearoa NZ to Australia is linked to better employment opportunities. Furthermore, immigration from China to Aotearoa NZ is primarily motivated by educational forces.

Indeed, there is a longstanding history of Chinese migrants to Aotearoa NZ. The initial documentation of the arrival of Chinese gold seekers was in the 1860s (Ritchie, 2003). However, until the 1990s, mass immigration from the People's Republic of China was inhibited by the NZ government (Ritchie, 2003; Spoonley & Bedford, 2012). At that time, Chinese immigrations were primarily from Hong Kong and Taiwan (Spoonley & Bedford, 2012). The most significant population surge in Chinese immigration occurred in the late 1980s. New Zealand's Chinese demographic shifted from less than 22,000 to over 140,000 between 1986 and 2006 (Immigration New Zealand [INZ], 2019). Since 2000, the Chinese remained the second-largest migrant group in Aotearoa NZ (Spoonley & Bedford, 2012).

Since 2003, a large number of late-life Chinese were granted residency under the parent category (INZ, 2019). The high rate of Chinese late-life migrants indicates that the needs of this group not only influence their own

families but also the broader NZ community. According to a literature review encompassing 36 articles conducted by Lin et al. (2015), the age at the time of immigration and the duration of stay in the host country were identified as factors influencing the living arrangements of late-life Chinese migrants. The longer late-life migrants stay in the host country, the more familiar they become with it and can engage in a higher level of social support they receive (Lin et al., 2015).

Multiple stressors have arisen during the immigration process. Such stressors comprise changes in cultures, religions, traditional family expectations, lifestyle, and social support systems (Kirmayer et al., 2011; Separa, 2024). These changes and pressures negatively contribute to Chinese late-life migrants' physical, mental, and emotional health and well-being. How immigrants navigate and cope with these changes largely hinges on the depth of engagement in the social and cultural context in both their original and host countries (Separa, 2024). The following section explains the background of Chinese social and cultural context and the significance of being Chinese.

1.3.3 Ageing Population Demographics and Migration Trends

Current global population projections reveal a pressing issue: the number of late-life adults is increasing at an unprecedented rate. By 2050, over 16% of the world population will be aged 65 or over, a significant jump from one in eleven in 2019 (World Health Organisation [WHO], 2018). A population's size and age composition is determined jointly by three demographic processes: fertility, mortality, and migration (Goldstone et al., 2015). While declining fertility and increasing longevity are the key drivers of the ageing population globally, international migration also contributes to changes in population ageing globally (WHO, 2018). This issue is particularly significant in migration countries, such as Aotearoa NZ, where the ageing population is a growing concern.

The aged population occupies a significant portion of the total population in Aotearoa NZ. According to the findings from Stats NZ (2018), people aged 65 years and above made up more than 23% of the total population in 2017. The increased number of late-life migrants, along with low fertility rates and/or net outflow of young adults, is a major factor influencing the ageing population in Aotearoa NZ (Stats NZ, 2017). The 2018 census

revealed that 27.4% of NZ's population was born overseas, a rise from 25.2% in 2013 (Stats NZ, 2018). The findings from Stats NZ (2018) also reported that the fastest growth in the population aged 65 and over occurred within the Asian ethnic groups. Over the past few decades, the Chinese population in Aotearoa NZ has significantly increased. As of 2018, the Chinese population stands as the third-largest ethnic group in Aotearoa NZ (Stats NZ, 2018). The Chinese late-life migrant population, in particular, has grown at about 3.5% per year between 2001 and 2018 (INZ, 2019), a trend that is likely to continue. In the last decade, Chinese late-life migrants granted residency under the parent category (including parent, family parent, and family retirement) accounted for almost one-quarter of the total Chinese residents in Aotearoa NZ (INZ, 2019).

1.3.4 Ageing and Health

Late-life adults are more likely to face health issues. The process of ageing is associated with increased susceptibility to various health challenges, including cardiovascular and pulmonary pathologies, diabetes, cancer, other chronic diseases, and mental disorders such as depression and anxiety (Byles et al., 2016; Chew-Graham & Ray, 2016; Su & Wang, 2019). These health-related complexities accompanying the ageing process, encompassing physical and mental aspects, can significantly impact late-life individuals' lifestyles and perceptions of life (Su & Wang, 2019). Additionally, late-life adults often face a higher risk of falls, which can have severe consequences (Rubenstein et al., 2001). The potential repercussions of falls, such as a loss of independence, arise from mobility challenges and the need for additional support and care for those experiencing these issues.

Numerous studies have investigated the impacts of ageing on various aspects of health, including physical, mental, and societal influences, contributing to a comprehensive understanding of the challenges faced by late-life individuals. One significant finding is the strong association between ageing and negative changes in physical condition (Wurm & Benyamini, 2014). As individuals enter late adulthood, they often experience a range of physical declines that increase susceptibility to injuries and illnesses, making everyday tasks more challenging (Byles, 2007). Research on late-life adults who maintain fitness and age positively revealed that health declines despite positive ageing efforts, suggesting that ageing can bring about health challenges regardless of lifestyle choices (Byles, 2007). Moreover, the experience of physical decline can lead to feelings

of frustration, helplessness, and decreased self-esteem (Byles et al., 2016; Su & Wang, 2019). Late-life adults might internalise societal stereotypes about ageing, which can further erode their confidence and willingness to pursue an active lifestyle (Schroyen et al., 2017). Social support networks may also shrink as friends and peers experience similar health issues, leading to increased isolation and a lack of social support, which are critical determinants of health and survival (Schroyen et al., 2017).

Several studies highlighted the significant impact of such physical diseases on the lives of late-life individuals (Heap & Fors, 2015; Loyd et al., 2020; Smith et al., 2009; WHO, 2024a). Research indicated that in the context of cancer or chronic diseases, late-life adults may face a series of issues affecting various aspects of their lives, such as mental health problems, mobility limitations, and financial constraints (Smith et al., 2009; WHO, 2024a). Moreover, late-life adults dealing with chronic illnesses may experience heightened anxiety and depression, exacerbated by the stress of managing their conditions and the potential loss of independence (Heap & Fors, 2015). This mental burden can also affect their overall quality of life and their ability to engage in social and recreational activities, further contributing to a decline in physical health (Heap & Fors, 2015). Additionally, after short-term or long-term hospitalisation, late-life patients may experience adverse functional changes upon discharge, often associated with medical interventions and transitions in healthcare settings (Loyd et al., 2020).

In addition, the effects of ageism within society extend far beyond mere prejudice or discriminatory attitudes; they significantly impact older people's well-being and, more alarmingly, diminish their chances of survival (Schroyen et al., 2017). First, ageism can severely affect the mental health of late-life people, leading to feelings of worthlessness, depression, and anxiety. Second, ageism can impede access to essential healthcare services. Healthcare professionals may unconsciously harbour ageist attitudes, leading to the under-treatment or misdiagnosis of older patients. Moreover, social isolation, another consequence of ageism, can lead to loneliness and a lack of social support, which are critical health and survival determinants (Schroyen et al., 2017).

These ageing-related health issues are more severe among the migrant population. When relocated to a new and foreign country, Chinese late-life migrants often face social isolation (Wong, 2015) and loneliness in healthcare settings (Steunenberg et al., 2016). Language barriers, cultural differences, and the lack of social support networks in the host country can contribute to this social isolation. Specifically, language barriers can significantly hinder effective communication between patients and healthcare providers, leading to misunderstandings and inadequate care (Liu et al., 2015). Meanwhile, cultural differences may result in differing expectations and perceptions of healthcare, complicating interactions with healthcare providers who may need to be culturally competent (Lai & Surood, 2009).

Moreover, the host country's lack of social support networks can intensify feelings of loneliness and isolation (Liu et al., 2015). As a result, migrants may experience feelings of powerlessness and a reluctance to seek help (Steunenberg et al., 2016; Wong, 2015). These feelings are often exacerbated by a lack of familiarity with the new healthcare system and potential distrust or misunderstanding of its operations (Montayre et al., 2019).

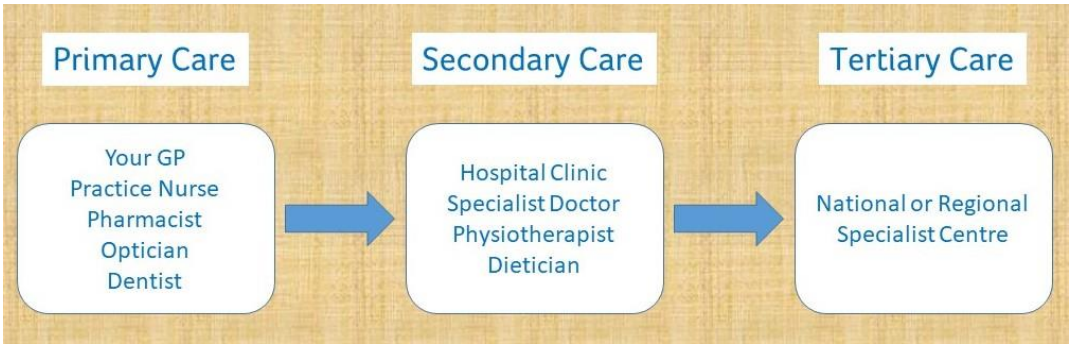
1.3.5 Healthcare Services in Aotearoa NZ

Health is one of everyone's fundamental human rights (WHO, 2007). In general, healthcare is the formalised system expected to address people's health needs. A healthcare system aims to meet the actual and perceived health needs using available resources and improve the health of the population (MOH, 2016a, 2017).

As a culturally diverse society, NZ provides a variety of tires of health services attempting to be targeted at people from different ethnic backgrounds. Based on the Social Security Act of 1938, Aotearoa NZ created a mixed public-private system for delivering healthcare (Pegasus Health, 2014). Healthcare in Aotearoa NZ includes two main sections: primary and secondary care (INZ, n.d.). Figure 1.1 below shows an overview of the primary, secondary, and tertiary care sectors in the NZ health system.

Figure 1.1: *Primary, Secondary, and Tertiary Health Sectors in Aotearoa NZ Health System*[1]

1 Note: Figure 1.1 demonstrates the NZ health system's primary, secondary, and tertiary health sectors. Adapt from Multiple Sclerosis Trust. (2022). Care in the NHS. https://mstrust.org.uk/sites/default/files/care%20infographic2.jpg



As Figure 1.1 shows, primary healthcare is the first level of service provision (MOH, 2018b). It is usually people's initial point of contact with the healthcare system. Primary healthcare aims to be universally accessible to individuals and families in the community (INZ, n.d.; MOH, 2018b). Primary healthcare services are coordinated, accessible to all, and accessed through a variety of providers (including family doctors/general practitioners (GPs), community nurses, dentists, pharmacists, physiotherapists, podiatrists, counselling, and so on) who possess the appropriate skills to meet the needs of individuals and the community they serve. Primary healthcare is community-based healthcare, while secondary healthcare is a speciality service generally provided by hospitals (INZ, n.d.; MOH, 2018b). To access most secondary healthcare services, such as public hospital and medical specialist care, in Aotearoa NZ, individuals should first consult a primary healthcare practitioner who will then refer them to the appropriate secondary healthcare provider (MOH, 2018b). In addition to primary and secondary care services, tertiary services encompass highly specialised, more complex, and costly inpatient treatment services (MOH, 2018b).

Furthermore, tertiary healthcare, as the pinnacle of the healthcare system, necessitates a multidisciplinary team and high levels of organisation and coordination between providers (INZ, n.d.; MOH, 2018b). This comprehensive approach ensures that all aspects of a patient's health are considered. In addition to the formal healthcare services, Aotearoa NZ boasts a variety of alternative/other health providers. While not part of standard medical care, these healthcare services offer complementary and alternative treatments, such as Chinese traditional medicine and Chinese acupuncture (MOH, 2018b).

Many NZ health services, including secondary and tertiary healthcare, are free or subsidised (Pegasus Health, 2014). It's important to note that all NZ residents, including citizens, permanent residents, holders of a two-

year work visa, or quota refugees, are eligible for publicly funded healthcare (INZ, n.d.). Tertiary healthcare providers are highly specialised, often long term and their expertise and services are usually expensive. The government covers hospital and specialist care in Aotearoa NZ if the patient is referred by a general or family practitioner (MOH, 2018b). Moreover, injuries stemming from accidents, varying from minor to significant physical harm and encompassing psychological trauma, such as sexual abuse, are typically covered by the Accident Compensation Corporation (MOH, 2018b).

Despite government coverage, challenges are reported in accessing and utilising health care, especially for non-residents with lower incomes (MOH, 2012, 2016a, 2017). These challenges may include the cost of healthcare services, the need for private health insurance, and the potential for limited access to certain healthcare providers. For instance, non-residents may have to bear the costs of hospital care services, such as surgeries or inpatient treatments. Furthermore, people with eligible visas can access and use healthcare, except in emergencies (INZ, n.d.).

1.3.6 Late-life Migrants and Healthcare Access and Utilisation

Despite there are various health services are available, migrants, especially late-life migrants, face several factors that impact their healthcare access and use. Numerous global and NZ-based studies have revealed that predisposing, enabling, and need-related factors can influence late-life migrants' experience of accessing and utilising healthcare services in both non-pandemic and pandemic circumstances (Chen et al., 2019; Hiam et al., 2019; Kim & Silverstein, 2021; Peters-Nehrenheim et al., 2022; WHO, 2020, 2024; Wong, 2015).

Firstly, it is crucial to recognise that pre-existing diseases such as cardiovascular and pulmonary pathologies, diabetes, cancer, and other non-communicable chronic diseases are more likely to develop with ageing (Byles et al., 2016; Chew-Graham & Ray, 2016). These medical comorbidities, more frequently among late-life people, are risk factors for severe COVID-19 infection (WHO, 2020, 2024). WHO (2020) also indicated that the mortality rate increases with age and the number of comorbidities. Therefore, it is imperative to develop and implement tailored healthcare services that cater to the unique needs of late-life migrants, who are most

vulnerable to the coronavirus and more likely to access and use healthcare services frequently, especially primary care services (MOH, 2023) and hospital services (Chen et al., 2019; Yang et al., 2013).

Secondly, a recent NZ-based study discovered that language barriers, such as difficulties in understanding medical terminology, reading healthcare documents, and communicating with healthcare professionals, severely disadvantage late-life migrants in accessing and utilising healthcare in Aotearoa NZ (Wong, 2015). Chinese late-life migrants born before the 1960s may have studied Russian as the dominant foreign language in schools (Gill & Adamson, 2011). Until the 1980s, when English became the dominant foreign language taught in Chinese schools (Gill & Adamson, 2011). Hence, English is typically a new subject for Chinese late-life migrants when they relocate to English-speaking countries. Global studies concluded that with a lower level of English, recently arrived late-life migrants often experience difficulties in making an appointment, locating a health facility, communicating with health professionals, and acquiring knowledge on illness (Hiam et al., 2019; Peters-Nehrenheim et al., 2022; Rafighi et al., 2016).

Thirdly, migrants have often removed themselves from their familiar social and cultural environment, which informs health-seeking behaviours (Peters-Nehrenheim et al., 2022; Rafighi et al., 2016). These changes include cultures, religions, traditional family expectations, and food preferences. For instance, Chinese people are more family-oriented. According to the findings from Smith and Hung (2012), Chinese people, especially late-life Chinese, are more submissive and inclined to avoid confrontation. Using unfamiliar healthcare services in a new host environment is a considerable challenge for recently arrived Chinese late-life migrants. Consequently, Chinese cultural beliefs, like "Don't Want to Be a Burden," become barriers in restricting recently arrived Chinese late-life migrants from accessing and utilising unfamiliar healthcare services in a new environment.

Moreover, Montayre et al. (2021) explored how young people from immigrant families adopted Western values. These Western values may weaken the adult children's filial duties in the care of their late-life parents, which may negatively affect late-life migrants' healthcare access and utilisation in a host country (Kim & Silverstein, 2021). Comparing to the younger generation, recently arrived late-life migrants face considerable

difficulty when integrating into the host society and culture, posing further barriers to accessing and using healthcare facilities in Aotearoa NZ (Ryan et al., 2011).

Furthermore, it is essential to note that pandemic environments significantly exacerbate the healthcare challenges faced by late-life migrants. Global studies have reported a substantial decrease in healthcare access and utilisation among late-life adults during the COVID-19 pandemic (European Centre for Disease Prevention and Control [ECDC], 2020; Green, 2020; Vigezzi et al., 2022, WHO, 2024b). This decrease in utilisation may be attributed to the higher demand for healthcare and the vulnerabilities and inequities within health systems during the pandemic outbreak (Phua et al., 2020). These findings underscore the urgent need to address the healthcare disparities faced by late-life migrants, particularly in pandemic circumstances.

1.4 Value of The Study

An essential factor that enhances this study's significance was the rising Chinese migrant population in Aotearoa NZ in recent years. Chinese migrants have been the second-largest migrant group in Aotearoa NZ since 2003 (Stats NZ, 2018). The continuously increasing Chinese population highlights the imperative for focused health service research from the perspective of Chinese late-life migrants. There was an abundance of studies concentrating on immigrants' health and healthcare access and utilisation globally. However, most studies have focused on the young-life and middle-life migrant populations in the United States (U.S.A.) and the United Kingdom (U.K.). Unlike other age groups, the primary motivation for late-life migrants, including most late-life Chinese relocated to Aotearoa NZ, is the family reunion (Goldstone et al., 2015; INZ, 2019). With their unique needs and experiences, this group of immigrants underscores the importance of studies on late-life immigrants' healthcare access and utilisation that highlight emic perspectives and context, such as personal backgrounds, cultural beliefs, and individual needs. With its focus on these crucial aspects, this study aimed to provide novel insights and promote more culturally targeted access and the utilisation of health services for Chinese late-life migrants and their communities.

The ongoing COVID-19 pandemic was another essential factor contributing to the study's significance. Several recent migrant-population-based studies have clarified who is accessing services and what clinical and non-

clinical factors may affect service use in general circumstances (Mehta, 2012; Wong, 2015). However, in a pandemic environment like COVID-19, Chinese late-life and other migrants may experience more significant difficulties when accessing and using healthcare. Many global studies discovered that healthcare access and utilisation for Chinese late-life migrants reduced significantly during the COVID-19 pandemic (ECDC, 2020; Vigezzi et al., 2022). The ongoing spread of COVID-19 increases the weakness and inequity in health systems (Phua et al., 2020), which could further marginalise late-life Chinese access and utilisation of healthcare services (Green, 2020). This study, with its potential to uncover crucial factors, especially pandemic-related factors, that affect recently arrived Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ, holds promise for improving health service delivery in Aotearoa NZ in general circumstances and future pandemic outbreaks.

1.5 Motivation for the Study

My motivation for undertaking this study stemed from my experience accessing and utilising healthcare services in Aotearoa NZ, my educational and professional background, and my intention to develop a career in healthcare research.

Ten years ago, I had left China and started a new journey in Aotearoa NZ. Setting in a new environment was a challenge. Everyday life tasks that used to be straightforward suddenly became complicated in the English-speaking environment. For the first time in my life, I found it hard to use a local healthcare service. I got a severe flu with a 39-degree fever a few weeks after I arrived in Aotearoa, NZ. As a resident nurse in China, using emergency care in a public hospital (ED) would be quick and easy. However, the doctor at the ED told me to drink more water and sent me home without any treatment. I tried to explain how we treated flu back in China, where we often prescribe medications for such cases. The doctor just refused to give me any medications and said, "This is how we do in NZ." This incident highlighted the different philosophies in medical practices between China and Aotearoa NZ, where the latter emphasises self-care and non-pharmacological interventions. Being a nurse, I know these differences exist, and I understand why the doctor made such a decision. However, I still felt helpless at that time. This made me wonder what if the same situation

happened to new migrants, especially Chinese late-life migrants, without any medical knowledge. How would they feel?

Before embarking on my doctoral journey in Aotearoa NZ, I laid a strong foundation in healthcare with a Bachelor of Nursing degree in China. My professional experiences in the Chinese healthcare system, coupled with my educational background, have equipped me with a unique understanding of the cultural and healthcare needs of Chinese late-life migrants. This understanding has been further enriched by my interactions with Chinese migrants in Aotearoa NZ, where I have gained a deep appreciation for their experiences with healthcare utilisation. This has heightened my awareness of the concerns and needs of the Chinese immigrant community, particularly the aged population.

As a postgraduate student in public health research, I aimed to use such insights to drive this study forward. This study aims to deepen my understanding of the subject and explore opportunities to contribute to the health and well-being of Chinese late-life migrants in Aotearoa, NZ, in the face of non-pandemic and future pandemic environments. By identifying the healthcare challenges they face and their specific needs, I hoped to pave the way for targeted interventions and policies that can improve their health outcomes and overall well-being.

1.6 Thesis Structure

This thesis comprises seven chapters. Chapter One provided an overview of the research objectives, research methodology, value of the study, and motivation to do the project. It also briefly introduced the Chinese identity, the background of the Chinese immigrant in Aotearoa NZ, the global and NZ ageing population demographic and trends, the official and informal healthcare system in Aotearoa NZ, and the factors influencing recently arrived Chinese late-life migrants' healthcare access and utilisation. Finally, it provided an outline of the structure of this thesis.

Chapter Two, the literature review, was a testament to the thoroughness of this study. It not only presented and critiqued relevant literature pertinent to this study but also critically evaluates the strengths and weaknesses of the literature. This chapter was a comprehensive review that not only highlights the relevance of the literature

reviews to the research objectives but also identifies existing studies' knowledge gaps, inconsistencies, or methodological limitations, thereby laying a strong foundation for this study.

Chapter Three, which delineated the rationale and justification for the chosen methodology of this study, provides a detailed outline of the research design. It first outlined the theoretical framework (Andersen's behaviour model of health services access and utilisation) employed to structure this thesis. The chapter also explained the research design for each phase of the study. The research design for phase one of the study overviewed the qualitative descriptive framework, methodology, and methods. It then detailed discussions on sampling, data collection, and data analysis methods employed in phase one. It also discussed the rigour of this study. The research design for phase two described the design of phase two, including the survey development, sampling, data collection, and statistical analysis methods. Additionally, it delved into ethical considerations.

The research findings were represented in Chapters Four, Five, and Six. These chapters provided an in-depth understanding of the factors contributing to the exploration of experiences of late-life Chinese migrants in Aotearoa NZ when accessing and utilisation healthcare services. Chapter Four revealed the themes emerged from qualitative data (phase one), while Chapters Five and Six present the survey findings (phase two) based on the statistical analysis. These three chapters described participants' experiences in relation to the research objectives and provide interpretations of the underlying meanings within these experiences. Through careful analysis and interpretation, these chapters aimed to uncover the nuances of participants' experiences and contribute to a deeper understanding of the healthcare utilisations and challenges the target population faces.

Chapter Seven, a critical reflection on the study's findings, offered valuable insights into meeting the research objectives. By synthesising the findings from both phases of the study and comparing them with existing global and national literature, this chapter not only provided a comprehensive analysis but also underscored the unique contribution of this study to advancing knowledge in the field of late-life immigrant health and healthcare access. By concluding with a comprehensive discussion of the study's strengths, limitations, and

recommendations, it finally made recommendations for healthcare education, practice, policy, and the design of the study population and methods of future studies.

CHAPTER 2: LITERATURE REVIEW

2.1 Introduction

Globally, the rapid shifts in migration trends and changes in the ageing population demographics have led to migrant and ageing health becoming an increasingly extensively studied fields in healthcare research. In Aotearoa NZ, government strategies suggested that attending to the healthcare needs of late-life migrants is also a critical healthcare concern (MOH, 2016a, 2017, 2018b, 2023).

Many migrant health studies have indicated that migrants often face a myriad of challenges and inequities when seeking healthcare (Hiam et al., 2019; Koh et al., 2022; Lum et al., 2016; Sheridan et al., 2011). The complexity of these healthcare issues, as revealed in the continuous debate within migrant health research, revolves around the healthcare issues migrants experience in the host countries and the factors contributing to these issues. Some studies concluded that language and communication barriers are the primary barriers that stop Chinese migrants, especially Chinese late-life migrants, from accessing and utilising healthcare in English-speaking countries (DeSouza & Garrett, 2005; Hiam et al., 2019; Wong, 2015). Koh et al. (2022) emphasised that a lack of knowledge towards the local health system and civil rights also disadvantages Chinese late-life migrants in accessing and utilising healthcare in Aotearoa, NZ, especially in the face of the COVID-19 pandemic. Meanwhile, other studies pointed out the significance of cultural, spiritual, and behavioural factors in blocking healthcare access of migrant populations (Lum et al., 2016; Ryan et al., 2011). This issue became more severe among Asian New Zealanders during the COVID-19 pandemic (Wiki et al., 2021). Overall, different studies hold different perspectives on this subject, underscoring the need for further investigations.

By critically reviewing the existing knowledge in the field of migrant healthcare utilisation, this chapter aims to delve deeper into the subject matter, examining it from multiple angles, gathering more data, and considering diverse viewpoints. It begins with introducing the literature search strategy used in this study. After that, this chapter outlines factors that affect migrants' healthcare access and utilisation in the global literature. Reviewing the NZ-based literature then illustrates the challenges Chinese late-life migrants face in healthcare access and utilisation in the NZ context. Based on the current global and national literature, this chapter also critiques how

the ongoing COVID-19 pandemic has affected healthcare access and utilisation for Chinese late-life migrants. Through a critical evaluation of the strengths and weaknesses of existing global and national research, this chapter ultimately identifies the knowledge gaps, inconsistencies, and methodological limitations present in current studies. It underscores the urgent need for new knowledge and methodological contributions to address these gaps.

2.2 Literature Search Strategy

This study employed a scoping review to map the existing global and national literature on the perceptions and experiences of the healthcare access and utilisation among recently arrived Chinese late-life migrants in Aotearoa NZ, during and beyond the COVID-19 pandemic. This literature review approach, a significant tool in setting the research context, allows for a comprehensive examination of the available research, providing insights into the current state of knowledge on this topic and identifying areas where further investigation is needed (Munn et al., 2018). By pinpointing areas where there is limited or conflicting evidence, the review can guide future research efforts and help to prioritise research questions that are most pressing or relevant to the needs of Chinese late-life migrants in Aotearoa NZ.

2.2.1 Decide Keywords

Key concepts form the core components of the research objective, covering topics like population or problems (P), intervention or exposure (I/E), comparison (C), outcome (O), time (T), or study design (Methley et al., 2014). Grouping these key concepts creates elements in the literature search strategy, ensuring a targeted and practical approach to finding relevant articles (Methley et al., 2014). As described in Chapter 1, this study has a clear research question(s). The study aims to investigate how recently arrived Chinese late-life immigrants accessed and utilised healthcare services in NZ during and beyond the COVID-19 outbreak. It also plans to explore the predisposing factors (such as age, gender, and health status), enabling factors (such as language proficiency and social support), and need-related factors (such as perceived health needs and healthcare expectations) affecting the target population's access to and use of healthcare services. Hence, the elements of the research question(s) comprise "recently arrived Chinese late-life immigrants" (P), "accessed and utilised healthcare services" (I), "during and beyond the COVID-19 outbreak" (T), and "the

predisposing, enabling, and need related factors to affect accessing and using healthcare services" (I). Keywords were then drawn to from searching available articles that had reported on the results of research and contained information about "recently arrived Chinese late-life immigrants," "health care," "factors that may affect health services access and use in NZ," and "during and beyond the COVID-19 pandemic." These keywords included "health service," "access and utilisation," "Chinese late-life migrants/old Chinese migrants," "COVID-19," and "New Zealand/Aotearoa."

2.2.2 Choose Suitable Databases

Given the interdisciplinary nature of the study, a wide range of data sources were meticulously utilised to capture diverse perspectives and insights. This included searching databases such as EBSCO, Scopus, Cochrane, CINAHL, Google Scholar, Health Sciences, and PubMed, which cover a broad spectrum of academic literature across various disciplines. In addition to academic databases, grey literature sources were also consulted. This includes thesis, dissertations, research reports, and fact sheets, often containing valuable information not found in peer-reviewed journals. This approach enhances the review's comprehensiveness and helps identify studies that may otherwise be overlooked, ensuring that the research is thorough and reliable.

Furthermore, grey literature in form of government reports, strategy documents, and policy statements related to healthy ageing and diversity were included in the search. These documents, sourced from reputable organisations such as the United Nations, World Health Organisation, NZMOH, and Stats NZ census, provide important contextual information and insights into the broader societal and policy considerations surrounding the topic. By incorporating a diverse range of data sources, the literature search aims to provide a comprehensive and nuanced understanding of the perceptions and experiences of healthcare access and utilisation among late-life migrants while identifying any gaps or areas for further research.

2.2.3 Inclusion and Exclusion Criteria

The literature search strategy was refined to address the limitations and conduct a broader exploration of the research question(s). The inclusion criteria for the literature search strategy included four main criteria:

1) By accommodating global and NZ-based literature and extending the publication timeframe back to 2008, the search aimed to capture a more comprehensive array of relevant studies, especially considering the scarcity of recent literature and the absence of NZ-based research on the topic.

2) The inclusion criteria for the literature search strategy were appropriately tailored to focus on the specific population of interest - Chinese late-life migrants aged 65 years and over.

Criteria three and four ensure that relevant articles are selected for analysis by specifying the focus on health services research and outcome measures related to healthcare access and utilisation.

3) Articles had to focus on health services research, including academic literature (i.e., qualitative, quantitative and mixed-methods studies, and synthesise literature reviews), grey literature, and government reports/statements.

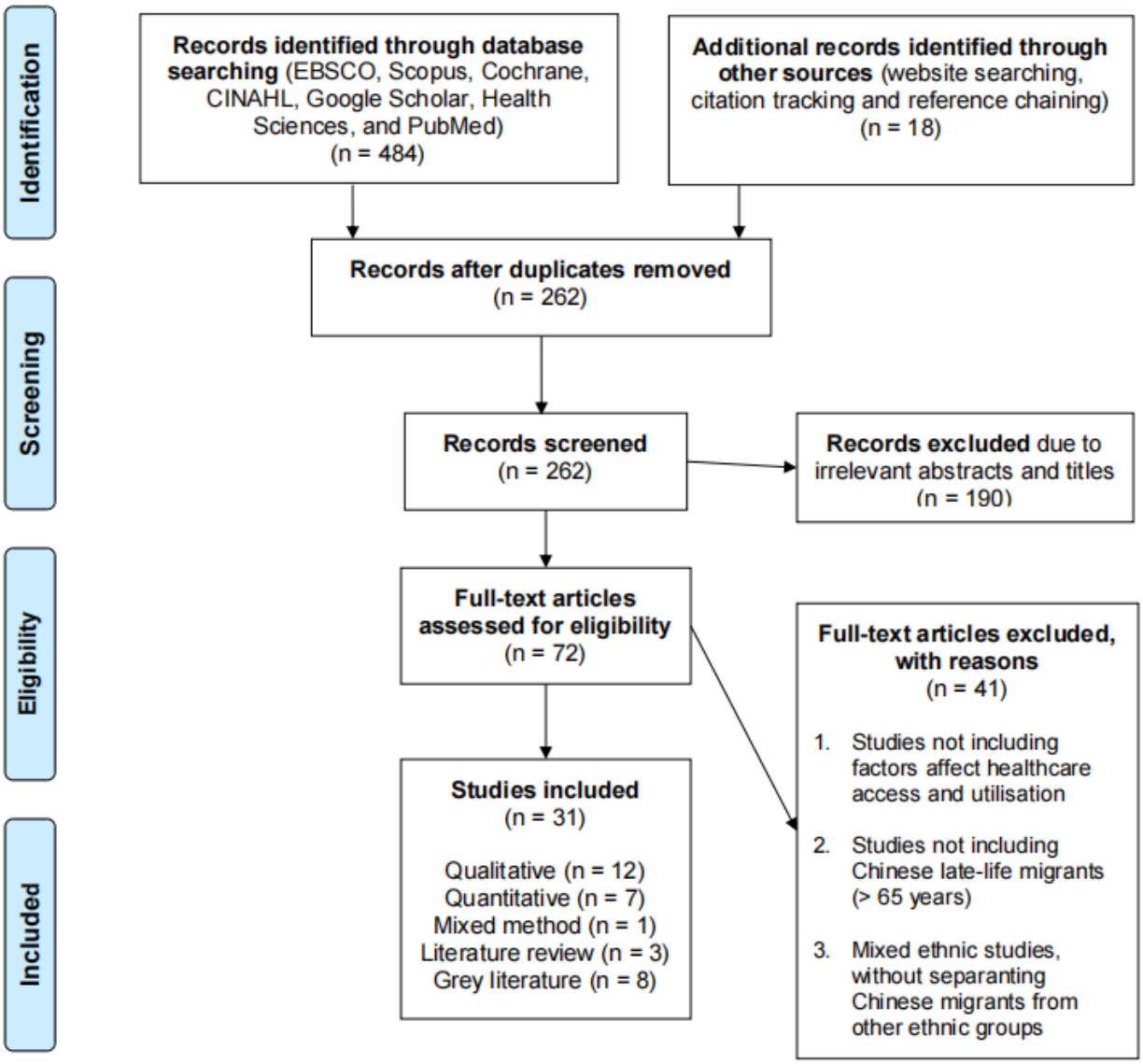
4) Outcome measures had to be factors that affect healthcare access and utilisation during non-pandemic and/or the COVID-19 pandemic and can act as barriers or enablers.

Furthermore, the exclusion criteria are clearly defined to maintain the relevance and specificity of the search results. The exclusion criteria are articles published before 2008 and in a language other than English. Study participants below 65 were also excluded because the focus was on the late-life cohorts. Furthermore, studies with mixed-ethnic participants were excluded unless the results explicitly separated Chinese late-life migrants from other ethnic groups.

2.2.4 Review Literature Search Results

Based on the inclusion and exclusion criteria, studies were screened and selected following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses for Scoping Reviews (PRISMA ScR) protocol (Peters et al., 2015). Figure 2.1 shows that 484 articles were identified from academic databases, and 18 were determined from other sources (i.e., website searching, citation tracking, and reference chaining). After removing the duplicates, 282 articles were recognised. Following the set inclusion and exclusion criteria, the abstracts and titles of the remaining articles were evaluated. Finally, the full-text screening was conducted on a total of 92 articles and reported that 39 of them were eligible.

Figure 2.2: *Literature Search and Selection*[2]



According to the outcomes of Figure 2.1, most eligible studies employed qualitative approach (n = 12), including two ethnographic studies (Montayre et al., 2021; Tang et al., 2015), two grounded theory studies (Dong et al., 2011; Liu et al., 2017), and eight descriptive studies (Heidenreic et al., 2014; Kan et al., 2020; Koh et al., 2022; Lum et al., 2016; Mao et al., 2020; Park et al., 2019; Smith & Hung, 2012; Wright-St Clai et al., 2018). There were seven quantitative studies used cross-sectional or observational designs (Ho, 2015; Kim

2 Note. The flowchart (Figure 2.1) reports the number of records (n) identified, included, and excluded, and the reasons for exclusions, at the different phases of a systematic review. Adapted from "*Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement*," by D. Moher, A. Liberati, J. Tetzlaff, D. G. Altman and The PRISMA Group, 2009, *PLoS Medicine, 6*(7), e1000097(https://doi.org/10.1371/journal.pmed1000097). Copyright 2009 by Moher et al.

& Keefe, 2010; Lai & Surood, 2009; Portes et al., 2012; Shahid et al., 2021; Siddiqi et al., 2009; Zhou, 2009). Moreover, one mixed-methods study studied the cultural and linguistic impacts on the utilisation of family physicians among Mainland Chinese migrants in Toronto, Canada (Wang et al., 2008). Three synthesis literature review immigrants and healthcare access in different countries (Arora et al., 2018; Derose et al., 2009; Levesque et al., 2013). Additionally, there were eight grey literature reports of barriers to healthcare access among migrants. This grey literature in form of national migrant health reports (Mehta, 2012; MOH, 2012, 2016b, 2018; Rural Health Information Hub (RHIhub), 2019; Scragg, 2016; Wong, 2015), and themed paper from the U.K. (Hiam et al., 2019).

Overall, the reviewed literature indicated a limited number of studies that explored access to healthcare services by Chinese late-life migrants in Aotearoa NZ, Australia, Canada, the U.K., the U.S.A., and elsewhere. Commonly found study participants were migrants from culturally and linguistically diverse backgrounds who usually face barriers to accessing and using health services in host countries (Derose et al., 2009; Hiam et al., 2019; Levesque et al., 2013; Lum et al., 2016; Mao et al., 2020; Portes et al., 2012; RHIhub, 2019; Siddiqi et al., 2009). Numerous global (Arora et al., 2018; Kim & Keefe, 2010; Shahid et al, 2021) and national studies/reports (Ho, 2015; Mehta, 2012; MOH, 2012, 2016b, 2018; Park et al., 2019; Scragg, 2016; Wong, 2015; Wright-St Clai et al., 2018; Zhou, 2009) concentrated on Asian migrants' healthcare. Some studies exploded barriers affected healthcare access and utilisation among Chinese migrants in host country, like Australia (Heidenreich et al., 2014), Canada (Tang et al, 2015; Wang et al., 2008). However, only few healthcare studies concentred specifically on Chinese late-life migrant population in Aotearoa NZ (Kan et al., 2020; Montayre et al., 2021), Canada (Lai & Surood, 2009), the U.K. (Liu et al., 2017), and the U.S.A (Dong et al., 2011; Smith & Hung, 2012).

The recently published studies highlighted migrants' experiences during the COVID-19 pandemic. However, they only concentrated on the "equity" and "social capital" of later-life migrants during the COVID-19 pandemic circumstances. For example, Koh et al. (2022) explored Chinese and Korean late-life migrants' living experiences in face of the first COVID-19 lockdown in Aotearoa NZ. Part of the findings reveals that linguistic barriers significantly impacted late-life Chinese and Korean migrants when accessing information related to

COVID-19. Such information includes the knowledge to access COVID-19-related support and healthcare services. However, this article did not examine whether the language barrier affects late-life migrants' health-seeking behaviours during the lockdown period. More importantly, very little literature focused on Chinese late-life migrants' healthcare access and utilisation in the face of the COVID-19 pandemic outbreak in the NZ context. The following section critically evaluates the existing global and NZ-based literature and highlights the relevance of the literature reviews to the research objectives.

2.3 Factors Affecting Migrants' Healthcare Access and Utilisation

Populations in high-resource countries are undergoing a complex transformation, becoming increasingly multi-ethnic due to the internationalisation of the marketplace and the successive opening of borders. This research has uncovered a challenging issue-migrants' access to healthcare is consistently lower when compared with non-immigrants in countries such as Canada (Lum et al., 2016), the U.K. (Liu et al., 2017), and the U.S.A. (Portes et al., 2012). This disparity is influenced by many factors, including demographic characteristics (such as age and gender), language competence, cultural beliefs, family and social support, transportation issues, and available and affordable healthcare resources.

This study adopted Andersen's Behavioural Model (Andersen et al., 2013) as a theoretical framework to identify and frame the factors affecting healthcare access and utilisation. Thus, this section frames these factors into three main categories: predisposing characteristics (such as age, gender, time in the host country, language competence, and cultural beliefs), enabling resources (including personal enabling factors (i.e., family and social support, financial means and health/medical insurance, and knowledge to access healthcare services) and community enabling resources (i.e., location of the services and availability of healthcare providers)), and health needs factors.

2.3.1. Migrants' Predisposing Characteristics that Affect Their Healthcare Access and Utilisation

Predisposing factors are the demographic and social conditions that influence an individual's decision to access and use healthcare services (Andersen et al., 2013). These characteristics include individuals' age group, gender, time/length in the host country, language competence, and cultural background.

2.3.1.1 Age group and healthcare access and utilisation

Ageing represents the accumulation of changes in a human being over time, encompassing physical, psychological, and social changes. As discussed in Chapter One, with age, inevitable biological changes occur that increase the risk of illness and disability. Compared to younger adults, late-life adults have limited regenerative abilities and are more susceptible to disease, syndromes, injuries, and sickness (Byles et al., 2016; Chew-Graham & Ray, 2016; United Nation Population Fund (UNFPA), n.d.; WHO, 2018; Wurm & Benyamini, 2014). Recent studies conducted on the aged population in China, Italy, the U.K., and the U.S.A. have also suggested that the mortality of the disease increases with age, especially those with chronic conditions, such as cardiovascular and respiratory disease (Battegay et al., 2020; Oke & Heneghan, 2020; Rajgor et al., 2020; Wu & McGoogan, 2020). Therefore, late-life adults are more likely to live with a health condition or disability and need frequent access to health services.

However, late-life adults are more likely to experience barriers when accessing and using healthcare. These barriers can have significant implications for the health outcomes of late-life migrants. For instance, one NZ-based study found that Chinese late-life migrants often struggle with language barriers, making it difficult for them to communicate their health issues effectively, potentially leading to misdiagnosis or delayed treatment (Kan et al., 2020). Furthermore, numerous global studies documented that being older than sixty-five was a potential barrier to migrants accessing physical and mental health services, which could result in late detection of health conditions and poorer health outcomes (Byles et al., 2016; Chung et al., 2018). Multifaceted factors (such as social, cultural, generational, and individual aspects) play essential roles in shaping late-life individuals' health outcomes and healthcare utilisation patterns (Derose et al., 2009; Hiam et al., 2019; Mao et al., 2020). As highlighted in section 2.2.3, these issues are more complex in the late-life migrant population. Many global and NZ-based studies emphasised that factors like language ability, knowledge of available services, cultural differences, and social isolation could increase the feelings of powerlessness of late-life migrants (Arora et al., 2018; Liu et al., 2017; Park et al., 2019). Consequently, this age group of migrants could feel powerlessness and loneliness within healthcare settings in the host country, which may be a reluctance to seek healthcare, even when need to (Park et al., 2019; Wright-St Clair et al., 2018; Wong, 2015).

2.3.1.2 Gender and healthcare access and utilisation

Gender, a key demographic factor, can significantly impact healthcare access and utilisation. When comparing healthcare utilisation for immigrants and non-immigrants across genders, Levesque et al. (2013) found that being male or female can both act as barriers. A cross-section survey on health service barriers for Chinese late-life migrants in Canada, conducted by Lai & Surood (2009) revealed that both male or female migrants experienced lower healthcare utilisation. However, other studies held different views. Cabieses et al. (2012) and Liu (2003) argued that being an ethnic minority male faced more difficulties in accessing ageing services than non-immigrants. Ma et al. (2015) reported female Vietnamese migrants had fewer gynaecological screening tests than non-immigrants.

2.3.1.3 Time in host country and healthcare access and utilisation

The duration of time residents in a host country is a significant determinant of migrants' access to healthcare and utilisation. Existing research has consistently shown that recently arrived migrants, in contrast to native-born individuals, often face barriers to healthcare, such as reduced access to family doctors, general consultations, cancer screenings, and blood pressure tests (Kim & Keefe, 2010; Ho, 2015). However, as immigrants integrate into the new society and spend more time in the host country, their utilisation of healthcare services tends to align with that of native-born individuals (Arora et al., 2018; Heidenreich et al., 2014). Despite this convergence over time, it is crucial to highlight that an increased healthcare utilisation may not mean the need for healthcare is met in this migrant population (Ho, 2015).

2.3.1.4 Language competence and healthcare access and utilisation

In recent decades, the influx of immigrants in English-speaking countries like the U.S.A., Canada, the U.K., Australia, and Aotearoa NZ has been rapid. However, language, particularly English, has emerged as a significant hurdle for non-English-speaking immigrants in accessing healthcare services in these nations. For instance, in Canada, a substantial proportion (about 32%) of Chinese immigrants (from the People's Republic of China) need to be more fluent in English (Lai & Surood, 2009). This language barrier can lead to difficulties in comprehending medical terminologies and interpreting symptoms, thereby creating significant challenges

for Chinese immigrants, particularly the elderly, in accessing healthcare services (Lai & Surood, 2009; Liu et al., 2017).

Chinese late-life migrant ethnicities residence in other countries face similar concerns regarding language barriers in healthcare utilisation. Relevant studies have been conducted in Aotearoa NZ (Koh et al., 2022), Australia (Heidenreic et al., 2014), the U.K. (Liu et al., 2017), the U.S.A. (Dong et al., 2011). These studies have indicated that Chinese late-life migrants who are not proficient in English face barriers to help-seeking, such as making an appointment, locating a health facility, communicating with health professionals, and acquiring knowledge on illness (Dong et al., 2011; Heidenreic et al., 2014; Koh et al., 2022; Liu et al., 2017). Moreover, a lower level of host language can hinder effective communication between immigrants and local health professionals, thereby leading misunderstandings (Mao et al., 2020), lack of emotional support (Dong et al., 2011), and even delaying in treatment (Lum et al., 2016).

While interpreter services may be available and beneficial, individuals with limited English-speaking skills often hesitate to ask questions about their health. One survey conducted in the U.S.A. by Kim and Keefe (2010) revealed that Asian migrants with limited English-speaking skills were less likely to consult health-related issues with doctors compared to those with better language skills. One Canadian survey on health service barriers for Chinese late-life migrants also found that interpreter services do not always ensure the immigrant patient receives quality care (Lai & Surood, 2009). The survey concluded that many individuals who must rely on an interpreter fear that the interpreter does not respect their confidentiality within the larger Chinese community in Canada (Lai & Surood, 2009).

The significant challenges posed by language barriers in accessing healthcare services and communicating with health professionals for Chinese immigrants have been widely acknowledged. However, some researchers hold a different view. They argue that language proficiency may not strongly predict migrants' healthcare utilisation (Miltiades & Wu, 2008). This study on the physician visits of Chinese migrants in Boston (U.S.A.) concluded that English proficiency was not a significant predictor of physician utilisation in their sample (Miltiades & Wu, 2008). While this perspective is intriguing, it is important to note that only a few studies

have considered this approach, and the impact of language barriers on healthcare access remains a widely acknowledged issue for Chinese immigrants.

2.3.1.5 Culture beliefs and healthcare access and utilisation

The impact of health beliefs and attitudes on immigrants' access and utilisation of health services is a well-documented phenomenon (Hiam et al., 2019; Shahid et al., 2021). Although a Canadian study found that migrant populations may have equal or even better care access than their native-born counterparts (Wu et al., 2005), opposite narrative emerges from numerous studies conducted in Canada, the U.K., and the U.S.A. These studies suggested that migrants' cultural background can influence their healthcare-seeking behaviours and potentially hinder their access to care (Hiam et al., 2019; Lai & Surood, 2009; Portes et al., 2012).

Migrants' cultural backgrounds, which shape their health beliefs and attitudes, have a significant impact on their health and healthcare utilisation in host countries. For instance, the Chinese migrants' reliance on traditional medicine practices and self-treatment (Choi et al., 2022; Lai & Chau, 2007) may act as a barrier to their acceptance of mainstream health services (Lai & Surood, 2009). While a U.S.A. survey found no direct evidence to suggest that Chinese traditional health beliefs and practices had a detrimental effect on the access and use of preventive health services (Smith & Hung, 2012), many studies have reported that migrants, particularly older individuals, may choose traditional remedies over mainstream health facilities due to health beliefs (Arora et al., 2018; Lum et al., 2016; Lai & Surood, 2009).

Relocating to a new host society/country entails a significant upheaval for individuals, particularly late-life adults, who not only leave behind a familiar physical environment but also a social and cultural one (Hiam et al., 2019). These profound losses often hinder their ability to access and utilize the healthcare services of their new host societies. One study conducted in Aotearoa NZ revealed that cultural disparities posed a significant challenge for Latin American migrants navigating the local health system (Perez, 2012). This issue has been further exacerbated among late-life Asian migrants (Wright-St Clai et al., 2018), particularly in the context of the ongoing COVID-19pandemic (Koh et al., 2022).

2.3.1.6 Chinese culture beliefs and healthcare access and utilisation

Chinese culture is distinctive and complex. The outcomes differ when late-life Chinese immigrants bring their cultural values and beliefs to a new environment, like Aotearoa NZ. In an NZ-based study, researchers frequently framed Confucianism (i.e., li (ritual norms), shu (reciprocity) and xiao (filial piety)) in their findings on migrants' healthcare-seeking behaviours (Ho, 2015). Another NZ-based ethnographic study Montayre and his colleagues explained how filial piety affected Chinese adult children caring for their ageing migrant parents in Aotearoa, NZ (Montayre et al., 2021). This study revealed that Chinese migrants still hold the core values and cultural and familial expectations. However, late-life migrants did not always solely rely on their adult children to provide ageing care (Montayre et al., 2021). On the other hand, U.S. and Canadian based-studies often highlight Taoism (i.e., the balance of Yin and Yang), which is another foundational aspect of Chinese culture, as an essential cultural factor that affects Chinese migrants' health and healthcare behaviours (Lin et al., 2015; Wang et al., 2008).

Both Taoism and Confucianism are essential components of Chinese culture. Understanding these philosophical traditions is crucial for comprehending how individuals from the Chinese culture approach and perceive health-related matters. For instance, li (ritual norms, a belief rooted in Confucianism) may influence Chinese migrants' preferences for specific healthcare providers, such as avoiding male doctors for certain examinations (DeSouza & Garrett, 2005; Vaughn et al., 2009). It may lead to delays in diagnosis or untreated health conditions due to preferences regarding healthcare providers (DeSouza & Garrett, 2005; MOH, 2016b). Moreover, excessive respect for medical personnel may also hinder migrants from questioning authority and seeking clarification on important medical instructions (Kan et al., 2020).

2.3.2 Enabling Resources Affect Migrants' Healthcare Access and Utilisation

The enabling resources are personal (i.e., family support, financial support, health insurance, and knowledge to access health services) and community (i.e., available health facilities) aspects that facilitate healthcare service utilisation (Andersen et al., 2013).

2.3.2.1 Family and social support affect healthcare access and utilisation

The absence of support from family and society can be a significant barrier to healthcare access. Family support is crucial in providing emotional assistance to patients, particularly those who are in their late life and have recently immigrated from overseas (Kim & Silverstein, 2021). While family support can offer aid, companionship, and stability, challenges may arise when collective family responsibilities precede individual needs (Liu et al., 2017).

Chinese culture places a profound emphasis on 'xiao' (filial piety), a concept that encapsulates the duty of descendants to care for their parents (Montayre et al., 2021; Smith & Hung, 2012). Consequently, the traditional family-based caregiving system serves as the primary source of emotional and financial support for Chinese late-life migrants (Tang, 2021). However, it's important to note that younger family members may only offer support sporadically, particularly when late-life immigrants are at risk (Montayre et al., 2021). Most Chinese people in their late life migrated to NZ following their adult children. However, their children often need to work full-time to cover the living costs for the whole family. Consequently, these Chinese late-life migrants may deal with various issues independently. For instance, late-life migrants need access to healthcare services urgently during working days, while their family or support person cannot attend these times. In some unique cases, Chinese migrants returned to their original countries and left their late-life parents in the host countries (Wong, 2015). In such cases, Chinese-speaking caregivers, who are often family members, and/or professional interpreters become these late-life migrants' only source of assistance. The lack of emotional and/or financial support from family members may prevent Chinese late-life migrants from accessing and using healthcare services in the host countries (Kan et al., 2020; Wong, 2015). Nevertheless, one NZ-based ethnographic study discovered that some Chinese late-life migrants changed their traditional views and did not enterally rely on their adult children to provide ageing care (Montayre et al., 2021).

2.3.2.2 Financial means and health/medical insurance affect healthcare access and utilisation

Financial resources and health-related insurance play a pivotal role in migrants' healthcare utilisation, a fact underscored by global studies conducted in diverse settings. For instance, research in Canada (Tang et al., 2015), and the U.S.A. (Kim & Keefe, 2010; Siddiqi et al., 2009) has consistently found that the immigrant

population often have higher rates of uninsured individuals compared host population. In the U.S.A., studies have delved into the impact of inadequate financial resources (Dong et al., 2011) and health insurance (Kim & Keefe, 2010) on healthcare access for Chinese migrants, finding that economic circumstances may restrict their access to care that is not sponsored or provided for. Similar challenges are prevalent among Asian migrants in Aotearoa NZ (Ho, 2015), particularly for late-life migrants (Park et al., 2019).

Furthermore, it's crucial to reiterate that lower socioeconomic status has been identified as a barrier to healthcare access and engagement in immigrant populations (Derose et al., 2009; Portes et al., 2012; Siddiqi et al., 2009). The disparity in social status between migrant patients and native-born healthcare providers can contribute to communication breakdowns, impacting patients' perceptions and attitudes toward utilising available healthcare services (Derose et al., 2009). It is of utmost importance to address these social and economic disparities as a matter of urgency for promoting equitable healthcare access among immigrant communities.

2.3.2.3 Knowledge to access healthcare services

Unfamiliarity with Western health practices can significantly hamper migrants' ability to use local health services (Hiam et al., 2019). U.S.A. community-based surveys have starkly documented that migrants, particularly Chinese late-life migrants, are severely restricted in accessing healthcare due to a lack of knowledge of health-seeking resources (Dong et al., 2011), especially when services are not available during opening hours or are located at a distance (Portes et al., 2012). One Australia-based study has underscored that Chinese migrants often avoid visiting healthcare services in Australia due to a shortage of knowledge about local healthcare sources (Heidenreic et al., 2014). Similarly, an NZ-based study has reported that the lack of information significantly increases the difficulties of Asian migrants, including Chinese, in accessing the NZ health system (Zhou, 2009).

2.3.2.4 Community enabling resources affect healthcare access and utilisation

Many international and national literature highlighted that community-enabling resources, such as the availability, affordability, and accessibility of health facilities in the host society, play an essential role in

influencing migrants' use of health services. One Canadian national report on healthcare access in rural communities, for example, highlighted that the scarcity of medical providers and services in a region could have a detrimental effect on the availability of health services, particularly for migrants who may already face language and cultural barriers (RHIhub, 2019). The finding of a Canadian quantitative study identified that recently arrived migrants without entitled to subsidies for medical benefits, are more likely hindered to access and utilise local primary healthcare (Lum et al., 2016). Furthermore, public transport's availability and efficiency, especially in urban and suburban areas, can also act as a barrier (Syed et al., 2013). Irregular public transport combined with prolonged travel times can hinder ethnic minority patients, including immigrants, in their efforts to seek medical help in Aotearoa NZ (Kan et al., 2020) and Canada (Lum et al., 2016).

2.3.3 Migrants' Healthcare Need Factors Affect Their Healthcare Access and Utilisation

Healthcare needs factors reflect perceived health service needs and are related to illness (Andersen et al., 2013). They are directly relevant to the work of researchers, policymakers, and healthcare professionals. Prior research on ageing identified that healthcare use is primarily determined by individuals' health status (Byles et al., 2016; Kim & Frank-Miller, 2015).

For late-life migrants, the ageing experiences could significantly impact their healthcare experiences. Arora et al. (2018) conducted a comprehensive analysis of 12 studies from four countries (including the U.K., Netherlands, Norway, and Denmark), which explored late-life migrants' experiences of using healthcare services among various ethnic groups, including Chinese late-life migrants. The significant finding from this study was that the experience of accessing healthcare in host countries was primarily influenced by migrants' ageing experiences and health literacy.

2.4 Chinese Late-life Migrants' Healthcare Access and Utilisation in Aotearoa NZ

Since 2000, the Chinese population in Aotearoa NZ has seen a significant surge, rapidly becoming the third-largest ethnic group in the country (Stats NZ, 2018). This growth has prompted increased attention to integrating the Chinese population into healthcare systems. During the same period, academic studies addressing Asian migrant health have been published. For example, by conducting a cross-sectional survey,

Ho (2015) explored the changing face of Asian migrants in Aotearoa NZ, providing insights into the evolving demographics and the challenges this growing population faces. Another community-based report by Wong (2015) investigated the specific challenges related to Asian health and health promotion in Aotearoa NZ, highlighting the unique obstacles Asian communities encounter in accessing and utilising healthcare services. Several studies focused on the factors that affect Chinese late-life migrants' health-seeking behaviours. Wright-St Clai et al. (2018) studied the lack of social network barriered wellness management among late-life Chinese, Indian, and Korean migrants in Aotearoa NZ. Kan et al. (2020) reported that the lack of English language proficiency and transportation issues hindered late-life Chinese migrants from accessing and using social support and health services. Koh et al. (2022) studied late-life Chinese and Korean migrants' experiences during the COVID-19 lockdown period, identifying language barriers and social isolation challenged health outcomes and the strategies that can support better health maintenance for this demographic.

However, many existing studies have small sample sizes, raising concerns about their representativeness and the generalisability of their results to the entire Asian population or specific sub-populations, such as the Chinese. Although Aotearoa NZ government agencies and other Asian organisations have initiated national-level projects (Mehta, 2012; MOH, 2012, 2016b, 2018; Scragg, 2016; Wong, 2015), these large-scale research endeavours often focus on cross-group comparisons and not specific health issues for specific subpopulations. Specifically, no published articles have researched healthcare access and utilisation among recently arrived Chinese late-life migrants in Aotearoa NZ. Only a few NZ-based studies that assessed the factors preventing Asian migrants from various ethnicities from using healthcare were found (Ho, 2015; Zhou, 2009).

NZ-based studies reported that cultural differences, including cultural norms, values, and practices, are essential in restricting Chinese late-life migrants' healthcare utilisation in Aotearoa NZ (Ho, 2015; Mehta, 2012). Chinese and other Asian cultures hold a holistic view of the body, where each part is intimately connected (Vaughn et al., 2009). Thus, Eastern medicine assumes that each organ has a mental and a physical function (Vaughn et al., 2009). These perspectives contrast with the Westernised bio-medical approaches, which often separate mental and physical aspects of health (MOH, 2018b). Unlike Eastern medicine, Western medicine tends to approach disease by assuming that it is due to an external force, such as a virus or bacteria,

or a slow degeneration of the body's functional ability (MOH, 2018b). Because Chinese late-life migrants' health expectations differ from those of NZ-born health providers, this mismatch in expectations may lead them to seek healthcare services that align more closely with their cultural perspectives. For example, they prefer traditional medicine services to mainstream health facilities because they desire to adhere to their cultural beliefs (Koh et al., 2022; Wright-St Clair et al., 2018).

Consistent with global literature, NZ literature identified language difficulties as another significant factor blocking late-life migrants' healthcare utilisation. As discussed in Chapter One, Chinese late-life usually can speak limited English. Lack of English proficiency can cause ineffective communication between late-life migrant patients and health professionals (Ho, 2015; Mehta, 2012). The misunderstanding of medical assessments and treatments or a reluctance to speak about emotional, sexual, and mental health concerns can create significant stress and confusion and further prevent late-life migrants from using health services (Scragg, 2016). Moreover, Mehta (2012) studied Asian migrants who resided in the Auckland region and found that most of them did not know about the health services, such as influenza vaccine and telehealth that existed due to language barriers. Language difficulties can further complicate the healthcare journey for Chinese migrants when they are unfamiliar with healthcare services in a foreign environment (Ho, 2015; Zhou, 2009).

The significant difference between the healthcare service systems in China and Aotearoa NZ is indeed another critical factor influencing Chinese late-life migrants' access to and using local healthcare services. The contrasting approaches to healthcare, particularly the primary healthcare system led by General Practitioners (GPs) in Aotearoa NZ (MOH, 2018b), which is quite different from the hospital-centric system in China (WHO, 2019; Zhang, 2023), pose a considerable challenge for Chinese immigrants. Many new immigrants may need to familiarise themselves with the GP as the first point of contact for healthcare services, given that public hospitals play a more prominent role in China. In China, patients often navigate through multiple hospitals and doctors before deciding on a suitable and affordable medical service (WHO, 2019; Zhang, 2023). This contrasts with the NZ system, where public hospitals typically require referrals, and walk-in patients may need help (Wong, 2015).

Furthermore, commonly service providers have shortages of health professionals who possess appropriate language skills and the lack of provision of resources such as interpreters, which can further limit migrants' ability to use the NZ health care system (MOH, 2012; Wong, 2015). Though most Chinese late-life adults arrived in Aotearoa NZ by following their adult children (INZ, 2019), their adult children are most commonly working full-time and taking care of their children. Namely, Chinese late-life migrants sometimes must deal with many issues by themselves when accessing healthcare. Especially when they access the services urgently, it allows no time for their family members to come along (MOH, 2012). Therefore, a lack of health providers with appropriate language skills and understanding of clients' cultural experiences can prevent Chinese late-life migrants from using local health facilities.

2.5 COVID-19 and Migrants' Healthcare Access and Utilisation

COVID-19 was first identified in December 2019 in Wuhan, China, and has since spread globally, resulting in the ongoing 2019-20 coronavirus pandemic (Hui et al., 2020). As of 01 May 2024, more than 775 million COVID-19 cases have been reported in more than 200 countries and territories, resulting in more than 224,000 deaths (WHO, 2024b). As of 03 May 2024, over 2 million laboratory-confirmed cases have been reported in Aotearoa NZ, resulting in 4120 deaths (MOH, 2024). The cases were aged between 0 years and over 70, and nearly 18% are over 60 (MOH, 2024). Among reported cases, 44% are male, and 55% are female (MOH, 2024).

The primary fear over the COVID-19 pandemic was around how weaker health systems would cope (ECDC, 2020). Although some countries have successfully dealt with individual cases, large outbreaks were seen to easily overwhelm health services. National and global evidence suggested that limited healthcare resources can lower healthcare utilisation by the public (ECED, 2020; Phua et al., 2020). Moreover, as many countries cannot offer free COVID-19 tests and treatments, migrants, especially those over-represented in lower socioeconomic groups, may be unable to afford healthcare services (Phua et al., 2020).

The ethnic disparity can also affect migrants' healthcare utilisation during the COVID-19 epidemic (Green, 2020). The global COVID-19 outbreaks create fear, which has uncovered ethnic discrimination and

disproportionately affecting marginalised groups (Devakumar et al., 2020). Internationally, discrimination towards Chinese people has increased following the spread of COVID-19 from Wuhan, China. These include individual acts of microaggression or violence to collective forms, for example, Chinese people being barred from establishments (ECDC, 2020). The strength of a health system is inseparable from the broader social systems surrounding it. In the absence of social inclusion, justice, and solidarity, inequalities are magnified in health systems and can further increase the marginalisation of Chinese migrants (Devakumar et al., 2020; Green, 2020).

The impact of the pandemic on access to healthcare has been multifaceted, affecting different population groups in various ways (Kan et al., 2020). A NZ-based study discovered that late-life Chinese and Korean migrants with comorbidities, for example, may have faced challenges in attending medical appointments due to concerns about exposure to the virus (Koh et al., 2022). Another NZ-based study found that late-life adults who were experiencing worsened mental health may have encountered delays in seeking care or accessing emergency services (Vigezzi et al., 2022). Those NZ-based studies underscored the importance of strengthening the health system during times of crisis and the need for tailored interventions to support vulnerable populations (Kan et al., 2020; Koh et al., 2022; Vigezzi et al., 2022).

2.6 Summary on Current Literature and Finding the Gap

This chapter reviewed and critiqued the literature that was pertinent to this study. The literature-searching strategy involved a comprehensive search of academic databases, including PubMed, Scopus, and Web of Science, using a combination of keywords such as 'Chinese immigrants', 'late-life migrants ', 'healthcare access ', and 'utilisation '. After describing this strategy, the chapter delved into the core issues surrounding the Chinese late-life migrant healthcare utilisation in the environment of immigration destination. The discussion highlights the factors (including predisposing characteristics, enabling resources, and healthcare need factors) influencing late-life migrants' experiences accessing and utilising local healthcare services. By critically evaluating the existing global and national literature, this chapter highlights the relevance of the literature reviews to the research objectives.

The literature review identifies various factors contributing to the lack of access and underutilisation of healthcare services among Chinese immigrants. However, some research only focuses on specific barriers, such as language or cultural sensitivity, without recognising the interconnected nature of barriers to accessing healthcare services. Additionally, there is a lack of published literature concerning barriers that Chinese late-life migrants face when accessing the health system in Aotearoa NZ, particularly in the face of the ongoing COVID-19 pandemic outbreak. Therefore, this research study, by investigating late-life migrant healthcare access and utilisation further with a specific emphasis on recently arrived Chinese late-life migrants in the Aotearoa NZ context, can potentially lead to a more comprehensive understanding of the topic and uncover novel data or previously overlooked or misunderstood insights, thereby improving the healthcare experiences of Chinese late-life migrants.

To address these gaps, this study aims to investigate the experiences of recently arrived Chinese late-life migrants in accessing and utilising the NZ healthcare system. The study will be conducted in two phases, the first phase focusing on the non-pandemic circumstances, which include the regular healthcare system and its challenges, and the second phase examining the impact of the ongoing COVID-19 pandemic on healthcare access and utilisation, which may have introduced new barriers and complexities. By combining a qualitative descriptive approach with a quantitative survey, this study expects a mixed-methods methodology to provide a more nuanced understanding of the challenges faced by Chinese late-life migrants in accessing healthcare services.

The following chapter describes and discusses the design, implementation, and justification of the study's comprehensive mixed-methods approach, including the qualitative descriptive methodology adopted by phase one and the quantitative survey method employed by phase two. It also outlines the procedures for data collection and analysis, obtaining ethical approval providing insight into how the research aims to address the identified gaps in the existing literature.

CHAPTER 3: RESEARCH METHODOLOGY AND METHOD

3.1 Introduction

This study employed a sequential mixed-methods approach (qualitative descriptive approach in phase one and quantitative method in phase two) to investigate recently arrived Chinese late-life migrants' experiences of accessing and utilising NZ healthcare services in the face of non-pandemic and COVID-19 pandemic circumstances. Importantly, the Auckland University of Technology Ethics Committee (AUTEC) approved this project (reference number 20/234), ensuring that participants' rights were protected, and data were kept private and secure during the research, thereby upholding the highest ethical standards.

This chapter is divided into several important sections. The first section (section 3.2) outlines the theoretical framework, Andersen's Behavioural Model, used to guide the data analysis and interpretation in the study, ensuring the relevance of the findings. The second section (section 3.3) provides an overview of the methodology framework that guides the mixed-methods research process. The third section (section 3.4) offers the rationale for choosing a mixed-methods approach directly relevant to the research purpose and objectives, thereby grounding this research in a solid foundation. It also outlines other essential foundations for the study, including ethics approval and ethical consideration, study population and sampling inclusion criteria. The next two sections discuss the procedures and approaches, including sampling, participant recruitment, data collection, and data analysis, taken in each research stage (qualitative descriptive approach in section 3.5 and a quantitative survey method in section 3.6). Finally, the triangulation methods are discussed in section 3.7.

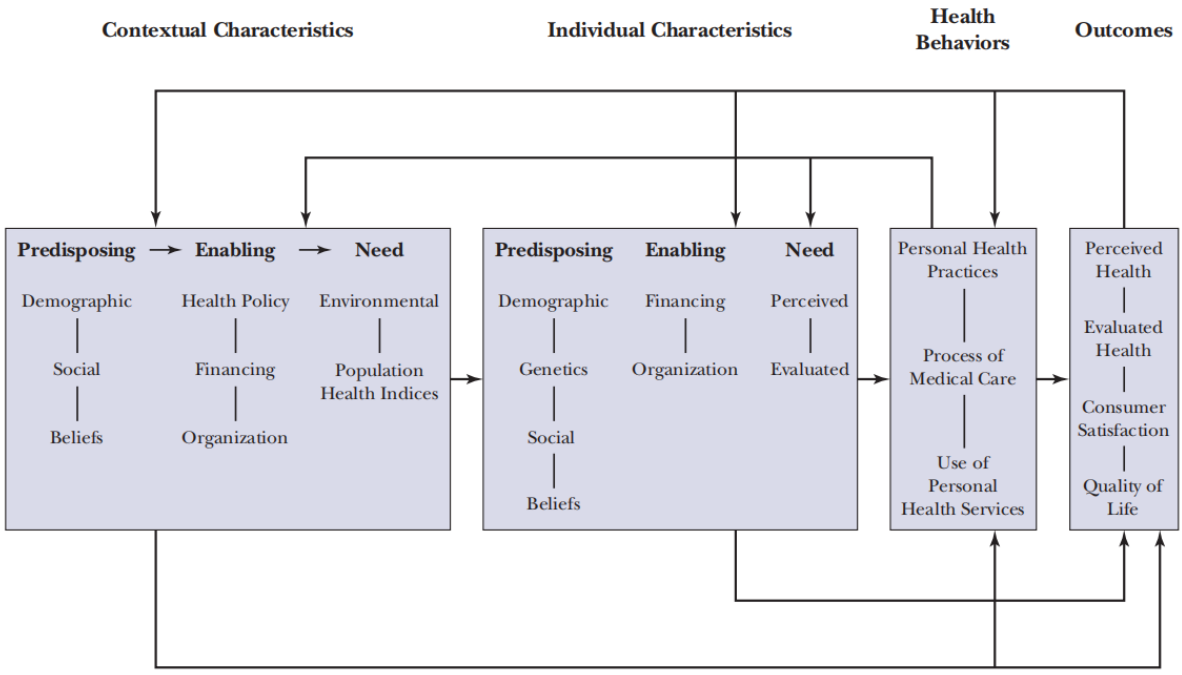
3.2 Theoretical Frameworks – Andersen's Behavioural Model

The theoretical framework is the structure that can hold or support a theory of a research study. It encompasses the theory and the narrative explanation of how the researcher uses the theory and its underlying assumptions to investigate the research problem. This study employed Andersen's Behavioural Model as the framework to frame the possible factors that affect healthcare access and utilisation and interpret and discuss the findings.

Andersen's (1995) behavioural model of health service use a widely employed model in healthcare service forecasting internationally. This model focuses on selecting, identifying, and sequencing the relevant variables

in healthcare access and use (Andersen et al., 2013). It has been applied to late-life adults in previous studies examining access and use of health services (Lai & Chau, 2007; Pang et al., 2003). This study uses Andersen's Behavioural Model as a theoretical framework to investigate and frame the factors that affect healthcare access and utilisation among recently arrived Chinese late-life migrants.

Figure 3.3: *Andersen's behavioural model of health services utilisation*[3]



Andersen's Behavioural Model considers healthcare access and use as a function of three characteristics (see Figure 3.1). First, the predisposing characteristics are the demographic and social conditions influencing the individual's decision to access and utilise healthcare services (Andersen et al., 2013). These predisposing characteristics include individuals' demographic characteristics (i.e., age and gender), social structure (i.e., ethnicity, immigration status, length in the host country, language competence, and cultural background), and health beliefs (i.e., values and attitudes towards healthcare system) (Andersen et al., 2013).

3 *Note: F*igure 3.1 demonstrates the contextual and individual characteristics of Andersen's health behaviour model. Adapt from "Figure 2.1 A behavioural model of health services use including contextual and individual characteristics" by R. M. Andersen, P. L. Davidson, and S. E. Baumeister, 2013, *Improving access to care*, p. 35, Jossey-Bass. Copyright 2013 by Jossey-Bass.

Second, the enabling resources contain economic circumstances (e.g., financial support and health insurance) that facilitate healthcare service utilisation (Andersen et al., 2013). The enabling resources also comprise community resources available in the area (Andersen et al., 2013). These healthcare resources consist of available health facilities in the area, available Chinese-speaking healthcare practitioners, and available public healthcare information sources.

Third, the healthcare need factors reflect the perceived health service needs and are related to illness (Andersen et al., 2013). These need-related factors are usually perceived by self-report (how individuals view their health) and assessed by healthcare providers (evaluated needs). However, the evaluated needs do not apply to this study, as the study focused on participants' perspectives. Moreover, to ensure compliance with ethical standards and protect the sensitive data of participants, this study refrained from collecting personal information related to individuals' health status.

3.3 Methodology

The methodology is among the core components of any research process; it is the "strategy, plan of action, process or design lying behind the choice and use of methods and linking the choice and use of methods to the desired outcome" (Crotty, 1998, p. 3). It provides a systematic way to address research problems (Kothari, 2004). This systematic approach guides the researcher in selecting and applying appropriate research methods and techniques relevant to the research questions and assumptions. Thus, the foremost step in this chapter is to consider the options available in formulating an appropriate methodological framework.

3.3.1 Methodology Framework

Pragmatism, a practical philosophical approach that emerged in the USA in the 1870s (Guba, 1990), places problem-solving at the heart of philosophical activity, rather than system-building (Biesta, 2009, p. 97). Unlike other paradigms, pragmatism embraces a compatibility stance, as seen in mixed-methods research (Johnson & Gray, 2010). This study employs an abductive approach to bridge theory and data. In phase one, an inductive approach is used to delve into the factors influencing healthcare access and utilisation for recently arrived

Chinese late-life migrants. Building on the findings of phase one, phase two adopts a deductive approach to design a pilot survey on health access and utilisation for the same group.

Pragmatism has been instrumental in redefining traditional perspectives on axiology, epistemology, and ontology (Biesta, 2015; Lincoln & Guba, 1985; Morgan, 2014). Axiology, which pertains to the research purpose, is reimagined in this study as the assessment of the researcher's value at all stages of the research process (Saunders et al., 2019). The values of this mixed-methods study are situational (Teddlie & Tashakkori, 2009). The axiology for phase one is subjective, acknowledging that valuable knowledge is constructed by individuals and can vary based on their experiences (Morgan, 2014). In contrast, the axiology for phase two is objective, asserting the world (Morgan, 2014).

Epistemology and ontology, two distinct lenses through which research philosophy is viewed, offer different insights. Epistemology focuses on the nature of knowledge (Creswell, 2014), while ontology delves into what constitutes reality (Morgan, 2014). This study, in its pragmatic approach, concentrates on practical applied research and the integration of diverse perspectives to aid in data interpretation (Biesta, 2009). Specifically, the epistemological and ontological stance of the mixed-methods study should correspond to the stage of the study (Morgan, 2014). In phase one, knowledge is grounded in real-world phenomena, and reality is shaped by participants' viewpoints. In contrast, the knowledge for phase two is based on objective reasoning, and reality is not contingent on participants' consciousness.

3.3.2 Mixed-Methods

The mixed-methods approach is the third methodological movement after quantitative and qualitative methodology (Saunders et al., 2019). It was outlined in the 1980s and has become more popular in the health sciences in the last decades (Creamer, 2017). By integrating qualitative and quantitative methods, the mixed-methods study can maximise the strength of each approach (Creswell, 2014; Schoonenboom & Johnson, 2017). However, it's important to note that this approach may require more resources and time compared to using a single method and conversely can then provide a better understanding of research questions from different points of view (Venkatesh et al., 2013).

Mixed methods research, often dubbed the "third methodological orientation" (Teddlie & Tashakkori, 2008), leverages the robustness of both qualitative and quantitative research. The defining feature of the mixed-methods research approach is the separate collection and analysis of qualitative and quantitative data, which is integrated – concurrently or sequentially – into one research to address the research question (Creswell, 2014; Creswell & Clark, 2017). This integration of qualitative and quantitative results yields a comprehensive and enriched answer to a research question (Creswell, 2014), providing a deeper understanding.

This mixed-methods study employs the exploratory sequential strategy to explore the healthcare access and utilisation of recently arrived Chinese late-life migrants in Aotearoa NZ during and beyond the coronavirus disease (COVID-19) outbreak situation. An exploratory sequential design is a practical mixed-methods study design where the quantitative phase of data collection and analysis follows the qualitative phase of data collection and analysis (Fetters et al., 2013; Creswell & Clark, 2017), demonstrating the real-world application of mixed-methods research in healthcare studies.

3.4 Research Design Method

While research methodology provides the framework and overall approach to solving the research problem, research methods, sometimes referred to as research techniques, are practical steps used in performing research operations guided by the methodological framework (Kothari, 2004). In the context of this mixed-methods study, the research design includes an overview of the research objectives/questions, exploratory sequential mixed-methods design, ethics approval and ethical considerations, and the inclusion and exclusion criteria for potential participant recruitment.

3.4.1 Research Objectives

This mixed-methods study aims to explore the following research objectives:

1) to explore the possible factors that inform recently arrived Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ, in the face of non-pandemic and COVID-19 pandemic environments;

2) to modify and pilot a nationally administered survey on the health service access and utilisation and patient experiences of recently arrived Chinese late-life migrants in Aotearoa NZ, in the non-pandemic and COVID-19 pandemic circumstances; and

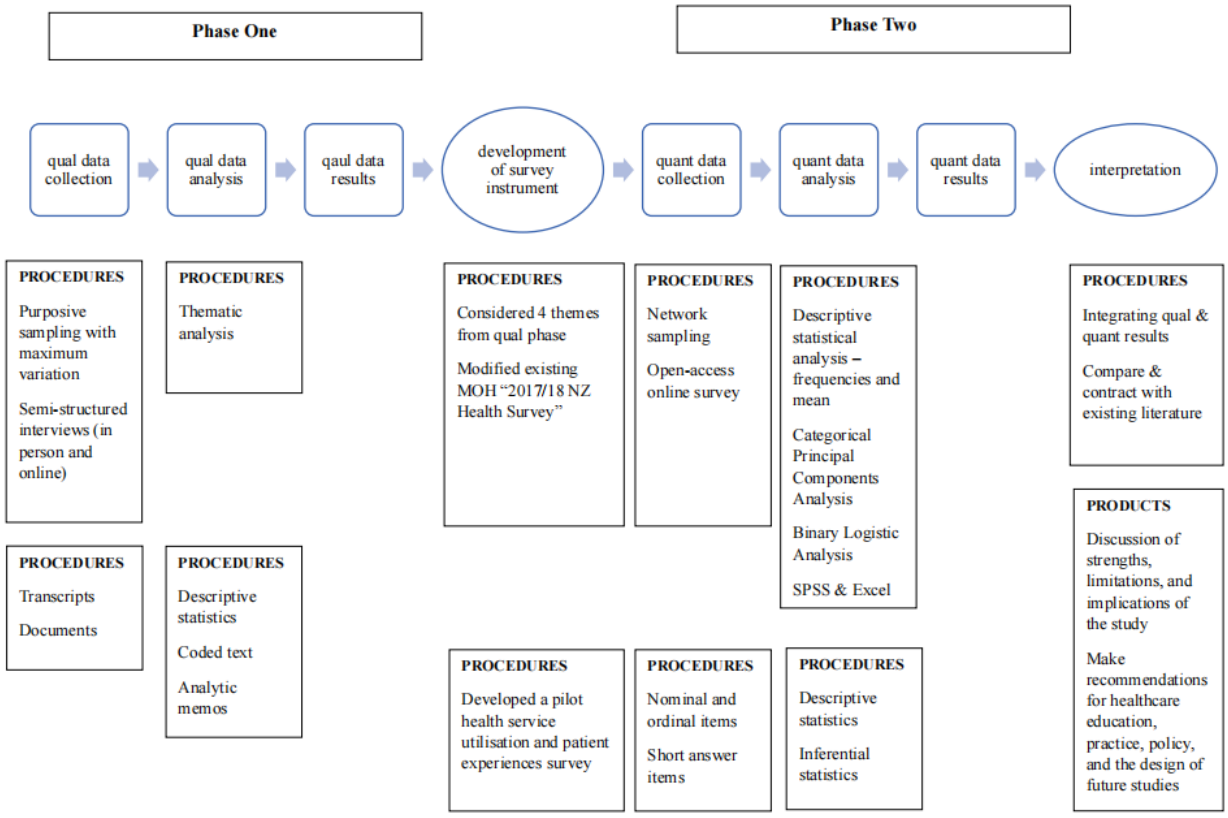
3) to propose actionable recommendations for enhancing health service access and utilisation for Chinese late-life migrants and their families in the face of non-pandemic and future pandemic environments.

3.4.2 Exploratory Sequential Mixed-methods Design

It's important to understand that the use of both qualitative and quantitative methods in a study does not automatically classify it as mixed methods research. This doctoral study followed an iterative and comprehensive exploratory sequential framework, a key aspect of mixed methods research. This framework emphasises the integration of qualitative and quantitative phases (Fetters et al., 2013). In the investigation, the initial integration took place at the design level, where the insights from phase one guided the design of phase two.

Figure 3.2 illustrates this exploratory sequential design, showing that the initial phase (phase one of the study) used the QD to capture participants' perceptions and experiences of accessing/using NZ health services in non-pandemic and COVID-19 pandemic circumstances. Following an exploratory sequential strategy, the findings from the qualitative phase (phase one) were then used to shape the development of a quantitative instrument (a pilot survey) to delve deeper into the research problem (Creswell & Clark, 2017; Teddlie & Tashakkori, 2009). In phase two, the qualitative results were used to modify an existing survey and develop a pilot survey on healthcare utilisation by the target population in Aotearoa NZ in non-pandemic and COVID-19 pandemic circumstances.

Figure 3.4: *Exploratory Sequential Mixed-methods Research Design*



Furthermore, this study goes beyond the traditional approach to research integration. It conducts an interpretation-level integration, linking the qualitative findings from phase one with the quantitative data from phase two. This unique integration of findings from both phases aims to uncover insights beyond what can be gleaned from the separate quantitative and qualitative results (Fetters et al., 2013). These insights have practical implications for healthcare utilisation, providing a comprehensive understanding that can inform policy and practice.

3.4.3 Population and Sample

The target population of this study consisted of recently arrived Chinese late-life migrants who resided in Aotearoa NZ during the study period (2020-2023). The sample selection procedures for this study include the following criteria. The inclusion criteria related to "Chinese late-life migrants" with health services access and utilisation experience are:

1) People who identify themselves as Chinese.

2) Sixty-five years of age and over.
3) All genders
4) Have arrived in Aotearoa NZ less than ten years ago from the date of the interview/survey.
5) Currently holding permanent residency or NZ citizenship.
6) Reside within the Auckland region.

3.4.3.1 Inclusion and exclusion criteria

To better understand sample selection procedures for this study, this section provides the rationales behind the sample selection criteria.

First, this study focused on potential participants who identify themselves as Chinese. Ethnic heredity may establish a person's ethnicity. However, as previously described in Chapter One, cultural belongingness and upbringing environments also play a crucial role in shaping individuals' perspectives and beliefs of their ethnicity (Lin et al., 2022). Thus, this study defined a migrant as Chinese only when they self-identify as such. This self-identification process involved a series of questions and discussions with the potential participants to understand their cultural and ethnic affiliations.

Second, this study defined 'late-life' as a person aged 65 and over. Most low- and middle-income countries define a late-life person as a person who is 60 years or over (Law of the People's Republic of China on the Protection of Rights and Interests of the Elderly, 1996; WHO, 2017). However, the definition of a late-life person in many high-income countries usually relates to the age (around age 65) at which one begins to receive pension benefits (Koopman-Boyden, 2018; WHO, 2018). According to the outcomes of Stats NZ (2018), a pension is only available for individuals aged 65 or older. Therefore, it is reasonable to consider individuals aged 65 and above as the criterion for identifying late life in this NZ-based study. This age was chosen to align with the local context and the availability of pension benefits, which are significant factors in the lives of late-life migrants.

Third, an eligible participant must arrive in Aotearoa NZ less than ten years ago from the date of the interview/survey. World migration report pointed out that COVID-19-related immobility has become the great disrupter of migration (McAuliffe & Triandafyllidou, 2021). For safety issues, some late-life migrants may move back to their home country, and others may cancel their migration plan. Moreover, the NZ government also considered reducing the number of migration cases for capped family categories each year since 2016 (INZ, 2019). To increase the sample variance, 'ten years' was accepted as the period of recently arrived instead of five years, which has been used in previous studies (Portes et al., 2012; Scheppers et al., 2006). This extended period was chosen to capture a broader range of experiences and to account for the recent changes in migration policies and patterns, particularly those related to the COVID-19 pandemic.

Moreover, this study specifically targets all eligible Chinese late-life migrants who resided in the Auckland region during the defined study period (2020-2023). As previously discussed in Chapter One, Chinese population are the largest Asian ethnic group in Aotearoa NZ. According to the findings from Stats NZ (2018), more than 112,000 Chinese New Zealanders lived in the Auckland region in 2018. The findings from Stats NZ (2018) also indicated that nearly 50% of the immigrants have recently arrived in Aotearoa NZ (arrived in Aotearoa NZ ≤ 10 years ago). Meanwhile, INZ (2019) reported that nearly 25% of the total Chinese residents in the Auckland region are 65 years old and over. Thus, these inclusion criteria allowed this study to get an appropriate sample size, reinforcing the relevance of this study's scope to the demographic landscape of the Auckland region.

Additionally, to minimise gender bias and enhance ethical considerations, this study recruited 'Chinese late-life migrants' of all genders. This recruitment process involved reaching out to various community organisations, retirement homes, and social groups to ensure a diverse representation of genders. Furthermore, following the definition of 'migration' in Oxford dictionaries (2024), this study defined 'migrant' as a person currently holding permanent residency or NZ citizenship. This definition was used to ensure that the participants have a significant and long-term connection to Aotearoa NZ, which is crucial for understanding their experiences and perspectives.

Furthermore, to ensure the utmost fairness and transparency, no person is excluded from participating in this study. This approach is designed to minimise research bias and make the study more ethical. Namely, all participants who meet the eligibility criteria and participate during the survey period are included in the study.

3.4.4 Ethics Approval and Ethical Considerations

The Auckland University of Technology Ethics Committee (AUTEC) granted ethics approval for phase one of this study on 24 August 2020, and for phase two on 07 December 2021 (Appendix A1 & A2) with the approval number of 20/234. All research procedures employed by this study carefully follow the provision and guidelines set by AUTEC.

To protect participants and the researchers, the ethical concepts of no harm, voluntary participation, informed consent, avoiding deceit, and confidentiality (AUTEC, 2019) must be included in any investigation conducted. Moreover, this study also acknowledges the importance and unique value of the Treaty of Waitangi and the implications for Māori in the context of Aotearoa NZ (AUTEC, 2019; Hudson et al., 2009).

Although this study was considered low risk, minor issues could arise from discussing past healthcare experiences, especially during interviews (phase one). Discomfort might occur based on participants' experiences or views on specific interview questions. To ensure the principle of "no harm," this study considered not collecting participants' health condition details and allowed participants to skip questions or terminate the interview if they felt uncomfortable. The researcher of this study also had the discretion to stop the interviews if risks were present. In these instances, the researcher would advise the participants of prearranged free counselling services (details see Appendix B2-1). No participants requested counselling services during the study. Additionally, some interviews were conducted in participants' private homes. Thus, researcher safety was ensured by notifying family members or support persons of the interview times and locations.

Participation in both phases of the study was entirely voluntary. Potential participants received detailed information about the study's purpose and nature and had to provide consent before participating. For phase one, potential interview participants received an Interview Participant Information Sheet (see Appendix B2-1 & B2-2) and an Informed Consent Form (see Appendix B3-1 & B3-2) before participating. For phase two, potential survey participants could read the information sheet attached to the beginning of the online questionnaire before starting the pilot survey (see Appendix C1 & C2). Completing the survey constituted consent, eliminating the need for a signed consent form. All materials were provided in both English and Chinese to address potential language barriers, ensuring clarity and avoiding misunderstandings. Participants were encouraged to ask questions at any stage of the research.

Before participating, both interview and survey participants were given accurate and precise information about their involvement, including potential costs, benefits, and risks. They were also provided contact information for official oversight personnel if they had any concerns. Participants were also informed of their right to withdraw from the study or retract any information without restrictions. Notably, participants remained in this study.

The researcher is committed to the protection of participants' privacy and confidentiality. Throughout this study, all records of communication and exchange of information were only available to the researcher and the supervision team. Pseudonyms were used to replace any identifying details of the interview (phase one) participants in all recordings, transcripts, and survey documents (see Table 4-1 in Chapter Four). Meanwhile, the pilot survey (phase two) was anonymous, meaning the survey participants were unlikely to be identified as the study was written up. Moreover, participants were advised of their rights to request all or any parts of their personal information, as well as information provided for this study, to be removed and destroyed. All materials relating to this study are managed, stored, and later destroyed strictly in compliance with AUTEC protocol.

Although this research does not directly involve Māori participants or issues, the principles of the Treaty of Waitangi are relevant to all relationships with immigrants and minority groups in Aotearoa NZ. This study focused on recently arrived Chinese late-life migrants and their access to the NZ healthcare system.

Understanding the healthcare utilisation of this group may benefit the Māori population, the largest minority group in Aotearoa NZ. The research was conducted with full respect for the Treaty of Waitangi's partnership, participation, and protection principles, ensuring these principles are applied to researcher/researched relationships.

3.5 Phase One Method

Phase one of the study aims to identify and understand the potential barriers to accessing and utilising NZ healthcare services by recently arrived Chinese late-life migrants. This is achieved through their own experiences, as outlined in Research Objective One. To ensure the transparency and reliability of the research methods, the study adheres to the qualitative Descriptive (QD) methodology. The Consolidated Criteria for Reporting Qualitative Research (COREQ) checklist (Tong et al., 2007) is a key tool in this process. It demonstrates the research methods employed in phase one of the study, including the sampling strategy, participant selection procedures, data collection and analysis strategies, and rigour.

3.5.1 Descriptive Qualitative (Phase One)

Unlike some of the more popular qualitative methodologies, such as phenomenology, grounded theory, ethnography, or narrative studies, that are based on specific methodological frameworks, the QD methodology is not usually shaped or restricted by pre-set conceptual or theoretical systems (Doody & Bailey, 2016; Saunder et al., 2019). It refers to a naturalistic or observational technique aiming at describing phenomena or presenting facts objectively for what they are (Neergaard et al., 2009) without too much subjective interpretation from the researcher's point of view (Lambert & Lambert, 2012). While the QD approach may be criticised for its lower analytical power, it has its strengths and is particularly valuable when it aims to provide a straightforward, clear, and detailed account of the phenomena under study (Liamputtong, 2020; Sandelowski, 2000). In the context of this study, the use of QD methodology is not just a choice, but a necessity. It allows for a more straightforward exploration of recently arrived Chinese late-life migrants' perspectives on healthcare access and utilisation in Aotearoa NZ, thereby making their experiences and viewpoints more tangible and relatable. This approach aligns to understand the individual perspectives and barriers in a more direct and participant-focused manner, making the research more relevant and impactful.

Furthermore, the recently arrived Chinese late-life migrants participating in this study come from a distinctive cultural environment and concerns central to their healthcare are deeply embedded in their cultural context (Tolley et al., 2016), as forecast in many qualitative studies. The QD methodology, with its unique ability to capture the nuances and intricacies of cultural contexts, is particularly valuable in this scenario. It can delve into the complex cultural world these migrants live in, uncovering the hidden layers of their healthcare issues and generating new understandings that can be used by the whole community/society (Green & Thorogood, 2018). Additionally, the QD approach has significantly contributed to developing questionnaires within mixed-methods studies (Creswell, 2014). Using the qualitative method to creatively generate survey questions can add rigour to the study through triangulation (Hastings, 2012; Venkatesh et al., 2013), thereby enhancing the depth and richness of the research.

3.5.2 Sampling Approach - Purposive Sampling

The aim of qualitative sampling is not concerned so much with data representativeness or sample size but rather with the richness of the informants, which refers to the depth and breadth of their experiences and perspectives and the in-depth information they can provide (Subedi, 2023). This richness is a key criterion in participant selection as it ensures that the data collected is comprehensive and nuanced, providing a deeper understanding of the research topic (Subedi, 2023). The objective and sampling methods differ fundamentally from quantitative research (Liamputtong, 2020). Unlike quantitative studies, where sampling is to provide statistical generalisation, qualitative sampling is purposive (Liamputtong, 2020).

Consistent with the purposes and assumptions inherent in the QD method, this study used purposive sampling with maximum variation (i.e., age and time in Aotearoa NZ) in phase one. Purposive sampling is a technique widely used in qualitative research to identify and select information-rich cases for the most effective use of limited resources (Parahoo, 2014; Sandelowski, 2010). This strategy allows researchers to recruit participants with required experiences related to the research objective(s) (Palinkas et al., 2015).

3.5.3 Participant Recruitment

For phase one of the study, twelve key participants were recruited with purposively sampled participants with diverse socio-demographic characteristics (i.e., age, time in Aotearoa NZ, and family support). The purposive selection of cases with such variation helped to document unique or diverse variations that have emerged in adapting to different conditions and to identify critical common patterns across variations. This strategy, known as 'maximum variability ', is crucial as it ensures that the sample represents a wide range of experiences and perspectives, enhancing the richness and depth of the data collected (Parahoo, 2014; Sandelowski, 2010). For example, healthcare access and utilisation may be influenced by different factors, such as late-life adults (aged 65 to 75) and late-life adults (aged 75 and over). By employing this sample selection strategy, this study ensured the presence of maximum variability within the primary data.

Potential participants were recruited through multimedia, which is commonly used by Chinese late-life migrants. These media include websites (Trade Me and Skykiwi) and social media (WeChat and Facebook). The recruitment poster (Appendix B4-1 & B4-2) and participant information sheet (Appendix B2-1 & B2-2) are posted through these media. Meanwhile, the recruitment posters were posted in public facilities (including the Auckland City Library, Browns Bay Library, Northcote Library, and Takapuna Library) to meet the sample size. The invitation messages were sent out through local community networks (such as the North Shore Chinese Community network, the Onehunga Chinese Community network, and the Epsom Chinese Community network). Although many late-life Chinese showed interest in this study, the researcher of this study lost contact with several potential participants during the COVID-19-related lockdowns in the Auckland region, highlighting the challenges faced in maintaining participant engagement. Finally, twelve eligible participants participated in phase one of the study, underscoring the complexity and real-world applicability of the research.

3.5.4 Semi-structured Interview Guide

The semi-structured in-depth interview guide, a product of the collective effort, was developed to collect participants' experiences in relation to the research objectives. This guide (see Appendix B1), based on a

comprehensive review of the published literature in Chapter Two, is a unique approach in the field of qualitative research. Unlike other methods, the QD approach uses a slightly more structured interview guide, ensuring a wealth of data is collected (Liamputtong, 2020; Sandelowski, 2000). The advantage of this approach is that it avoids limiting responses and encourages participants to freely elaborate on their perspectives and experiences (Jacob & Ferguson, 2012; Stanley, 2015), thereby enhancing the depth and richness of the qualitative data.

Open-ended semi-structured questions, designed to gain insight into participants' perspectives and experiences, were a key feature of the interview. The questions were structured with non-leading language, a deliberate choice to encourage participants to share their experiences and reduce the effect of researcher bias (Morris, 2015). This approach avoids asking questions that start with suggestive words such as 'Did you …?' 'Were you …?' or 'Was it …?', instead opting for neutral interrogatives (who, what, when, where, why, and how) or neutral invitations (tell, describe, and explain). The wording of the questions was intentionally simple and free of jargon, ensuring participants could easily understand (Jamshed, 2014; Kvale & Brinkmann, 2009). The prearranged interview questions can be found in Appendix B1.

3.5.5 Piloting

The pilot test, a crucial step in the research process, serves to gauge the effectiveness of the interview guide, identify any potential ambiguity, assess the timing, and ensure the preparation of a comprehensive set of questions. This meticulous approach is designed to provide a broad and in-depth insight into the research topic (Doody & Noonan, 2013; Morris, 2015). The pilot interview, a practice run, is instrumental in honing the interview skills and refining the guide (Castillo-Montoya, 2016). Following the approval of ethics by the AUTEC (on 24 August 2020, reference number 20/234, see Appendix A1), two pilot interviews were conducted, in order to further modify the semi-structured interview guide. The participants for the pilot interview were selected based on a similar inclusion criterion as the group of participants for phase one, using purposive sampling and the participants' willingness.

In a bid to ensure the inclusivity and cultural sensitivity of this study, the researcher sought the feedback of two advisors from Chinese communities, namely The Asian Network Incorporated (TANI) and the Chinese Association of North Shore City Auckland. Their insights were invaluable in further refining the interview guide. Overall, they provided positive feedback on the guide, suggesting the use of follow-up questions in case the interviewees' responses were too general. Sample questions they proposed include, "Why did you change the GPs?" and "What is the most important factor for you to choose to use or not use such health services?"

3.5.6 Data Collection

A semi-structured interview method was used for this study. The semi-structured in-depth interview was designed with predetermined questions and/or topic areas in mind (Lune & Berg, 2017). However, this does not mean that questions are asked in the exact words and follow the same order (Bowling, 2014). Instead, they were used to guide the process while the actual speech events are constantly negotiated and reformulated throughout the interaction between the researcher and the participant (Dicicco-Bloom & Crabtree, 2006; Jamshed, 2014). This practice allowed flexibility for exploring and gathering experiential narratives to develop an in-depth understanding of real-life events and experiences (van Manen, 2016).

This study employed multiple strategies to determine adequate sample size and ensure data saturation in qualitative phase of the study (phase one). These strategies included the clear and appropriate research objectives, research design, sampling strategy, data collection methods, and data analysis techniques. First, this study has a clear and focused research question/objective that guides data collection and analysis. Second, the purposive sampling with maximum variation was used to allow researchers to recruit participants with required experiences related to the research objective(s). Third, potential participants were recruited through multimedia (including websites, social media, and post boards in public libraries), which is commonly used by Chinese late-life migrants. Fourth, an open-ended semi-structured question guide was designed to gain insight into participants' perspectives and experiences. Fifth, phase one also employed thematic analysis to organise and synthesise the data. Meanwhile, the study used a peer review (supervision team) to verify and validate the data analysis and findings. Once adding more data would not yield any new insights or categories, the researcher ensured that the study have collected enough data for phase one.

In total, 12 eligible Chinese late-life migrants participated in the interview process that concluded when saturation was achieved. Aotearoa NZ was experiencing a COVID-19 pandemic during the phase one study period (between 2020 and 2021). Minimising in-person contact was essential to contain the risk of COVID-19 transmission (MOH, 2020). Thus, eight out of twelve interviews were held online (via WeChat) or through video telephone calls. Four participants were interviewed in person at their residential homes when the state of Alert was reduced to level 1 or removed altogether.

After giving informed consent, participants were interviewed individually in Mandarin. The researcher then briefly introduced the study purpose, participants' involvement and contribution, and the interview procedure. Participants' rights were also explained. Participants were reminded that they were entitled not to answer questions they did not feel comfortable with and that they could temporarily break from or terminate the interview at any stage if they did not wish to continue. The participants then had the opportunity to raise questions or request further information they might need before the interview commenced.

Each interview took about one or two hours to collect rich data (Morris, 2015). All interviews were audio-recorded and transcribed word for word by the researcher. The transcript (Chinese version) was then sent to the participants for comments and to request any changes be made, if necessary, within one week of receiving the transcripts. None of the interview participants responded with change requests or further comments. Participants' body language, facial expressions, and silence during the conversation were also recorded and were observed to increase the richness of the data (Doody & Noonan, 2013; Morris, 2015). Additionally, participants were asked to fill out their socio-demographic characteristics information sheet (see Appendix B5) to collect their brief contextual information.

During the data collection phase, preliminary interactive data analyses were undertaken. In qualitative studies, data collection and analysis processes often occur simultaneously as they both mutually shape each other (Liamputtong, 2020). The following section illustrates the data analysis method used in phase one of the study.

3.5.7 Data Analysis Method

Since the participants were interviewed in Mandarin, all the interview records were translated into English before analysis. Forward-translation and back-translation methods were adopted to ensure the reliability and validity of the research findings (Chen & Boore, 2009). In this study, the bilingual (Mandarin/English) researcher (myself) forward-translated the source text (interview record) from Chinese to English. Rather than translate word-for-word, the definition of the original term was considered and attempted to translate it in the most relevant way. After the first two translations of the interview records, the notes were translated back to Chinese by an independent translator whose mother tongue is Mandarin, who was bilingual in Mandarin and English and has no knowledge of this study (see Appendix E: Transcribe Confidentiality Agreement). The new translation text was compared with the original interview notes to avoid discrepancies (Tyupa, 2011). Since there were no meaningful differences, the back-translation process was unnecessary for the rest of the transcriptions. The translation and back-translation method can help develop a clear audit trail of the study's rigour (Chen & Boore, 2009), by documenting the potential issues from the comparing step and the solutions for these issues, which accounts for any changes that may occur within the translation process.

The complexity of the interview data meant it was virtually only possible to develop appropriate categories with a comprehensive understanding because all interview data had individual characteristics and were highly versatile. The only logical way was to start from the data end. As suggested by Armstrong (2010), qualitative data analysis is a process that begins when the researcher makes sense of the data. Denzin and Lincoln (2008) further suggested that such a process starts with specific observations, which later form more general rules. These methods imply a strategy of deriving patterns, often called code from the data. The coded data was then thematically analysed to identify patterns (pattern recognition) in seemingly random information (Patton, 2002).

The purpose of thematic analysis is to identify patterns of meaning across a dataset that provide an answer to the research question being addressed (Vaismoradi et al., 2016). Following the six steps of the thematic analysis strategy proposed by Braun and Clark (2006), phase one of the study used NVivo (v20) software, a

powerful tool, to assist in the analysis process. This software significantly enhanced the efficiency and accuracy of the thematic analysis.

Step one was familiarising the data (Braun & Clark, 2006). Soon after each interview, the researcher of this study (myself) transcribed the audio record to a written document after repeatedly listening to the interview record and then translated the Chinese text to English. Step two was coding (Braun & Clark, 2006). The features of the data (code), including essential opinions, statements and findings related to the research focus, can be identified by reading and rereading. The potential themes can be developed by identifying significant broader patterns of meaning from the codes and collected data (step three) (Braun & Clark, 2006). Reviewing themes with the supervision team then took place (step four). At this step, the candidate themes were checked against the dataset to determine that they tell a convincing story of the data and answer the research question. A smaller number of themes stood out to capture the experience after repeatedly reading, reviewing, and refining themes and subthemes (Nowell et al., 2017). The fifth step was to define and name the final themes (Braun & Clark, 2006). By developing a detailed analysis and working out the scope and focus of each theme, an informative name for each can then be decided. Finally, the findings were reported (step six) and then used to modify and construct the questionnaire. An example of thematic analysis is represented in Table 3.1. The qualitative findings of the analysis are discussed in detail in Chapter Four.

Table 3-1: *Example of Thematic Analysis Process*

Transcript	Code	Potential Themes
Participant 8: "Oh that. I twisted my waist, around my back. My **GP was advising** me to see like **western physiotherapy**,	Upbringing	Healthcare Awareness
but **to us Chinese**, **we know** that **acupuncture works well on these problems** and **we trust it**. It turned out quite good actually."	Trust	Patient-Practitioner Relationship

3.5.8 Rigour

Rigour refers to issues raised by the term's validity and reliability (Liamputtong, 2020). It describes the procedures that enhance the scientific integrity of the research findings (DePoy & Gitlin, 2005). The QD

methodology is often criticised for needing more rigour than theory-based approaches (Krefting, 1991; Sandelowski, 2010). Journaling, member checking, and peer debriefing can address this weakness. These strategies are organised following the framework proposed by Lincoln and Guba (1985). This framework involves the principles of credibility, transferability, Dependability, and confirmability.

3.5.8.1 Credibility

The credibility of a qualitative descriptive approach study is dependent upon whether the research steps and processes can be easily traced and whether the experiences described by the participants are genuinely theirs (Lincoln & Guba, 1985).

Several strategies were used to increase the credibility of the phase one of the study. First, a semi-structured interview guide was developed to support the quality of the collected data (Leech, 2010; Liamputtong, 2020). Second, late-life migrants who participated in the semi-structured interview were involved in the member-checking process, where possible, to ensure the accuracy of the interview transcript. Third, an independent translator was employed to translate the English interview records back to Chinese to check the accuracy of the forward translation from the original Chinese text to English. Fourth, the language used to analyse and interpret data remained very close to the participants' language (Liamputtong, 2020; Sandelowski, 2010). Finally, critically reflecting on personal thoughts and feelings about the research process and the personality of a qualitative researcher allowed the researcher of this study to discover and adjust the potential biases and preconceived assumptions (Palaganas et al., 2017).

Credibility also involves other factors, such as reflexivity, triangulation, and methodology appropriateness. Reflexivity was maintained in this study as the researcher constantly and honestly evaluated the action and role in the research process. Being a Chinese immigrant, the researcher of this study may risk bringing pre-existing values and beliefs into the study as bias because they may influence the observation and interpretation of the behaviours of others (Whitehead et al., 2016). To minimise these potential influences, the researcher of this study (myself) kept records of the thoughts, feelings, and ideas instead of attempting to disguise the role

as an instrument of the research. The data collection and interpretation procedures were also closely consulted and monitored by the academic supervision team to avoid potential bias.

Credibility can also be achieved by selecting and applying methodology, research methods, and techniques appropriate to the research questions. This study employed triangulation (Liamputtong, 2020). By employing both qualitative and quantitative methods, methodological triangulation ensures that the weaknesses of one method can be recouped by the other (Rothbauer, 2012; Sandelowsk, 2010). A mixed-methods approach also enabled the researcher to rise above "the personalistic biases that stem from single methodologies" (Denzin, 2009, p. 300).

3.4.8.2 Transferability

Transferability refers to the degree to which the results of qualitative research can be transferred to other contexts (Liamputtong, 2020; Polit & Beck, 2014; Jensen, 2012a). This study established a clear structure of the methodology and research process with sufficient information regarding research settings, participant selection and data analysis relative to the nature and purpose of the research topic and questions. This helped the readers and observers of this study to evaluate the transferability and practicality of adopting them in other contexts. However, like many other qualitative descriptive studies, the sample size of this study needed to be sufficiently large to generalise into other contexts without excising careful comparisons and evaluations. The unique characteristics of the Chinese culture, values, and beliefs were also essential factors worth noting regarding their applicability to other populations.

3.4.8.3 Dependability

To promote dependability, an adequate description of the study procedures was provided to allow data collection and analysis to link back to theoretical constructs (Liamputtong, 2020; Sandelowski, 2000, 2010). All logical steps in forming the reasoning behind the choices and implementations of the methods were structurally valid and showed the roadmap of how conclusions are drawn from the logic flow. The methodological triangulation is also helpful for checking the consistency of findings developed by qualitative and quantitative data (Hasting, 2012; Jick, 1979). by using a reasonable explanation of the apparent

contradictions or deviant cases, the dependability of the results can be ensured (Rothbauer, 2012). Furthermore, an audit trail was established to examine the research procedures and processes (Liamputtong, 2020; Sandelowski, 2010). By journaling, a clear audit trail can account for any changes in the research process.

Additionally, using the triangulation method in the peer examination was another helpful strategy. The accuracy of the participants' perspectives and accounts of real-life experiences was ensured by sending the interview transcripts materials back to the participants for verification and comments. Although no issues were raised by the participants regarding the accuracy of interview content and no request for changes was received, the employment of such a check and re-check cycle still procedurally helps to ensure the accuracy of assumptions and judgement (Coolican, 2013).

3.4.8.4 Confirmability

Once credibility, transferability, and Dependability are developed, confirmability can be assured (Jensen, 2012b). The above discussions have demonstrated that every effort has been made to ensure the researcher of this study followed an independent procedure of inquiry, using techniques such as reflexivity and triangulation to form a methodological framework, select participants, and collect and analyse data to present them in a truly reflective way.

The primary strategy to establish confirmability in this study was the audit trail. By closely and continuously monitoring and reviewing the data collection and analysis, the researcher of this study can limit the preconceptions and other researcher biases and ensure the findings are based on the participants' narratives (Rodger, 2012; Sandelowski, 2010). Moreover, other strategies like triangulation of multiple methods and reflexive analysis can also enhance neutrality (Polit & Beck, 2014; Sandelowski, 2000, 2010).

3.6 Phase Two Method

The primary purpose of phase two is to modify and pilot a nationally administered survey on the health service access and utilisation and patient experiences of recently arrived Chinese late-life migrants in Aotearoa NZ, in the non-pandemic and COVID-19 pandemic circumstances (Research Objective Two). This phase is

meticulously guided by the qualitative insights merged from phase one, ensuring a comprehensive approach. Phase two of the study modified an existing validated questionnaire from MOH (2017/18 NZ Health Survey) and developed a pilot survey for health service utilisation and patient experiences. To facilitate data collection from a larger sample and offer a broader understanding of the trends and patterns identified during the qualitative phase (Creswell & Clark, 2017), the purposes of this cross-sectional survey are:

1) To explore the healthcare access and utilisation for recently arrived Chinese late-life migrants in Aotearoa NZ, in non-pandemic and COVID-19 pandemic circumstances; and
2) To investigate the predisposing, enabling, and health need-related factors that associated with their healthcare access and utilisation.

Due to the nature of a pilot survey, it also aims:

3) To inform the recommendations for the design of a nationally administered survey.

This section will systematically describe the research methods employed in phase two of this study. Following the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) (Eysenbach, 2004), the research design and the target population of phase two are introduced. It also elaborates on the diverse sampling and participant recruitment strategies used in phase two of the study. The section then describes the data collection procedures used in phase two. Finally, it illustrates the statistical methods the study used to analyse data.

3.6.1 Quantitative Survey (Phase Two)

Quantitative research is a systematic approach to investigating phenomena by gathering data in quantifiable forms and applying statistical, mathematical, or computational techniques for analysis (Groves et al., 2009). Typically, quantitative research requires larger sample sizes to ensure statistical reliability and generalizability of findings to the entire population (Nardi, 2018). It focuses on collecting numerical information that can be analysed to conclude, make predictions, and establish relationships (Creswell, 2014). Data collection in quantitative research follows a structured approach, often involving surveys, questionnaires, experiments, or other methods with predefined variables (Nardi, 2018).

The quantitative phase (phase two of the study) describes the socio-demographic features of the target population. This phase also provides inferences of the relationship between individuals' predisposing, enabling, and need factors and their healthcare utilisation. The main strength of using a quantitative survey in healthcare research is that it can produce factual and reliable outcome data (Nardi, 2018). Rather than focusing on individuals with specific conditions or repeated observations of the same variables over short or long periods, this study aims to develop a cross-sectional survey to collect and analyse data from a target population at a specific time (Allen, 2017; Groves et al., 2009). While they have limitations in establishing causation, cross-sectional surveys provide valuable insights for understanding the current situation within a given population (Creswell, 2014; Groves et al., 2009; Hall, 2008). The observed outcomes can provide objective results generalisable to larger populations (Nardi, 2018; Navarrete, 2009). In this study, the findings of the pilot survey inform the recommendations for the design of a robust, nationally representative survey.

3.6.2 Target Population and Sample

Same as phase one, the target population of phase two of the study consisted of recently arrived Chinese late-life migrants who resided in Aotearoa NZ during the phase two study period (2021-2022). Although the exact number of recently arrived Chinese late-life migrants in Aotearoa NZ was unavailable, data from Stats NZ and INZ can help me determine the expected sample size. According to the findings from Stats NZ (2018), there were 3843 recently arrived (arrived in Aotearoa NZ ≤ 10 years ago) Chinese immigrants (who were born in the People's Republic of China, Hong Kong, or Taiwan) were aged 65 and over in Aotearoa NZ in 2018. Generally, around 10% of late-life adults may contact healthcare services when they live in Aotearoa NZ (INZ, 2019; MOH, 2016b). As a result, approximately 300 participants were expected originally as the maximum sample for the survey according to a general rule (i.e., the maximal number to achieve a precision level +/- 10% for a binary outcome of 50%). It was aimed to reach out to all the eligible participants. However, phase two of the study finally got 63 completed responds. Considering the piloting feature of the study (first-time development of the instrument in the study population), 68 participants were accepted, also due to the influencing impact of COVID-19.

Following the exploratory sequential mixed-methods framework, phase two of the study adapted as new issues/insights emerged in phase one (Creswell, 2014). Remarkably, the issues and problems that this study met in recruiting interview participants in phase one became the guideline for developing the sampling and recruitment method for phase two of the study. The participant recruitment process of phase one of the study indicated that the inclusion criteria for the interview may increase unnecessarily restricted participation for phase two (survey), especially during the ongoing COVID-19 pandemic. Therefore, the criteria "currently holding permanent residency or NZ citizenship" has been removed from the inclusion criteria for phase two of the study. Instead, "Chinese late-life migrants" who "currently hold an eligible visa, including visiting visa, working visa, permanent residency visa, or NZ citizenship," are all eligible to participate in phase two. Meanwhile, the criteria "reside within the Auckland region" has been expanded to "reside in Aotearoa NZ." The amended anonymity online survey inclusion criteria increased the study sample variance for phase two.

3.6.3 Network sampling and participant recruitment

Network sampling is introduced to target hard-to-reach populations (Lee, 2011), such as in this study - recently arrived Chinese late-life migrants in Aotearoa NZ. Due to limited information on the target population's size and magnitude, especially during the COVID-19 pandemic, phase two of the study is a network sampling approach to recruitment drawn from social and organisational networks (i.e., the organisations for migrants, the organisations for late-life adults, and the local Chinese community networks) and media networks (i.e., traditional media and social media). Specifically, the recruitment advertisements and invitation messages were sent out through social networks, such as TANI, Chinese New Settlers Services Trust (CNSST), NZ Chinese Association (NZCA), Asian Family Services, Age Concern New Zealand, local Chinese communities (i.e., North Shore Chinese Community network, Onehunga Chinese Community network, and Epsom Chinese Community network), and other social groups (i.e., Counties Manukau District Health Boards (CMDHB) Asian health advisory network). Meanwhile, recruitment advertisements were also placed in local community centres and libraries and posted on multiple social media (including WeChat, Facebook, and SkyKiwi (digital newspaper)).

The initial contact with the potential participants was made on the Internet or via social media (WeChat). The internet link for the open-access online survey was available in the recruitment advertisement and invitation message, which were sent out by email, WeChat message, Facebook message, and poster. The researcher's contact details were also available in the recruitment advertisement and invitation message. Thus, people interested in participating in the study can contact the researcher of this study for more detailed information about the survey. The participant information sheet for survey participants was attached at the beginning of the online questionnaire (see Appendix C1, C2), which clearly outlines the research purpose and participants' rights. All potential survey participants had a chance to read through the information sheet before starting the pilot survey.

3.6.4 Data Collection

The quantitative data was collected through the open-access (anonymous) online survey, after ethics approval from AUTEC on 07 December 2021 (reference number 20/234, see Appendix A2). The survey link was opened to all eligible potential participants between 07 December 2021 and 31 May 2022. This pilot survey was an did not require signed consent from participants. The participant's proceeding to the survey and completing it constituted consent.

Using the online survey method can help to promote ethical compliance, minimise research bias, and reduce the risk of COVID-19 transmission during the data collection. However, some potential eligible participants might need help accessing the online survey, consequently hindering their participation. The Chinese (simple and traditional) survey version was provided along with the English version to limit the language barrier. In order to minimise technology restrictions, the telephone survey method was also provided as a backup plan if the participants needed it. Three participants were surveyed via telephone, as they had technology issues and could not access the online survey. Overall, this study received 63 completed survey responses during the data collection period for phase two.

3.6.5 Data Analysis Method

Phase two of the study used the biostatistics method to analyse the survey data in phase two of the study. Biostatistics is the application of statistical techniques to scientific research in health-related fields (Van Belle et al., 2004). The quantitative phase (phase two) describes the socio-demographic features of the study population and provides inferences about the relationship between individuals' predisposing, enabling, and need factors and their healthcare utilisation. Data was gathered on the sample's socio-demographic compositions, their experiences of healthcare utilisation in Aotearoa NZ during non-pandemic and COVID-19 pandemic (including pattern of healthcare utilisation, quality of healthcare, barriers to accessing and utilising health services, and alternative healthcare-seeking behaviours), and their evaluation of the pilot survey. Therefore, a purposely designed data collection and analysis method for a niche study population can strengthen the study.

This study employed SPSS (version 28.0) and Excel (version 2410) software to analyse the collected data. The following sections explore the statistical analysis methods used to analyse survey data, including the weighting method, descriptive statistical analysis method, Categorical Principal Components Analysis (CATPCA), and binary logistic regression analysis.

3.6.5.1 Survey weighting

Weighting is a statistical technique in which calculations manipulate datasets to bring them more in line with the population being studied (Bethlehem, 2011). Specifically, every observed object in the survey was assigned an analysis weight adjustment factor used in the data analysis. The estimates of population characteristics were derived by processing weighted observations instead of the (unweighted) observations. The weight adjustment was to derive the estimate of population characteristics from the survey sample, correcting for the discrepancies of feature variable distributions between the sample and population, such as demographics. The discrepancies could occur due to non-respondents, self-selection bias of participants, and other issues in data collection. One of the typical weight adjustment methods is post-stratification, a method used to balance a sample compared to the population profile distribution after the sample has been selected (Yang, 2011; Scheuren, 2011).

The critical difference between the initial sample composition and weighting is that weights are applied after data is collected, which allows researchers to correct issues that occurred during data collection (Bethlehem, 2011). For this reason, post-stratification weighting, which takes place after the sample has been selected, was used instead of pre-stratification, which was used to balance a sample before data was collected (Royal , 2019; Scheuren, 2011).

Determine weighting variables

Researchers applying analysis weights are often weighted on demographic characteristics, such as age, gender, ethnicity, and education (Mercer et al., 2018). Thus, weighting can also account for the differences between those who partake or do not partake in research studies (Brick, 2013), referred to as non-respondent adjustment. Moreover, weights can also minimise any effects the survey design or data collection may have on the sample makeup and data (Bethlehem, 2011; Scheuren, 2011).

Due to the time and budget constraints, this pilot survey finally received 63 completed responses. According to the findings from Statistics NZ census (2018), the population who fit the survey criteria (Chinese migrants aged 65 years old and over and arrived in Aotearoa NZ less than ten years ago from the survey date) was 3858 in 2018. This present about 1.6% of the eligible Chinese late-life migrants participated in this pilot survey. Although 63 respondents are acceptable for a pilot survey, the low response rate could cause a bias in population characteristics estimation (Brick, 2013). Consequently, wrong conclusions may be drawn from the survey results. To mitigate the effects of any sample imbalances, phase two of the study used weighting adjustment when analysing the sample data.

As standard weighting variables, age and gender variables are more commonly used in health research areas (Mercer et al., 2018). This study adopted gender and age group as the weighting variable to weight the original data to minimise sample imbalance. This study did not use other weighing variables (i.e., ethnicity, immigration status, education level) due to the study's design and the need for sources from the recent NZ census. First, as the targeted population for this study was people who identified themselves as "Chinese," ethnicity is not a valid weighting variable for this survey. Second, immigration status is another critical

demographic factor. However, it was hard to calculate immigration status weighting variables in this study. Because 11 out of 63 survey participants hold visit visas (see Chapter Five), the NZ census only provides the statistics for migrants with citizenship and PR. A similar picture and reason can be found for the education level.

Weights formulas

This study used gender, age groups, and demographic variables, with sufficient precision in both the sample and NZ recent census (2018), to derive the analysis weights for the survey data. In order to match the sample data to the desired population proportions of gender and age, this study needs to calculate how much weight needs to be applied to each gender and age group in the sample. The weight for the data was calculated by dividing the population proportion of the specific subpopulation group by the sample proportion of the same subpopulation groups. The data weight formulas employed in this study are presented below:

Weight (w1) (for study subpopulation - male and aged 65-74) = percentage of male aged between 65 and 74 in census / percentage of male aged between 65 and 74 in survey

(1)

Weight (w2) (for study subpopulation - female and aged 65-74) = percentage of female aged between 65 and 74 in census / percentage of female aged between 65 and 74 in survey

(2)

Weight (w3) (for study subpopulation – male and aged 75-84) = percentage of male aged between 75 and 84 in census / percentage of male aged between 75 and 84 in survey

(3)

Weight (w4) (for study subpopulation – female and aged 75-84) = percentage of female aged between 75 and 84 in census / percentage of female aged between 75 and 84 in survey

(4)

Weight (w5) (for study subpopulation – male and aged 85 and over) = percentage of male aged 85 and over in census / percentage of male aged 85 and over in survey

(5)

Weight (w6) (for study subpopulation - female and aged 85 and over) = percentage of female aged 85 and over in census / percentage of female aged 85 and over in survey

(6)

By using the analysis weights (w1 – w6), this study can gain the weighted proportion or average (mean) estimate of the population of the population characteristics from the sample data. the equation shows below (Scheuren,2011; Smith, 1988).

Weighted proportion of the sample characteristics data (e.g., proportion of study population has been to GP) = $(\sum_{l=1}^{l=6} w(l) \times \hat{p}_l)/(\sum_{l=1}^{l=6} w(l))$

(7)

Where i represent the participant id of n participants, l represents one of the subgroups defined above. For example, when $l = 1$, it is the male and age between 65 and 74 group, $\hat{p}_l$ represents the percentage of the binary dichotomized response (1, or 0) of the participant in group l.

Weighted mean of the sample characteristics (e.g., waiting time of seeing a GP)

= $(\sum_{li=1}^{l=6}(w(l) \times \bar{t}_l))/(\sum_{li=1}^{l=6} w(l))$

(8)

Where $\bar{t}_{,l}$ represents the mean of the continuous response (e.g., waiting time) of the participants in group l. Now, when the weighted sample is compared to the population, the proportions of respondents from each gender and age group match.

Calculation of weighting variable

Around 3858 Chinese late-life migrants are eligible for the survey, of which 82.81% were aged between 65 and 74, 15.71% were aged between 75 and 84, and 1.48% were aged 85 and over (Statistic NZ, 2018). Panel A of Table 3-2 shows 1683 males and 1512 females aged between 65 and 74. Namely, the proportion of males aged 65-74 is 43.6% of the population, while the proportion of females in this age group is 39.19%. This study also found that 315 males (8.2%) and 291 females (7.5%) are aged between 75 and 84. For the age group 85 and over, 21 males (0.5%) and 36 females (0.9%). In the meantime, the survey data reports that eight male

respondents (12.0%) and 31 female respondents (49.2%) were between 65 and 74 years old (see Panel B of Table 3-2). Among survey respondents who are 75 to 84 years old, 12 are male (19.1%), and six are female (9.5%). Moreover, one male respondent (1.6%) and five female respondents (7.9%) are 85 years old and over.

Table 3-2: *Recently Arrived (< 10 year) Chinese Late-life (≥ 65) Migrants in Aotearoa NZ*

Panel A: 2018 Census Data

Age Group	*65-75*		*75-84*		*85 and over*	
Gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Population	1683	1512	315	291	21	36
Population proportions	**43.6%**	**39.2%**	**8.2%**	**7.5%**	**0.5%**	**0.9%**

Panel B: Survey Data

Age Group	65-75		75-84		85 and over	
Gender	Male	Female	Male	Female	Male	Female
Sample	8	31	12	6	1	3
Sample proportions	**12.7%**	**49.2%**	**19.1%**	**9.5%**	**1.6%**	**7.9%**

Table 3-3: *Weighting Variables*

Age group	*65-75*		*75-84*		*85 and over*	
Gender	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
Data Weights	w1	w2	w3	w4	w5	w6
w = % in census / % in survey	**3.4**	**0.8**	**0.4**	**0.8**	**0.3**	**0.1**

By applying these census and survey data to the weight formulas described above, this study finally got the gender and age group weighting variables. As Table 3-3 presents, the derived poststratification weight for correcting the sampling bias for males aged 65-74 (w1) is 3.4, the weight variable for female aged 65-74 (w2) is 0.8, the weight variable for male aged 75-84 (w3) is 0.4, the weight variable for female aged 75-84 (w4) is 0.8, the weight variable for male aged 85 and over (w5) is 0.3, and the weight variable for female aged 85 and over (w6) is 0.1. The sample data potentially overrepresented females aged 65-75, males aged between 15-84 and females 85 years and over; the sample underrepresented males aged 65-75.

3.6.5.2 Standard error (SE) and missing data

In statistics, data from samples is used to understand larger populations. However, even with probability samples, some sampling errors may remain. Standard Error of Mean (SEM) is one of the most important statistics measuring the precision of a sample distribution representing a population (Altman & Bland, 2005; Little, 2011). By calculating SEM, the variabilities of the population characteristics can be estimated. Generally, a high SEM shows that sample means are widely spread around the population mean (Little, 2011). In contrast, a low SEM shows that sample means are closely distributed around the population mean (Little, 2011).

Missing data can sometimes bias results because a more significant proportion of missing data indicates a study has an unbalanced or unrepresentative sample (Bennett, 2001; Janssen et al., 2010; Little & Rubin, 2019). Bennett (2001) argued that estimates are likely biased when missing 10% or more data. Other literature suggested that less than 5% of the missing rate is a lower cut-off point for medical research (Janssen et al., 2010). Little and Rubin (2019) also recommended that if the missing observations are less than 5%, it has no significant ramifications. The proportion of missing data for each question is calculated and included in Chapter 5. The imputation method for missing data was used when appropriate.

3.6.5.3 Categorical Principal Components Analysis (CATPCA)

In phase two of the study, Categorical Principal Components Analysis (CATPCA) method was used to test the construct validity and internal consistency of the questions in the pilot survey and provide recommendations for a survey instrument that could be administrated in an extensive survey (i.e., a national survey). In this study, the survey data distribution is not Gaussian but ordinal and categorical. Thus, CATPAC method is the only choice.

In biostatistics, standard principal component analysis (PCA) is a valuable tool used to "reduce" the more significant data variables into correlated "components" that provide a conceptual and statistical understanding of the construct of interest (Davis, 2002; Dunteman, 1989; Harper, 1999; Linting et al., 2007). It is commonly applied when extreme correlation can be found in numerous variables in the datasets (Dunteman, 1989; Linting

et al., 2007). By transforming numerical, nominal, ordinal, or categorical variables into quantitative variables, this analysis method can decrease a more significant number of complicated correlation variables into a smaller number of uncorrelated components while maintaining the information in the original data (Dunteman, 1989; Meulman & Heiser, 2012).

Categorical principal components analysis is a type of PCA procedure used to analyse categorical data (Linting & Van der Kooij, 2012). Like the standard PCA, CATPCA is a dimension reduction method used to subside a more extensive dataset containing highly correlated variables into a smaller number of uncorrelated components (Linting & van der Kooij, 2012). On the other hand, unlike the standard PCA, which assumes linear association among numeric variables (Muelman & Heiser, 2012), CATPCA aims to catch probable non-linear relationships amongst multivariate nominal data (Gifi, 1990; Linting et al., 2007; Linting & van der Kooij, 2012). Therefore, CATPCA is an appropriate dimension reduction method for categorical variables, which may nonlinearly relate to each other.

Moreover, the optimal scaling method is used in CATPCA to transform and quantify category variables (with nominal and ordinal measurement levels) into quantified (numeric) values and simultaneously maximised the variance interpretation amongst the quantified variables (Gifi, 1990; Linting & van der Kooij, 2012). By summarising the correlation between categories in a multi-dimensional space, CATPCA can improve the data's interpretation ability without losing the information found in the original variables (Linting et al., 2007; Linting & van der Kooij, 2012).

Optimal scaling

Optimal scaling is a form of optimal quantification (Gifi, 1990; International Business Machines (IBM), n.d.). It is a general method to process categorical data (Gifi, 1990; Hastie et al., 1994; Jacoby, 2011; Meulman, 1998). The procedure of optimal scaling is turning qualitative variables into quantitative variables using an appropriate quantification level (IBM, n.d.; Meulman, 1998; Linting & Van der Kooij, 2012). By using the optimal scaling method in CATPCA, researchers can specify the measurement level in the optimal scaled variables and avoid problems when analysing categorical datasets with too few observations, too many

variables, or too many values per variable (IBM, n.d.; Hastie et al., 1994; Meulman, 1998). As CATPCA is appropriate for nonlinear correlated variables of mixed measurement levels (numerical, ordinal, and nominal), it is suitable for this study, which contains nominal and ordinal variables (IBM, n.d.). Using optimal scaling in CATPCA, categorical variables are represented by a set of category points, which would be on a straight line through the origin (IBM, n.d.; Muelman & Heiser, 2012).

Test of validity

This study modified an existing validated questionnaire (2017/18 NZ Health Survey) based on the qualitative results from phase one. It also developed a pilot survey for health service utilisation and patient experiences. This pilot aims to gather quantitative data on healthcare utilisation for recently arrived Chinese late-life migrants during the non-pandemic and COVID-19 pandemics. By testing the measure with a small sample, this study can assess the feasibility and validity of the survey instrument it modified and developed.

In this study, all survey questions/items in the pilot survey were developed to answer the research question(s) for phase two. Hence, the individual question/item should correlate in some way when measuring for one construct related to answering the research question. By diminishing survey data into content areas that explain as much of the variance in the data as possible, CATPCA could capture the inter-correlations between different sets of survey items/variables (Davis, 2002; Harper, 1999). Therefore, the CATPCA method was applied to assess the pilot survey questions' construct validity and internal consistency. This study conducted CATPCA using SPSS software.

Construct validity is one of the most critical measurement validities that is used to verify how well a survey instrument is constructed in a way that can test what it is supposed to measure (Fink, 2010). A valid construct means questions/items in a questionnaire/test should be complete, compatible, and collectively form a whole (Jolliffe, 2002). Using survey instruments with good construct validity can help researchers avoid biases and mistakes (like omitted variables or information bias) during data collection and analysis processes (Fink, 2010).

This study used eigenvalue to check the construct validity among the items/variables. In CATPCA, the eigenvalues are acquired from the correlation matrix between the quantified variables (Jolliffe, 2002; Linting & van der Kooij, 2012). It can also be used to determine the number of variances in each item/variable that can be explained by each principal component (Denton et al., 2022; Linting et al., 2007). Namely, the eigenvalue can represent how principal components (dimensions) summarise and interpret the original variables (Linting & van der Kooij, 2012).

Moreover, Spearman's correlation coefficient (r), another essential statistic yielded in CATPCA for the transformed variables, can assess construct validity (Linting & van der Kooij, 2012). Spearman's r is a value between -1 and 1 commonly used to determine the strength and direction of the existing linear relationship between two variables and measure their association with each other (Edwards, 1976; Turney, 2022). A positive r indicates a positive relationship between two variables (Edwards, 1976; Turney, 2022). Namely, one variable increases as the other increases. A negative r indicates a negative relationship between two variables (Edwards, 1976; Turney, 2022). In other words, one variable decreases as the other increases. In statistics, the absolute value of r ($|r|$) < 0.3 means negligible correlation; $0.3 \leq |r| < 0.5$ represents a weak correlation; $0.5 \leq |r| < 0.7$ indicates moderate correlation; $0.7 \leq |r| < 0.9$ reports a strong correlation; $0.9 \leq |r| < 1$ shows a robust correlation; and $|r| = 1$ expresses a perfect correlation (Edwards, 1976).

Additionally, internal consistency reliability is a typical measurement that tests how well a survey measures what it aims to measure (Fink, 2010; Streiner, 2003). It can assess the correlations among the items/questions on the same questionnaire/test (Streiner, 2003). Internal consistency can also be used to evaluate whether different items/questions that measure the same construct generate similar scores (peters, 2014). In CATPCA, Cronbach's alpha (α) could be used to examine the internal consistency among a set of items/variables on the same test (Knapp, 1991; Peters, 2014; Streiner, 2003). The larger the value of α, the more vital internal consistency the component has (Lance et al., 2006; Streiner, 2003). Generally, α greater than 0.6 indicates good internal consistency (Lance et al., 2006).

3.6.5.4 Binary logistic regression

In phase two of the study, binary logistic regression was employed to model the binary outcomes (healthcare access and utilisation (independent variable) among participants) of predisposing, enabling, and need-related factors (dependent variables). Due to the small sample in each original category, the outcomes were grouped into two level. therefore, binary logistic regression is the best model for this purpose.

As an extension of linear regression, logistic regression is one of the most essential regression models used in relationship prediction. It is commonly used to anticipate the relationship between a set of independent variables and a dichotomous or binary dependent variable (Harrell, 2015; Wright, 1995). In statistics, specifically regression analysis, binary logistic regression does not only estimate how significant a set of independent variables predicts the dependent variable as well as determine the "goodness-of-fit" of the regression model but also helps to determine the correct proportion of predictions that are made from the model (Harrell, 2015; Maroof, 2012; Wright, 1995).

The binary logistic regression can be introduced to this study to determine whether the utilisation of a particular healthcare service can be predicted based on participants' predisposing and enabling factors. In this study, the dependent variable for the logistic regression model is the utilisation of a particular healthcare service, while the independent variable is individuals' predisposing or enabling factors. There are three main reasons that binary logistic regression can be applied to analyse the survey data in this study. First, the dependent variable is measured on a binary/dichotomous scale (Maroof, 2012; Wright, 1995). This study used "utilisation of a particular healthcare service" as the dependent variable, which is a "Yes" or "No" type variable. Survey respondents who reported "Don't know" or "Refuse to answer" the utilisation of certain healthcare services were assumed to have not used such healthcare services. These answers were categorised into the group of "No." Second, the independent variables can be categorical or continuous (Maroof, 2012; Wright, 1995). Based on the collected survey data, the independent variables the regression model used were individuals' predisposing factors (including age group, gender, civil status, immigration status, year group lived in Aotearoa NZ, accommodation status in Aotearoa NZ, and highest qualification) and enabling factors (including incomes and health/medical insurances). They are all nominal variables (categorical). For example, "gender" can be

categorised into two groups (male and female); "accommodation status in Aotearoa NZ" can be classified into three groups (living alone, living with a partner only, and living with children and/or grandchildren and/or partner); "health/medical insurance" can be assigned into two groups (yes, no). Third, to gain a valid result, the dependent variable should be mutually exclusive (Wright, 1995). As described above, the dependent variable ("utilisation for a particular healthcare service) is a "Yes" or "No" variable. Namely, respondents cannot or do not utilise the same healthcare service simultaneously.

Regression Model

The simple logistic regression model used to analyse the dependent variables on the independent variables is described in this section. Following the model mentioned by Harrell (2015), the logistic regression model that used in this study is:

$$\log\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_i(X_i) \qquad (9)$$

Where X represents independent variables, which comprise individuals' predisposing factors (including age group, gender, civil status, immigration status, year-group lived in Aotearoa NZ, accommodation status in Aotearoa NZ, and highest qualification) and enabling factors (including incomes and health/medical insurances), is the probability of the dependent variable - "utilisation of a particular healthcare service." Since the dependent variable is binary ("Yes" or "No"), there are two conditions established: Probability of "Yes" (p) and Probability of "No" (1-p), where $0 \leq p \leq 1$.

This study used simple logistic regression model. Namely, it analysed the relationship between one independent variable and one dependent variable. For instant, p_i is the probability of utilising public hospital service, and X_i is gender. Therefore, the parameter β_0 gives the log odds of a male utilising public hospital service (when $X_i = 0$) and β_i represents how these odds differ for females (when $X_i = 1$).

Tests of significance

Nagelkerke R^2 is a vital statistic for examining the explanatory power of the predictors in the logistic regression model. According to the definition from Harrell (2015) and Wright (1995), it can determine how well the data

fit the regression model (the "goodness-of-fit"). The Chi-Square Goodness-of-Fit test (Omnibus test) is another essential statistical test used to assess the significance of the overall model (Harrell, 2015; Maroof, 2012; Wright, 1995). Furthermore, this study also examined the contribution of each independent variable in the model (Harrell, 2015; Wright, 1995). The Wald test was used to determine the significance of each independent variable in association with the dependent variable. This study used a 95% confidence level of the estimation and 5% type I error to set the significance threshold. For example, suppose the P value of Walt is less than 5% of the significant level. In that case, this study can conclude that the independent variable is significant in explaining the dependent variable at a 95% confidence level.

3.7 Triangulation

Triangulation is a robust method employed to enhance the credibility and validity of research findings (Ashour, 2018). In social and health sciences, triangulation involves using multiple methods, data sources, researchers, or theories to confirm findings (Ashour, 2018; Williamson, 2005). By integrating various theories, methods, or observers in a research study, triangulation helps address and mitigate biases arising from using a single method or observer. This approach facilitates a comprehensive exploration and explanation of complex human behaviours, providing a balanced explanation to readers (Ashour, 2018; Williamson, 2005).

This mixed-methods study employed triangulation to minimise potential response bias and ensure a richer, more accurate understanding of the research objectives (Ashour, 2018). Two types of triangulations were employed in this study: methodological triangulation and data triangulation.

Following an exploratory sequential mixed-methods approach, this study aimed to use the power of both qualitative and quantitative research to provide a comprehensive and holistic understanding of complex research objectives (Creswell & Clark, 2017). As previously discussed in Survey Development (section 3.6.2), to better reflect the healthcare access and utilisation for the recently arrived Chinese late-life migrants (target population) during the study period (non-pandemic and the COVID-19 pandemic circumstances), the thematic findings of phase one were used to modify the existing MOH survey questions. As a result, the questionnaire used in phase two of the study is more realistic and culturally sensitive to recently arrived Chinese late-life

migrants. Moreover, using both qualitative and quantitative methods allows for triangulation, where findings from one method can be cross-verified with those from the other (Creswell, 2014; Creswell & Clark, 2017). As discussed in section 3.5.8, methodological triangulation can enhance the validity and credibility of the study findings (Hastings, 2012; Venkatesh et al., 2013) and mitigate any research biases (Ashour, 2018).

Data triangulation enriches research by offering diverse datasets that elucidate different facets of a phenomenon of interest (Ashour, 2018; Williamson, 2005). The qualitative phase laid the foundation by unveiling the intricate web of factors influencing healthcare access. In contrast, the quantitative phase provided empirical evidence on the extent and impact of these factors. By integrating qualitative (phase one) and quantitative (phase two) findings, the study could identify and address gaps in the existing knowledge, and develop effective interventions.

3.8 Summary

This chapter has presented an overview of the choice of methodological framework, research methods, and techniques for selecting participants, collecting, and analysing data to the rigour and ethical considerations of the study. Theoretical and philosophical implications, as well as justifications for the choices and decisions involved, were discussed in this chapter. In particular, the uniqueness of this study and population recruited, where a combination of qualitative and quantitative research methods was given special attention, shows the effort made to establish the trustworthiness of this methodological approach.

Overall, a mixed-method methodology provides a suitable design that fits the aim and purpose of the study. The qualitative and quantitative aspects of the methodology accommodate the need to explore the phenomena within a healthcare scope along with the advantages of considering the cultural, value, and behavioural attributes of the recently arrived Chinese late-life migrant population. It helps to accurately capture real-life experiences and unique personal opinions from as many perspectives as possible to address the research objectives and present rich findings.

CHAPTER 4: PHASE ONE FINDINGS

4.1 Introduction

The aim of phase one of the study was to explore the predisposing, enabling, and need-related factors that affect recently arrived Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ in the face of non-pandemic and the COVID-19 pandemic environments. To collect subjective knowledge about participants' experiences, phase one of the study conducted 12 semi-structured interviews with selected eligible participants. These interviews provided an in-depth and personal perspective towards recently arrived Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ. The collected qualitative data was then analysed using thematic analysis methods. Consequently, the findings are presented in Chapter Four.

This chapter first analyses the participant's socio-demographic background information. This section's general approach to such data analysis involved counting occurrences and frequencies of answers and summarising and documenting opinions. The numerical interpretations undertaken in this chapter are employed as a form of qualitative content analysis (Sandelowski, 2000) or as quasi-statistical analysis (Crabtree & Miller, 2023). They do not involve complex statistical data manipulation; they descriptively summarise common characteristics and patterns deduced from the data. The presentation and analyses of data are focused on accurately reflecting the participant's input for what they are, as well as some readily identifiable internal correlations. Findings are used in conjunction with interview analyses (phase one findings) and compared with survey analyses (phase two findings) to aid the discussion in Chapter Seven.

The chapter then presents the themes drawn from semi-structured interview transcripts. Four themes emerged from thematic data analysis: 1) "It is the Little Things that Matter the Most," 2) Fractured Patient-Practitioner Relationship, 3) Cultural Beliefs and Attitudes Towards Healthcare Access and Utilisation, and 4) Desire for Healthcare Information. Each theme highlights a factor that affects recently arrived Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ, in non-pandemic and the COVID-19 pandemic circumstances. These themes identified from participants' real-life experiences were not isolated but were systematically re-grouped from a set of interrelated and often re-appearing factors. This thematic analysis aims to summarise participants' everyday experiences, allow understanding of individual variations, and explain

their causes and how they may impact participants' healthcare access and utilisation. Furthermore, Andersen's Behavioural Model (Andersen et al., 2013) was adopted as a theoretical framework to identify the factors affecting healthcare access and utilisation. Therefore, these themes and sub-themes identified in phase one can be framed into three main factors: predisposing characteristics, enabling resources, and health needs factors.

To ensure privacy and confidentiality, pseudonyms have been used to identify participants. The source and location of the information from interview transcriptions follow the pseudonym in numerical format. The first number represents the specific interview. The second and subsequent numbers, separated by commas, indicate where specific passages are situated in the transcripts. For example, excerpts from the interview transcripts of Fred, who is the sixth interviewee, are presented as [Fred 6:5, 17].

4.2 Interview Participants' Socio-Demographic Information

Before analysing and interpreting the participants' experiences of healthcare access and utilisation, this chapter first provided participants' socio-demographic information, which includes age, gender, place of birth, the length of residence in Aotearoa NZ, immigration status, civil/marital status, accommodation status (living with adult children), employment status, health/medical insurance, education status, first language, and English language ability. The primary purpose of gathering such data is to provide a clear overview of the personal backgrounds of the interview participants. The descriptive analysis involved a summary of the distributions of the participants' characteristics and documenting opinions, and the mean/average for the continuous data (including age, and years lived in Aotearoa NZ). The numerical interpretation focuses on the original/unweighted results. The participants' socio-demographic information displayed in Table 4-1.

Table 4-1 shows that a total of 12 participants participated in phase one, five male and seven female. Overall, all the interviewees can participate in phase one of the study. As previously discussed in Chapter Three, participants were required to meet a set of criteria to be eligible for phase one of the study, which include an age limit, Chinese identification, immigration status, and length of residence in Aotearoa NZ. First, all the interviewees met the age criteria of the study, which is an age limit of 65 years of age and over. Table 4-1 reports the age distribution of the interviewees between the ages of 65 and 78 years. The average age of the

interview participants was 69.8 years old. Second, all the interview participants were born in the People's Republic of China (PRC), and their first language is Mandarin (see Table 4-1). The results indicated that all of them were Chinese and eligible to conduct the interview. Third, Table 4-1 discovers that all participants hold eligible visa to allow them to use healthcare services in Aotearoa NZ. Among them, 10 participants hold Permanent Resident Visa (PR), while two hold NZ citizenship. Additionally, the duration of residence since participants first arrived in Aotearoa NZ is between 3 and 10 years. The average length of residence in Aotearoa NZ is 7.3 years. It shows that all the participants arrived in Aotearoa NZ, less than ten years ago from the interview date.

Table 4-1 also reports other socio-demographic characteristics that may influence individuals' healthcare access and utilisation, such as civil/marital status, accommodation status (living with adult children), financial status, health/medical insurance status, education level, and language proficiency.

First, participants' civil/marital and accommodation status (whether living with adult children and/or partner) may be relevant to the family support they have gotten and then influence individuals' healthcare-seeking behaviours. Table 4-1 illustrates that eight participants were married, two were widowed, and one was divorced. Meantime, 11 out of 12 participants were living with their children, grandchildren, and/or partner. Only one participant is living alone. However, her son was living nearby.

Moreover, participants' financial and health/medical insurance status may impact their healthcare-seeking behaviours. Table 4-1 represents that all the participants had specific sources of income. At the same time, most of them held specific health/medical insurance (including eight hold Medicare and two hold private health insurance). Although two participants stated that they do not have any health/medical insurance, this study believe they are eligible for Medicare since they are PRs. All NZ residents, including citizens, PRs, holders of a two-year work visa, or quota refugees, are eligible for publicly funded healthcare/Medicare (INZ, n.d.). Namely, PRs can get free public hospital treatment and free or subsidised treatment from doctors.

Last, participants' education level (highest completed qualification) and language proficiency may also affect individuals' healthcare-seeking behaviours in Aotearoa NZ. Table 4-1 shows that three participants have completed tertiary education and hold a bachelor's degree. The remaining participants (n = 9) have completed secondary education in China. Among them, three graduated from a middle school (corresponding to year 7 to year 8 in Aotearoa NZ), and 6 participants graduated from a high school in China (corresponding to year 9 to year 13 in Aotearoa NZ). Although all participants' first language is Mandarin, four can speak English. Among them, three participants have fair English language proficiency, and one was good at it.

Table 4-1: *Interviewees' Socio-Demographic Information*

No.	Pseudonym	Gender	Age	Birth place	Immigration status	Length of residence in Aotearoa NZ	Civil/Marital status	Living with adult children	Employment status	Health insurance	Highest Completed Qualification	First language	Language proficiency (English)
1	Adam	Male	65	PRC [a]	PR [b]	3 years	Widowed	Live with daughter and granddaughters	Part time	Medicare insurance	Bachelor degree	Mandarin	Fair
2	Belle	Female	71	PRC	Citizen	10 years	Married	Live with husband. Daughter lives in China	Retired	Medicare insurance	Bachelor degree	Cantonese & Mandarin	Good
3	Carla	Female	71	PRC	PR	7 years	Married	Live with son, daughter-in-law, grandson, and granddaughter	Retired	None	Middle school certificate	Mandarin	Poor
4	Dawn	Female	68	PRC	PR	5 years	Married	Live along. Son lives in Auckland	Retired	Medicare insurance	High school	Mandarin	Poor
5	Elva	Female	69	PRC	PR	9 years	Married	Live with husband, daughter, son-in-law, and grandson	Retired	Private health insurance	High school	Mandarin	Poor
6	Fred	Male	65	PRC	PR	8 years	Divorced	Live with daughter, son-in-law, and granddaughter	Retired	Medicare insurance	High school	Mandarin	Fair
7	Grace	Female	65	PRC	PR	6 years	Married	Live with son & daughter-in-law	Retired	None	High School	Mandarin	Poor
8	Hank	Male	68	PRC	PR	8 years	Married	Live with wife, son, and daughter-in-law	Self-employed	Medicare insurance	High school	Mandarin	Poor
9	Ian	Male	72	PRC	Citizen	10 years	Married	Live with wife, son, and grandson	Retired	Medicare insurance	High school	Mandarin	Poor

10	Jack	Male	70	PRC	PR	9 years	Married	Live with daughter, son-in-law, and granddaughter	Retired	Private health insurance	Bachelor degree	Mandarin	Fair
11	Kate	Female	75	PRC	PR	7 years	Widowed	Live with daughter and granddaughter	Retired	Medicare insurance	Middle school certificate	Mandarin	Poor
12	Lily	Female	78	PRC	PR	6 years	Widowed	Live with daughter, son-in-law, and granddaughter	Retired	Medicare insurance	Middle school certificate	Mandarin	Poor
Average		-	69.7	-	-	7.3 years	-	-	-	-	-	-	-

a. PRC represents People's Republic of China.
b. PR represents Permanent Resident Visa.

4.3 An Overview of Themes

Phase one developed four themes based on common characteristics identified from participants' interview transcripts. Table 4-2 below provides an overview of these themes.

Theme One - "It is the Little Things that Matter the Most"- represented the interactions between recently arrived Chinese late-life migrants and the NZ healthcare system. It exposed four community enabling factors (sub-themes), including Time Matters to Healthcare Access and Utilisation, Location of the Healthcare Services, Availability of Chinese-speaking Healthcare Practitioners, and Difficulty in Getting Translation.

Theme Two – Fractured Patient-Practitioner Relationship - explored the interactions between patients and healthcare practitioners. This theme contains three sub-themes: a) Ineffective Communication, b) Conflict in Health-Related Concepts, and c) Satisfaction and Security of the Healthcare Practitioners. All sub-themes were known as predisposing factors.

Theme Three - Cultural Beliefs and Attitudes Towards Healthcare Access and Utilisation - underlined how participants' cultural beliefs may affect their views towards healthcare access and utilisation. During the analysis of this theme, three predisposing factors (sub-themes) emerged, including "As the Old Saying Goes" (chang yan dao), "Don't Want to Be a Burden," and Attitudes towards Financial Consideration.

Theme Four – Desire for Healthcare Information - emphasises participants' lack of understanding of healthcare delivery in Aotearoa NZ. Three sub-theses (personal enabling factors) were developed, including need for Healthcare Information Sources from Publications and Media, Healthcare Information Sources from Social Networks, and Healthcare Information Sources from Healthcare Practitioners.

Table 4-2: *Overview of Themes, Sub-Themes and Codes*

Themes	Sub-themes	Codes
1) "It is the Little Things that Matter the Most"	a) Time Matters to Healthcare Access and Utilisation **(**community-enabling resource factors**)**	*i. Time Matters in Accessing and Utilisation Primary Healthcare Services* *ii. Time Matters in Accessing and Utilisation Secondary and Tertiary Healthcare Services*
	b) Location of the Healthcare Services **(**community-enabling resource factors**)**	
	c) Availability of Chinese-speaking Healthcare Practitioners **(**community-enabling resource factors**)**	
	d) Difficulty in Getting Translation **(**community-enabling resource factors**)**	
2) Fractured Patient-Practitioner Relationship	a) Inefficient Communication **(**predisposing characteristics**)**	
	b) Conflict in Health-Related Concepts **(**predisposing characteristics**)**	
	c) Satisfaction and Security with Healthcare Practitioners **(**predisposing characteristics**)**	*i. Trusting Patients-Practitioners Relationship* *ii. NZ Practitioners Respecting Their Chinese Late-Life Patients*
3) Cultural Beliefs and Attitudes towards Healthcare Access and Utilisation	a) "As the Old Saying Goes" (chang yan dao) **(**predisposing characteristics**)**	
	b) "Don't Want to Be a Burden" **(**predisposing characteristics**)**	
	c) Attitudes towards Financial Consideration **(**predisposing characteristics**)**	
4) Desire for Healthcare Information	a) Healthcare Information Sources from Publications and Media	
	b) Healthcare Information Sources from Social Networks	

(personal-enabling resource factors**)** c) Healthcare Information Sources from Healthcare Practitioners

4.4 Theme One: "It is the Little Things that Matter the Most"

Theme one ("It is the Little Things that Matter the Most") encapsulated the complexity of recently arrived Chinese late-life migrant participants in accessing and utilising healthcare services since their arrival in Aotearoa NZ. Many participants mentioned that their healthcare access and utilisation were mainly influenced by little things, such as the scheduled time for an appointment, the waiting time at the services, the location of the service, the availability of Chinese-speaking doctors/nurses at the clinic, and so on. Based on the thematical analysis of interview data, four sub-themes were evident within this theme: a) time matters to healthcare access and utilisation, b) location of the healthcare services, c) availability of Chinese-speaking healthcare practitioners, and d) difficulty in getting a translation. Following Andersen's behavioural model (Andersen et al., 2013), all these sub-themes can be seen as community-enabling factors that affect individuals' healthcare-seeking behaviours.

4.4.1 Time Matters to Healthcare Access and Utilisation

Although many interview participants noted that accessing and utilising healthcare services in Aotearoa NZ, especially primary healthcare, was less challenging than expected, they expressed disappointment with the prolonged waiting times they experienced. This lengthy waiting process emerged as a significant barrier to accessing and utilising all formal healthcare services in Aotearoa NZ (including primary, secondary, and tertiary healthcare) among recently arrived Chinese late-life migrants. There are two principal codes under this sub-theme: time matters in accessing and utilisation primary healthcare services, and time matters in accessing and utilisation secondary and tertiary healthcare services.

4.4.1.1 Time matters in accessing and utilisation primary healthcare services

Getting appointments with GP services frustrated many of the participants in accessing primary healthcare services in Aotearoa NZ, especially when most of them came from a country where public hospitals and appointments provide primary care are not necessary. Elva, Carla, and Grace shared similar stories in accessing and utilising general practitioners (GP) services in Aotearoa NZ:

> You need to make an appointment before seeing a doctor (GP). It's wasting time. If a health condition arises, you can't wait for days. I choose to go to the emergency department if I cannot get a timely appointment with a doctor (GP). [Elva 5:2]
>
> Getting an appointment (with a GP) at a suitable time is a big problem. It really takes time. Sometimes, I need to wait for a few days until an appointment is available. [Carla 3:3]
>
> Getting an appointment with my GP has always been challenging. He is always fully booked when I need to see him. Having a regular GP is not helpful for me. [Grace 7:5]

Some participants complained there was endless waiting time even when an appointment has been scheduled.

> I still have to wait, even I already booked with my GP. [Carla 3:3]
>
> Half an hour delay is just normal. I made an appointment at 10 o'clock. But by the time the doctor saw me, it was nearly 11. [Belle 2:7]
>
> Even if I did get an appointment, I was never seen on time. This can be inconvenient if I have a tight schedule and need to be elsewhere. [Grace 7:5]

Delays in accessing and utilising GP services seems common among Chinese late-life migrant participants. Many participants blamed the lack of appointment schedule and poor time management in clinics. However, other participants hold other opinions. Kate complained her GP tried to control the consulting session time. "*I was told that every patient has about 15 minutes for consultation*" [Kate 11:5]. Lily shared a similar story: "*the clinic are very busy. My GP only gave me about 15 minutes for each visit. And it didn't include any test*" [Lily 12:11].

Overall, these experiences suggest that accessing and utilising primary healthcare services through the GP system is time-consuming. Time Matters became a crucial barrier to accessing and using primary healthcare services, especially GP services, for many Chinese late-life participants.

4.4.1.2 Time matters in accessing and utilisation secondary and tertiary healthcare services

Similar to the disappointment in waiting in the primary healthcare system in Aotearoa NZ, many Chinese late-life participants showed their concerns about the endless waiting to access emergency, hospital, and specialist

care services. The endless waiting time in the secondary and tertiary healthcare systems increased their worries about delays in diagnosis and treatment.

As a vital component of the secondary and tertiary healthcare system in Aotearoa NZ, emergency care deals with severe and acute health conditions that may be life-threatening. The poor previous experience in accessing and utilising emergency departments (ED) negatively influences Chinese late-life migrant participants' opinions towards the Aotearoa NZ healthcare system, thereby hindering their healthcare access and service utilisation in future. Fred, for instance, described unpleasant experiences of using ED service on multiple occasions during his interview:

> I really don't like emergency care here (Aotearoa NZ). If you need to use it, you have to wait a very long time … I have used emergency care several times. I have to wait for hours. The longest time I have waited was over 6 hours. [Fred 6:1, 2]

More participants complained of poor experiences relating to a long waiting time to access and utilise specialist care services in Aotearoa NZ.

> The referral to a specialist has to go through a GP, and it takes a very long time [Carla 3:1]
>
> I have been trying for two weeks to get an appointment with a specialist, but no success… the queuing is too long. [Elva 5:9, 19]
>
> The public system (in Aotearoa NZ) is free, but the waiting is terrible. One of my friends needed to wait for over two years going through the public system … So, when I needed to do a knee replacement, I chose to go back to China to do surgery. [Adam 1:31]

These experience of waiting for hours in accessing secondary and tertiary healthcare services in Aotearoa NZ, as described by Chinese late-life migrant participants, underscores the emotional and psychological impact these delays have on them. However, the frustration is not merely about the delays themselves. What particularly bothered recently arrived Chinese late-life migrants was the stark contrast between their experiences with emergency care in China and those in Aotearoa NZ. As Adam commented, the differences in the efficiency and processes of the two healthcare systems are striking and unsettling for many migrants.

> Once my grandchild was in the emergency for fever. Her temperature was over 39 degrees. I was really worried about it. The nurse just took the temperature and asked us to wait ... We waited over 10 hours, from 9 o'clock that night to 7 o'clock in the next morning. Only one doctor came by once ... He told us to go back to our GP. It's unbelievable… It wouldn't happen in China. My grandchild could be given treatment immediately (in China). That's why it is called emergency care, isn't it? [Adam 1:24]

Adam's experience highlighted these concerns, noting how the procedural differences and longer waiting times in NZ are not just inconvenient but also contribute to a sense of uncertainty and anxiety. Migrants often feel that their urgent medical needs are not being addressed with the immediacy they were accustomed to in China. This can lead to dissatisfaction with the healthcare system and reluctance to utilise emergency services unless necessary, potentially risking their health further.

It was a challenge for Chinese late-life migrants to adapt to the new healthcare system in Aotearoa NZ. However, a few participants attempted to understand these differences between healthcare systems. Jack explained "*I was kept waiting (at ED) from 11 o'clock at night to 6 in the next morning. But I can understand… Everyone has to follow procedures. We live here, So, we need to follow the NZ way, and have to wait (when use healthcare services in Aotearoa NZ)*" [Jack 10:1, 2]. Jack's rational thinking has helped him understand emergency care providers must follow priority-based protocols to manage demand effectively while dealing with limited resources. However, Jack also pointed out a significant issue, which is the protocols and expected timeframes for treatment may not effectively communicated to patients, which may have been the main reason for causing disappointment and complaints.

Overall, for recently arrived Chinese late-life migrants, the time they spend on getting appointments and waiting for consultation/referral/treatment matters their experience of accessing healthcare and utilising primary, secondary, and tertiary services. The sudden shift to a healthcare system where Chinese late-life migrants might have to wait for hours can be bewildering and frustrating. Without clear communication from healthcare providers about why they are waiting and how long they might expect to wait, Chinese late-life patients can feel neglected and undervalued. This communication gap can exacerbate anxiety about using healthcare services in a new environment and increase dissatisfaction towards the healthcare system in Aotearoa, NZ.

4.4.2 Location of Healthcare Services

Many Chinese late-life interviewees emphasised that being close to healthcare services is the main factor (community enabling resource) affecting healthcare access and utilisation in Aotearoa NZ. Belle and Ian enrolled with their GP service because "*it is close to my home*" [Belle 2:4; Ian 9:8]. Ian also mentioned that it was easy to get the COVID-19 vaccination, as he could "*walk to the pharmacy to take the injection*" [Ian 9:18].

Sometimes, the location of the service, especially GP services, becomes the factor that takes higher priority for Chinese late-life participants. For instance, Adam registered with the GP near his workplace because "*it is difficult to take time off work … But the clinic is very close to my office. So, I can see my GP during my lunch break"* [Adam 1:10]. Moreover, Grace said, "*I moved several times and can always find Chinese GPs nearby. But, after moving to my current home, the nearest Chinese GP is about a half-hour drive away, which is too far… I had to start seeing a Kiwi doctor instead"* [Grace 7:3].

Overall, the available options to access and utilise local healthcare services, mainly primary healthcare, among recently arrived Chinese late-life migrants could be limited by the services' location. It is impractical for most Chinese late-life participants to visit a healthcare service outside their residence.

4.4.3 Availability of Chinese-Speaking Healthcare Practitioners

Access to Chinese-speaking healthcare professionals represents a vital aspect of community-enabling resources influencing the healthcare-seeking behaviour of recently arrived Chinese late-life migrants. A significant number of interview participants express a preference for healthcare practitioners who speak their language fluently:

> My GP can speak Chinese… which is very important. [Ian 9:7]
>
> The GP that I found is from Singapore … he speaks Chinese. [Belle 2: 4]
>
> Having a GP who speaks Chinese is fantastic! [Adam 1:13]
>
> Having Chinese-speaking doctors is particularly important for older people like myself. [Elva 5:8]
>
> The nurse who did the (COVID-19 vaccination) injection can speak Chinese… which is helpful. [Ian 9:18]

> Communication with doctors in my native language ensures a better understanding of medical conditions and treatment options. [Jack 10:5]

Even Grace, who considered service location a priority factor, still considers the availability of Chinese-speaking doctors an essential factor in choosing a GP service. She said, "I'm *still watching for the availability of Chinese-speaking doctors in the area*" [Grace 7:3].

Overall, participants' experiences showed that finding a Chinese-speaking GP was not challenging for most Chinese late-life migrants. The availability of doctors with Chinese backgrounds is essential in addressing potential language issues that may interrupt healthcare access and utilisation among the Chinese late-life migrant community.

4.4.4 Difficulty in Getting Translation

Different from primary healthcare, Chinese late-life participants may have different flexibility in seeking Chinese-speaking practitioners in secondary and tertiary healthcare services. However, many specialists and hospitals offer translation services to patients needing assistance. Both Fred and Hank mentioned the benefits of utilising translator services. Fred said: "*We were pleasantly surprised when the translator met with us early... half an hour before the appointment. All communications were facilitated through her (translator). It's an impressive experience*" [Fred 6:1.2, 8.1]. Hank had similar experiences. He said: "*Older people like me cannot speak English. So, the translation service is beneficial when visiting a medical specialist*" [Hank 8:30].

Although benefits were found in the translation services offered by such secondary/tertiary healthcare providers, some interviewees raised concerns:

> Communicating with English-speaking doctors is a challenge for me, even with the availability of translators. The translator I met didn't do his job well ... I don't know whether he accurately translated my words to the doctor. [Adam 1:13]

> I used the translator service once, but it didn't go well. My GP referred me to a specialist due to concerns about my scan result. Despite being fluent in English, I decided to book a translator because medical English differs from everyday language. However, I struggled to secure one due to high

> demand. When a translator finally arrived, I was worried about her competence. Her English wasn't even as good as mine. [Belle 2:17]

These participants highlighted the difficulty of getting translation as a barrier, interrupting their healthcare access and utilisation.

In practice, healthcare practitioners used solutions, like bilingual pamphlets/notes (both Chinese and English versions), to compensate for the shortage of translators. Kate and Ian shared their experience of using such support services when visiting COVID-related healthcare services:

> Before the injection (the COVID-19 vaccination), the nurse gave me a paper that lists the processes and precautions for safe immunisation. The notes are bilingual and have both Chinese and English versions on the same page. So, I can read the Chinese version. [Kate 11:8]
>
> They (healthcare practitioners at the COVID-19 isolation service) knew our English was poor. So, they prepared a bilingual pamphlet with Chinese and English information. I need to mark my answers, like "I feel well/bad" and "I have/have not a fever," on that pamphlet. [Ian 9:12]

Offering translation services to recently arrived Chinese late-life migrants could significantly enhance the accessibility and utilisation of local healthcare services, particularly secondary and tertiary healthcare. However, some participants highlighted that barrier, such as limited resources and lack of competence of translators, might pose a serious risk to their access and utilisation of hospital care, specialist care, and even COVID-related care services in Aotearoa NZ. Despite some healthcare practitioners resorted to alternative measures, it is not a long-term solution.

4.4.5 Summary of theme one

In summary, theme one - "It is the Little Things that Matter the Most" - was the starting point for analysing the concerns and challenges faced by recently arrived Chinese late-life migrants who participated in this study, engaging with a new healthcare system. The analysis revealed that most of these concerns/challenges stemmed from the stark contrasts in personal experiences between accessing healthcare systems in China and Aotearoa NZ, particularly regarding service delivery. Additionally, in response to these significant changes, Chinese late-life participants demonstrated adaptability by adjusting to the new healthcare systems and actively seeking solutions to address their needs. The next theme, Fractured Patient-Practitioner Relationships, explores how

communication, understanding, and cultural factors may impact the utilisation of healthcare services by recently arrived Chinese late-life migrants.

4.5 Theme Two: Fractured Patient-Practitioner Relationships

Patient-practitioner relationships are the process of recently arrived Chinese late-life migrants interacting with healthcare practitioners. From participants' perspectives, a positive and healthy patient-practitioner relationship must achieve effective personal communication and understanding while retaining the value and identity of Chinese ethnicity in accessing and utilising healthcare services. Therefore, Fractured Patient-Practitioner Relationships may hinder recently arrived Chinese late-life migrants from accessing and utilising healthcare services. In analysing this theme, three sub-themes developed: ineffective communication, conflict in health-related concepts, and satisfaction and security with healthcare practitioners. All sub-themes can be seen as predisposing factors that affect participants' healthcare-seeking behaviours (Andersen et al., 2013).

4.5.1 Ineffective Communication

It is important for Chinese seniors to communicate effectively with their healthcare providers. This involves sharing their health issues and worries with the healthcare providers, as well as receiving accurate advice and recommendations from them. In interviews, many individuals raised concerns about poor communication, stating that it significantly affected their access to healthcare in New Zealand, both in normal times and during the COVID-19 pandemic.

The language barrier often hinders effective healthcare communication between Chinese late-life patients and their healthcare practitioners and may impact the overall quality of care received by these patients. For instance, despite feeling confident in his English language skills, Adam discovered that he was able to convey his thoughts more easily to a Chinese-speaking doctor.

> Although my English is good, I find talking to a Chinese doctor easier ... When I had questions or problems related to my diabetes, it was straightforward to describe to the Chinese GP. But when my GP was on leave, and the Kiwi GP took over my regular visits, it became difficult to explain my feelings to him. [Adam 1:14, 15]

Adam's situation highlights the challenges that even fluent English speakers encounter when trying to describe their health conditions/issues using technical terminology.

It is worth noting that Adam also mentioned the significant influence of cultural factors on healthcare experiences. He illustrated this by sharing a personal anecdote about seeking medical advice for a sore throat from both a Chinese doctor and a Kiwi doctor.

> When I saw my GP (the Chinese doctor), she understood my concern and prescribed anti-inflammatory medicine. But in a similar situation, the Kiwi doctor kept telling me to drink water. So, sometimes, what I think or want is irrelevant to local health practitioners. There are too many cultural differences. [Adam 1:16]

Adam emphasised that language and cultural barriers led to differences in the way his concerns were understood and addressed by the two doctors. These disparities left Adam feeling frustrated and emphasized the importance of addressing cultural differences in healthcare communication.

In alignment with Adam's experience, other participants also expressed similar sentiments. For instance, Belle pointed out that Chinese doctors were more understanding and easier to communicate with, which contrasts with the difficulties she faced due to being a non-native speaker [Belle 2:4]. Carla shed light on the challenges posed by different ways of thinking between Europeans and Chinese, emphasizing the potential for communication barriers in healthcare settings [Carla 3:7]. These common experiences shed light on deeper concerns surrounding ineffective communication between Chinese late-life patients and their healthcare practitioners. The language and cultural barriers highlighted by the Chinese late-life participants have hindered accessible and transparent communication, leaving they struggling to effectively convey their needs and concerns to healthcare providers. This emphasizes the need for a more inclusive and culturally sensitive approach to healthcare communication to ensure that Chinese late-life patients feel understood and supported in their healthcare journeys.

Many Chinese late-life participants who found it difficult to communicate also believed that healthcare providers were not offering clear and accurate assessments, and were lacking cultural sensitivity and

professional demeanour. It was clear from the interviews that this issue had not been adequately addressed. For example, Adam expressed his frustration:

> I visited a specialist. The specialist provided me with a lot of advice, which was very detailed. But the problem is I don't know if they just don't want to tell me what it is or how bad it is ... Everything just seems to be 'okay'... It bothers me. The doctor might think it's a small problem, but I still have concerns. I just want to fully understand it (condition) ... But they don't help me with that. [Adam 1:6, 7.1, 8]

Similarly, Dawn expressed her dissatisfaction with the lack of communication in emergency care:

> That's the part I don't like it (emergency care in Aotearoa NZ) … They should tell us, instead of leaving us waiting without any indication of what will happen. When it happens... I could have gone home or elsewhere if I knew I would wait that long (4-5 hours). [Dawn 4:2, 5]

From participants' narratives, it appeared that some healthcare practitioners in Aotearoa NZ tended to make decisions on Ineffective Communication based on the seriousness or the priority of the patient's conditions. In minor cases, practitioners either did not have the time to fully communicate the process or chose not to completely disclose the circumstances to comfort their Chinese late-life patients from unnecessary worries.

In contrast, the participants had a much more positive view of the way healthcare practitioners communicated with Chinese late-life patients in more serious cases. Fred described how, before the surgery, the doctors provided thorough explanations about the patient's condition and the potential outcomes of the surgery, both positive and negative. "*Before the surgery, the doctors explained everything in detail. Everything was so clear and made us fully understand. We were deeply impressed*" [Fred 6:1.2]. He emphasised the excellence of the doctors' skills and attitudes, as well as their clear and effective communication.

These contrasting opinions suggest that Chinese late-life participants seek comprehensive explanations when utilising healthcare services and receiving treatment/consulting. Some Chinese late-life participants clearly communicated feelings of confusion, neglect, and a lack of information when healthcare providers chose to withhold or not fully explain information.

In addition to these situational communication challenges, issues related to procedural differences further highlight the lack of effective communication between healthcare providers and Chinese late-life patients. Elva

highlighted the differences in diagnostic procedures: "In China… doctors would suggest some possibilities from their experiences and give you a general assessment. However, here, if they (GP practices in Aotearoa NZ) do not have diagnostic equipment or facilities, they wouldn't give you any conclusions" [Elva 5:11, 12]. Fred also mentioned issues with referral and appointment cancellations: "*Your GP has referred you. But after a long wait, the hospital tells you it (the appointment) wasn't necessary ... I don't know how they come to that conclusion*" [Fred 6:10, 13].

Overall, participants' experiences and feelings highlight significant challenges in communication between recently arrived Chinese late-life migrants and healthcare practitioners in Aotearoa NZ. The interview data reveal that ineffective communication is a major predisposing factor influencing Chinese late-life migrants' healthcare access and utilisation. Participants experienced difficulties in both expressing their concerns and understanding the practitioners' assessments. Moreover, cultural differences further complicated these interactions, often leading to misunderstandings and feelings of neglect.

4.5.2 Conflict in Health-Related Concepts

The conversation on ineffective communication aimed to explore the potential obstacles that hinder clear understanding between Chinese late-life patients and their healthcare practitioners in Aotearoa NZ. Apart from procedural and cultural variances, these barriers might also encompass conflicting health-related views, as revealed in the interviews. This sub-theme (conflicts in health-related concepts), as another influencing contributor to the Fractured Patient-Practitioner Relationships, highlights differing perceptions of healthcare concepts like medical norms, treatment approaches, and other customs between Chinese late-life migrants and NZ healthcare providers.

As previously described in the previous sub-theme (ineffective communication), Adam was troubled by his specialist's lack of clear explanation. Another concern Adam had was he unable to comprehend the medical standards the specialist communicated to him.

> The specialist was telling me my blood sugar level was high by New Zealand standards but normal by Australian standards. I'm really confused ... I can 't understand what he means. In China, doctors give you a figure and a scale, like a range of acceptable values so that I can compare myself. [Adam 1:6, 8]

Adam confused about the way that NZ specialist represent the diagnosis. The healthcare professional may wish to provide emotional support without applying excessive pressure. However, Adam had become accustomed to receiving straightforward diagnoses from physicians in China, which facilitated a better understanding of his medical condition.

Another interviewee, Grace, experienced a similar confusion. She sought help from a cardiac specialist and felt confused by the differing diagnoses she received in different countries. "*The consultant cardiologist in Aotearoa NZ said there was nothing wrong, but when I returned to China, I was diagnosed with a slightly elevated level of premature beat and mild arrhythmia*" [Grace 7:11]. This experience made her wonder if medical standards vary between countries, and whether the standards in New Zealand are suitable for the Chinese population.

Overall, these discrepancies/conflicts in healthcare-related concepts, which often stem from differences in traditions, culture, and customs, can make it difficult for late-life Chinese patients to fully comprehend their conditions. Thereby may further affect their healthcare decision-making and Fractured Patient-Practitioner Relationships.

4.5.3 Satisfaction and Security with Healthcare Practitioners

The satisfaction and security with healthcare practitioners is a key predisposing factor that contributes to healthcare access and utilisation among recently arrived Chinese late-life migrants. As discussed in the previous sections, ineffective communication and conflicts in health-related concepts can reduce Chinese late-life participants' satisfaction and security with their healthcare practitioners. Thereby fracturing patient-practitioner relationship, and hindering Chinese late-life participants seeking help from health practitioners.

This sub-theme had two key components: the trusting patient-practitioner relationship and the respect NZ practitioners show towards their Chinese late-life patients. Satisfaction and security with healthcare practitioners are partly derived from effective communication and mutual understanding. Hence, some issues discussed in the previous sub-theme may be revisited.

4.5.3.1 Trusting patients-practitioners relationship

Ineffective communication is one vital factor that can increase Chinese late-life patients' feelings of disappointment and mistrust of their health practitioners, fracturing the patient-practitioner relationship. As previously discussed in section 4.5.1, Adam thought that the medical specialist's lack of explanations negatively affected his trust in them. He said, "*I don't think the doctor solved my problems. I understand what they are saying, but I feel I can't trust that*" [Adam 1:7].

Meanwhile, when Chinese late-life patients encounter inconsistencies or perceive a lack of expertise, their confidence in the healthcare system can be severely undermined. This leads to decreased satisfaction with healthcare practitioners and potentially poorer health outcomes. For instance, Hank described his "*loss of trust*" in the health system in Aotearoa NZ, after being diagnosed differently via the same test results [Hank 8:12]. Similarly, Dawn noted, "*We didn't know who to believe" when she received conflicting advice from different health professionals (i.e., surgeon, physio, nurse, and GP) after her knee surgery*" [Dawn 4:16]. This situation highlights how inconsistent information from healthcare practitioners can create confusion and erode trust, leaving Chinese late-life patients and their families uncertain about the best course of action.

Chinese late-life participants' previous overseas experiences and perceptions significantly shape their trust in local healthcare practitioners in Aotearoa NZ. For instance, Kate's belief that doctors in China are more experienced due to the higher volume of patients and cases they handle, influences her trust in her GP. She shared, "*I trust my GP, because he has been a doctor in China, and has seen more cases*" [Kate 11:17]. The participants also reported feeling that their health concerns were not always taken seriously by NZ practitioners, compared to their experiences in China. This perception contributes to a sense of being undervalued and misunderstood, further straining the patient-practitioner relationship. Adam's experience with his medical specialist is a poignant example, as he felt his specialist in NZ did not adequately address his concerns about diabetes, leading to frustration and confusion about his treatment plan [Adam 1:6, 8]. These perceptions, while not always accurate, reflect the challenges that recently arrived Chinese late-life migrants face in adapting to a new healthcare system and in trusting the expertise of local health practitioners.

However, not all patient-practitioner relationships were negative. Some participants reported positive interactions and expressed satisfaction with the care they received. For instance, although Adam expressed concerns over ineffective communication and the consequent impact on trusting patient-practitioner relationships, he also acknowledged that this mistrust can be situational. He stated, "*There are differences; I think they (NZ health practitioners) are trustworthy*" [Adam 1:27]. Adam's choice indicated trust can be built over time, even in the face of initial cultural and procedural differences. Furthermore, Jack and his family were satisfied with their healthcare practitioners. He stated, "*I'm satisfied overall... We've been through GP, specialist, and hospitalised care. I think they all good for me*"[Jack 10:7, 8]. Jack's experience reflected a positive perception of the NZ healthcare system, highlighting that effective communication and competent care can lead to patient satisfaction and trust. Another participant, Fred, appreciated the detailed explanations provided by healthcare practitioners before his surgery [Fred 6:1.2]. Fred's experience underscores the crucial role of effective communication, which ensures that patients feel informed and respected, emphasising the importance of your communication skills in building trust with patients.

Overall, trust in healthcare practitioners is multifaceted, influenced by conceptual misunderstandings, conflicting medical opinions, cultural differences, and previous healthcare experiences. These factors collectively contribute to the complexity of building and maintaining a trusting relationship between Chinese late-life migrants and their healthcare providers in Aotearoa NZ. The positive experiences of Chinese late-life migrant participants highlight that trusting patient-practitioner relationships can be achieved through effective communication, cultural sensitivity, and professional competence. When healthcare practitioners take the time to understand their patients' backgrounds and needs, it fosters a more supportive and trustworthy healthcare environment. This approach not only improves patient satisfaction but also enhances the overall effectiveness of healthcare delivery.

4.5.3.2 NZ practitioners respecting their Chinese late-life patients

New Zealand's healthcare system is well-organised and incorporates effective governance and patient rights protection. The regulations under the Health and Disability Commissioner Act 1994, ensure that patients are entitled to various rights, with respect being the foremost (Health and Disability Commissioner, 2023). Healthcare providers in Aotearoa NZ generally adhere to these principles with a high level of professionalism.

Despite concerns about Fractured Patient-Practitioner Relationships, there have been no explicit complaints about disrespect from Chinese late-life participants accessing and utilising local healthcare services. Chinese late-life participants have expressed satisfaction with the respectful treatment they receive from healthcare practitioners in Aotearoa NZ. For example, one participant, Lily, mentioned being treated with "*dignity and respect*" during a hospital stay, where doctors kindly sought consent to participate in a training doctor assessment program while emphasising their "*rights to raise concerns*" [Lily 12:21].

4.5.4 Summary of theme two

In summary, Theme Two has revealed potential factors that affect the relationships between recently arrived Chinese late-life migrants and their healthcare providers. The experiences of the Chinese late-life participants highlighted the barriers that lead to fractures in the relationships between Chinese late-life patients and their healthcare providers in Aotearoa NZ, primarily due to language and cultural differences. It's worth noting that while some participants encountered challenges, others acknowledged the respect and professionalism of New Zealand's healthcare providers. For example, Lily's experiences demonstrate that despite systemic and communication issues, the Aotearoa NZ healthcare system maintains the fundamental values of respect and dignity.

4.6 Theme Three: Cultural Beliefs and Attitudes Towards Healthcare Access and Utilisation

The previous themes, raised several issues, including language barriers, misunderstandings about healthcare standards and procedures, and differences between traditional and cultural values. These findings, crucial for understanding the healthcare challenges faced by recently arrived Chinese late-life migrants in Aotearoa NZ, helped uncover the complexities of accessing local healthcare services. However, the reasons for these issues, such as why these misunderstandings existed and what Chinese traditions and cultural values were, needed to be fully explained. This section aims to delve deeper into these issues, exploring how personal and cultural backgrounds influence Chinese late-life migrants' perception and use of healthcare services.

Cultural beliefs, deeply ingrained and primarily influenced by individuals' upbringing, shaped by their family and environment, play a significant role in shaping their mindset. Theme Three, a complex aspect of phase one of the study, focuses on understanding how participants' Chinese cultural beliefs influence their healthcare decision-making in Aotearoa NZ at a personal level. From the interview transcripts, three sub-themes emerged: "as the old saying goes" (chang yan dao), "don't want to be a burden," and attitudes towards financial consideration.

4.6.1 “As the Old Saying Goes” (chang yan dao)

The phrase "as the old saying goes" (chang yan dao) frequently came up during interviews, encapsulating the critical point of this sub-theme. Chinese late-life participants, who all shared strong ties to Chinese tradition and culture, highlighted how these old sayings significantly influence their healthcare-seeking behaviours and perspectives towards healthcare system in Aotearoa NZ. For example, Adam noted the cultural aversion to medication, stating, "*As the old saying goes, any medicine is itself a toxin*," a belief that encourages minimal use of pharmaceuticals [Adam 1:11]. Belle shared a similar sentiment, relying on Chinese herbal medicine for minor illnesses: "*For a mild flu, I just take some Chinese herbal medicine. There is no need to go to a doctor ... I believe Western medicine is more toxic*" [Belle 2:5, 11]. Moreover, another interviewee, Lily, pointed out the different interpretations of diseases in Chinese and Western medicine, expressing a preference for Traditional Chinese Medicine (TCM). She stated: "*From our (Chinese) traditional point of view, I prefer to use TCM. For example, COVID-19 can't really be treated by Western medicine, but the symptoms can be relieved with TCM*" [Lily 12:14].

The reliance on traditional Chinese medicine (TCM) and the associated cultural beliefs are evident in these examples. This reflects a strong cultural preference that persists even in a different healthcare setting. All Chinese elderly participants interviewed shared similar perspectives, indicating a significant level of acknowledgement and approval of personal interpretation and assessment of the best healthcare approaches for themselves, largely influenced by their traditional Chinese upbringing.

4.6.2 “Don’t Want to Be a Burden”

This sub-theme, "don't want to be a burden," illustrates how culturally driven mentalities can negatively impact Chinese late-life migrants' attitudes towards healthcare access and utilisation. Insights from participants' interviews reveal this issue.

Dawn expressed her hesitation to seek assistance from her son, stating, "*I don't want to depend on him (my son) ... If I have a minor ailment, I usually take some over-the-counter medicine. I wouldn't want to inconvenience my son by asking him to drive me to the doctor or hospital. He has his own family and work responsibilities*" [Dawn 4:10, 12]. Similarly, Fred stressed his unwillingness to burden his family and his focus on caring for his grandchildren: "*I don't want to be a burden on my family. I came to NZ to take care of my grandkids. It occupies most of my time … I try to avoid going to the doctor unless I feel unwell and my condition doesn't improve after 3 to 5 days*" [Fred 6:4, 25]. Jack also mentioned the language barrier and the reluctance to trouble their children unless necessary: "*We only inconvenience them (our children) for something important, like seeing a specialist, because we can't speak English*" [Jack 10:13].

These interviews highlight how the cultural mindset of avoiding burdening others can prevent Chinese late-life participants from seeking essential healthcare services. This cultural reluctance significantly influences their attitudes towards healthcare access and utilisation, resulting in avoidance and denial of their own healthcare needs.

4.6.3 Attitudes towards Financial Consideration

Numerous Chinese late-life participants voiced worries about the financial implications of accessing and utilising healthcare services in Aotearoa NZ. Expressions like "*it costs too much*" [Carla 3:2] and "*too expensive*" [Jack 10:9] underscored their economic concerns.

Despite the financial concerns voiced by some participants, as noted in the previous sub-theme, "don't want to be a burden," there were also positive attitudes towards healthcare spending. Adam explained, "*The most important thing to me is the outcome (of healthcare). When it comes to your body and health, the cost is the*

least of my concerns" [Adam 1:29]. This indicates that Chinese late-life migrants' financial considerations were not solely due to the pricing of services or conservative spending habits.

Upon further review of the interview transcripts, it became clear that the cost-effectiveness significantly impacted the Chinese late-life participants' perspectives on healthcare expenditure. Belle's story exemplified this viewpoint: "*When I suffered a minor burn, I contemplated seeking medical help. However, I deemed the injury not significant enough to justify the expense and time, so I opted to purchase a basic ointment and manage it on my own*" [Belle 2:27]. Carla expressed frustration with the high expenses and limited effectiveness of healthcare services, stating, "*Whenever I do fall ill and need to see my GP, it ends up costing a significant amount of money... And to make matters worse, it doesn't always provide relief for my conditions anyway*" [Carla 3:2]. Jack recounted a disappointing encounter with a specialist, expressing, "*In my opinion, specialists aren't all that great. The session only lasted 15 minutes, the diagnosis wasn't definitive, and yet I was billed 300 NZ dollars*" [Jack 10:10]. These Chinese late-life participants expressed dissatisfaction with the results and the perceived value of the healthcare services they had paid for. These unfavourable experiences had a major effect on their assessment of the efficiency of healthcare services and influenced their future choices about using certain healthcare services in Aotearoa NZ.

In addition, the expense of medications played a significant role in how Chinese late-life participants viewed healthcare and utilised services in Aotearoa NZ. Hank and Kate shared their reliance on medications procured from China, noting that they mainly consisted of flu medications for fevers and coughs. They also discussed challenges in obtaining certain medications in Aotearoa NZ, highlighting that bringing medications from China was "*more affordable and suitable*" for them [Hank 8:14; Kate 11:17]. These experiences suggest that the high cost of medications in Aotearoa NZ, coupled with concerns about the effectiveness of treatments, prompted recently arrived Chinese late-life migrants to source their treatments from overseas.

Overall, the primary issue for many was not the cost itself but the perceived lack of cost-effectiveness and satisfactory outcomes. These concerns about value for money influenced their attitudes toward seeking medical help and highlighted the importance of culturally sensitive and financially accessible healthcare services. The high cost of medications further compounded these financial concerns, leading many participants to bring

treatments from China. This practice reflects both a cultural preference for familiar remedies and a practical response to the high cost of healthcare in Aotearoa NZ.

4.6.4 Summary of theme three

The upbringing of recently arrived Chinese late-life migrants, a crucial aspect that significantly shapes their perspectives on accessing and utilising healthcare services in Aotearoa NZ, is deeply intertwined with cultural factors. Their attitudes towards the NZ health system are not just influenced, but often dictated, by cultural predisposing factors such as the old saying “don't want to be a burden” (chang yan dao), and financial considerations, are not just abstract concepts. They represent the personal struggles and considerations of Chinese late-life migrants when it comes to accessing healthcare services in Aotearoa NZ. The next theme, “Desire for Healthcare Information,” delves into their awareness and considerations of available healthcare services in Aotearoa NZ.

4.7 Theme Four: Desire for Healthcare Information

As discussed in the previous themes, recently arrived Chinese late-life migrants participating in this study have expressed concerns and identified difficulties when accessing and utilising the healthcare services in Aotearoa NZ. These concerns and problems often stem from differences in personal experiences with healthcare service delivery between China and Aotearoa NZ. Theme four, Desire for Healthcare Information, delves into participants' understandings and considerations of available healthcare services in Aotearoa NZ and explores how participants have come to such awareness. This theme highlights the importance of information as an enabling factor that influences individuals' healthcare-seeking behaviours. The analysis of the interviews identifies three primary sources of healthcare-related information delivery for participants: publications and media, social networks, and healthcare practitioners.

4.7.1 Publications and Media Sources

Chinese late-life participants frequently mentioned that their understanding of the NZ healthcare system was shaped by various publications and media sources. These sources include brochures from healthcare providers, articles in community newspapers, and online resources. However, the effectiveness of these materials in

conveying necessary information varied. Some participants found them useful and informative, while others struggled with the language barrier or found the information too generic to address their specific needs.

Some Chinese late-life participants appreciated the availability of healthcare information through publications and media, especially those in the Chinese language. They found these sources valuable for increasing their knowledge towards healthcare delivery in Aotearoa NZ. For instance, Adam emphasised the value of publications. He mentioned that he had seen medical and promotional information in doctors' offices, and on corridor walls in clinics. He stated "*The brochures are helpful, which offered details into local healthcare services and emergency procedures*" [Adam 1:9]. Adam also pointed out that he obtained "*information about COVID-19 vaccinations from Chinese media*", and suggesting these sources were crucial for him and other Chinese speakers in the community [Adam 1: 99]. However, Adam expressed that "*while English materials were helpful to me, they might not be as beneficial to people with poor English proficiency, such as late-life migrants or recently arrived migrants*" [Adam 1: 9.3].

Adam's experiences suggest he could access healthcare-related information from various publications and media forms, including printed materials, mainstream media, and Chinese media. His bilingual ability enabled him to benefit from both English and Chinese-based healthcare information, which helped him improve his health status, such as obtaining COVID-19 vaccinations. This public healthcare knowledge was successfully internalized by Adam to enhance his understanding of healthcare delivery-related issues in Aotearoa NZ. However, Adam also noted that his bilingualism was crucial for acquiring and utilising such healthcare knowledge, highlighting a potential barrier for recently arrived Chinese late-life migrants with limited English proficiency.

Conversely, other Chinese late-life participants expressed concerns about obtaining healthcare-related information from publications and media in Aotearoa NZ. Specifically, they noted challenges in accessing COVID-19-related information. Belle's experience illustrates this:

> Until now, I haven't received any (COVID-19-related healthcare information from publications and media) ... I got some verbal information from GP, but not much … I mainly get this (COVID-19-related healthcare information) by asking my friends. [Belle 2:12, 14, 16]

Dawn also pointed out the limitations of mainstream media:

> I don't recall seeing anything (COVID-related healthcare information) like that in mainstream media, especially in English. Perhaps I wasn't paying much attention ... I have received some helpful information from Chinese media, which I appreciate. [Dawn 4:6, 10]

Jack shared a similar sentiment:

> I don't think I see a lot of (health-related) information from mainstream media ... The only thing that comes to mind is some pamphlets at a doctor's office ... If you need to find specialised care, it's hard to know where to start. The only option seems to be getting a recommendation from your GP. [Jack 10:20, 21, 23]

These experiences from Chinese late-life migrants emphasised the limitations of mainstream media in Aotearoa NZ. The primary sources for these late-life migrant participants are Chinese media, friends, and GPs.

In general, the effectiveness of healthcare information dissemination through publications and media varies among recently arrived Chinese late-life migrants in Aotearoa NZ. Many participants faced challenges in accessing and utilising healthcare-related information from mainstream English-based sources due to language barriers. Chinese language-based sources were better received, but they often had limitations and inconsistent delivery. As a result, some participants sought alternative sources of information, such as consulting friends and healthcare practitioners. These alternative sources will be discussed in the following sections.

4.7.2 Healthcare Information Sources from Social Networks

Social networks played a pivotal role in the lives of Chinese late-life migrants, acting as essential channels for sharing healthcare information and support within the Chinese community in Aotearoa NZ. Friends, family members, and community groups often served as primary sources of advice and support. This informal network helped Chinese late-life participants navigate the complexities of the NZ healthcare system, share personal experiences, and recommend trusted healthcare providers. Dawn highlighted the significance of these social connections:

> My friends who have been here longer than me told me about which doctors are good and how to register with a GP. Their advice was invaluable. [Dawn 4:7]

Elva shared a similar experience:

> When I first arrived in Aotearoa NZ, I didn't know where to find doctors. My landlord advised me to see her GP at first. [Elva 5:7]

Carla and Ian also underscored the importance of informal networks:

> I may ask some of my friends (to get health-related and healthcare delivery information) ... Sometimes, I call my GP. [Carla 3:12, 13]
>
> I'm still figuring out where to seek help with certain health issues, but I have friends who might have some helpful suggestions ... one of my family members works in the healthcare field and can provide me with information. [Ian 9:3, 6]

These testimonials illustrate how Chinese late-life participants turned to their social network, specifically friends, to fill gaps in their knowledge and find suitable healthcare providers.

Additionally, Fred, another interviewee, emphasised the value of community connections: "*We have a WeChat group for the Chinese community here, where we share information about healthcare and other services. It's very helpful*" [Fred 6:12]. This virtual community platform not only provided practical information but also fostered a sense of solidarity and mutual support among its members.

Overall, social networks played a crucial role in mitigating the barriers of language, cultural differences, and unfamiliarity with the healthcare system. They empowered recently arrived Chinese late-life migrants to decide about their health and healthcare utilisation, leveraging collective knowledge and experiences within their community.

4.7.3 Healthcare Information Sources from Healthcare Practitioners

Healthcare practitioners, as the primary source of information for participants, play a crucial role in the communication process. The effectiveness of this communication is key to ensuring that patients comprehend their healthcare options and receive the appropriate care. Notably, the experiences of Chinese late-life participants with their healthcare practitioners were diverse. While some lauded the professionalism and clarity of the information provided, others encountered communication challenges and a need for more personalised care.

Lily's positive experience is a testament to the impact of effective communication. She shared, "*My GP was very clear in his explanations, even providing written materials in Chinese, which I found to be a very considerate*" [Lily 12:8]. Recalling Adam's experiences, He noted, "*I often see medical and promotional information in doctors' offices and on corridor walls in clinics*" [Adam 1:9.1]. However, he expressed disappointment about the lack of direct communication, stating that he was "*receiving mostly printed material*" and "*limited verbal explanations from doctors*", which he felt left the decision-making largely up to the patients [Adam 1:9.2, 9.4].

In contrast, other Chinese late-life participants did not place such trust in their healthcare practitioners as a helpful source of healthcare-related knowledge, such as Belle and Dawn:

> The GP provides some (verbal) information, but only a little... When needed, I ask questions and receive answers. [Belle 2:12, 13]
>
> From my family's experiences with doctors, we have never been given any written information and only minimal verbal information. [Dawn 4:6]

These varied perspectives highlight the complex relationships among participants, their external environments, and healthcare information sources. The interviews revealed that while some participants viewed their healthcare practitioners as valuable information providers, others relied more heavily on social networks and were often dissatisfied with the formal communication received from their healthcare providers.

4.7.4 Summary of theme four

In summary, the general feelings expressed by the participants towards healthcare information sources from publications and media, social networks, and healthcare practitioners were mixed. Among these three sub-themes, most participants heavily relied on their social networks as their primary source of healthcare-related knowledge. At the same time, many participants needed help to obtain relevant information from other sources to meet their needs.

The mixed feelings towards these information sources reflect the challenges of accessibility and trust within the healthcare system for Chinese immigrants in Aotearoa NZ. The heavy reliance on social networks over

formal healthcare information sources underscores the need for more effective communication strategies from healthcare practitioners and better access to comprehensive healthcare information in publications and media.

4.8 Summary of the Chapter

In summary, the chapter identified four key themes that influence healthcare access and utilisation among recently arrived Chinese late-life migrants in Aotearoa NZ during non-pandemic times and the COVID-19 pandemic.

The immigration process has led to significant changes in how Chinese late-life migrants' access and use healthcare services in an unfamiliar system. The first theme, "It is the Little Things that Matter the Most," explores the factors that enable interactions between Chinese migrants and the NZ healthcare system. This theme uncovers various issues, such as the importance of waiting time, the location of healthcare services, the availability of Chinese-speaking practitioners, and difficulties in translation, which impact the views and experiences of Chinese late-life migrants in Aotearoa NZ.

Theme Two, "Fractured Patient-Practitioner Relationships," delves into the intimate and sensitive interactions that influence healthcare access. It highlights challenges in communication, cultural understanding, and conflicting health-related concepts that affect satisfaction and security in patient-practitioner relationships.

The third theme, "Cultural Beliefs and Attitudes Towards Healthcare Access and Utilisation," explores how traditional Chinese beliefs impact healthcare access and utilisation. It identifies positive contributions and challenges stemming from the alignment and conflicts of these beliefs with the NZ healthcare context.

Additionally, the study identifies theme four, which examines how recently arrived Chinese late-life migrants seek supplementary healthcare information within their social networks due to barriers in obtaining information from other sources.

To gain a comprehensive understanding of the factors influencing healthcare access and utilisation among recently arrived Chinese late-life migrants, a detailed discussion integrating findings from thematic analysis

and survey results must be conducted in Chapter Seven, considering the context of the research and relevant literature.

CHAPTER 5: PHASE TWO FINDINGS

Part one - Evaluation of the Pilot Survey

5.1 Introduction

The primary purposes of phase two were to modify and develop a pilot survey to explore healthcare experiences among recently arrived Chinese late-life migrants in Aotearoa NZ, in non-pandemic and COVID-19 pandemic circumstances. This pilot survey, with its specific focus on healthcare experiences, is a crucial step in understanding and addressing the needs of the target population. The evaluation of this pilot survey could inform the recommendations for the design of a nationally administered survey.

Phase two data was collected through an open-access, anonymous online pilot survey. The data collection period of the online pilot survey is between December 2021 and May 2022. By the end of May 2022, 71 participants participated in this pilot survey. Among them, 63 participants completed the online questionnaire. Consequently, the valid survey data was analysed, and the findings are presented in Chapters Five and Six. Chapter Five focuses on evaluating this pilot survey and exploring the construct of the questionnaire, while Chapter Six concentrates on reporting the descriptive and inferential statistical analysis of participants' answers to survey questions.

This chapter contains three main parts. The first part provides details about the process of development of the "pilot survey on healthcare utilisation," using the phase one finding as a guideline. The second part interprets the baseline information collected by this pilot survey, including the completion rate, survey participants' socio-demographic statistics, and their evaluation of the pilot survey. The final part expounds on the contrast validity and internal consistency outcomes that emerged using the categorical principal components analysis (CATPCA) method. These results can identify potential deficiencies in the survey and improve the design of a nationally administered survey in future studies. The statistical outcomes regarding the possible factors that affected survey participants' healthcare access and utilisation are described and interpreted in the following chapter, Chapter Six.

5.2 Survey Development

With the permission from MOH, phase two of the study modified a validated MOH health questionnaire to gather quantitative data on healthcare utilisation for recently arrived Chinese late-life migrants. The template questionnaire for this phase was the "Health Service Utilisation and Patient Experience" survey, a subsection of the "2017/18 NZ Health Survey." This study chose to use these survey questions and their scale instruments due to their established psychometric properties, reliability and validity, and acceptance among healthcare researchers. This decision ensures the credibility and robustness of the research methodology (Drost, 2011).

The existing MOH survey was developed to measure primary, secondary, and tertiary services utilisation by all age and ethnic groups in Aotearoa NZ (MOH, 2018b). Namely, the existing measures may not be culturally sensitive to Chinese late-life migrants. Moreover, the MOH survey was designed before the COVID-19 outbreak, and it did not mention the utilisation of COVID-19-related health facilities, such as screening tests and telehealth. Thus, the themes that emerged in phase one became an essential guideline to modify the existing survey questions. To better reflect the healthcare access and utilisation for the target population (recently arrived Chinese late-life migrants) in the target situation (in the non-pandemic and the COVID-19 pandemic circumstances), this study modified and developed the pilot survey following three stages. This rigorous modification process ensures that the survey is culturally sensitive, inclusive of COVID-19-related health facilities, and tailored to the unique needs of Chinese late-life migrants. Following this survey development strategy, this study modified 94 questions from the MOH survey and finally developed 58 multiple-choice questions and a few short-answer questions for the pilot survey.

5.2.1 Stage one

Thematic findings from phase one were used to design questions for the pilot survey (phase two) to better reflect the reality of Chinese late-life migrants.

First, the existing survey questions were modified to reflect the Chinese late-life migrants better (see Appendix F). Phase one of the study highlighted that Chinese late-life migrant participants' Cultural Beliefs always affect their Attitudes Towards Healthcare Access and Utilisation (Theme Three). Hence, "Don't want to

be a burden" (a sub-theme of Theme Three) was added as a primary response option to answer the questions about barriers to healthcare access and utilisation. The sample question was: "*has there been any time when you needed to see a GP about your own health but did not get to see any doctor? If so, why*?" Furthermore, the initial phase of the study revealed a significant theme among the Chinese late-life migrant participants - 'It is the Little Things that Matter the Most' (Theme One). This theme underscores the importance of factors such as the 'location of the healthcare services,' 'availability of Chinese-speaking healthcare practitioners,' and 'difficulty in getting translation.' These factors were subsequently incorporated into the phase two survey questions to delve deeper into the barriers these participants face in accessing and utilising healthcare services. These services encompass GP clinics, after-hour medical centres, public and private hospitals, ED care at a public hospital, medical specialists, and other/alternative care service. For instance, the modified survey asked "s*ince you first arrived in Aotearoa NZ, you were not able to use the GP/after-hours/hospital/ED/medical specialists/other healthcare services when you needed to? If so, why?*"

Second, guided by the outcomes from phase one of the study, nearly half of the questions from the existing survey were eliminated. There were 94 questions within the chosen template questionnaire (2017/18 NZ Health Survey). To make the pilot survey more acceptable and feasible, the number of the questions must be reduced. The elimination process follows three strategies (see Appendix F). First, interview participants in phase one complained of "*ineffective communication*," "*conflict in health-related concepts*," and the "*satisfaction and security with healthcare practitioners*" have Fractured the Patient-Practitioner Relationship (Theme Two) when using GP and ED services. Thus, this pilot survey concentrated on exploring how such language and cultural barriers affect the access and utilisation of Primary Health Care Services (section 1 of the pilot survey), General Practitioners (section 2 of the pilot survey), and Emergency Department (section 7 of the pilot survey). Second, to maintain a suitable number of questions in the questionnaire, similar questions in the access and utilisation of after-hours, hospital, medical specialists, and other or alternative healthcare services from the existing survey were eliminated. Furthermore, in phase one, most interview participants stated that time matters in healthcare access and utilising GP and ED services (subtheme of Theme One). Hence, the pilot survey (phase two) only kept the "*long waiting time/list*" as a response option to explore whether time matters when accessing and utilising Primary Health Care Services (section 1 of the pilot survey), General Practitioners (section 2 of the pilot survey), and Emergency Department (section 7 of the pilot survey).

Third, following the research objectives of phase two of the study and the key insights discovered in phase one, this study developed 29 new questions (see Appendix F). Among them, 11 questions related to participants' healthcare utilisation experiences, and 18 questions related to the COVID-19-related impacts. First of all, the healthcare-utilisation-related questions aimed to explore quality of care participants have received (Q2.2 & 2.3), barriers to accessing and utilising local healthcare services participants have experienced (Q5.2, 6.2, 7,6, 8.2, & 9.2), and participants' alternative healthcare-seeking behaviours (Q2.9, 4.3, 5.3, & 8.3). The findings of such questions could be used to cross check the outcomes of phase one. For example, phase one of the study identified that time matters in accessing and utilisation primary healthcare services (sub-theme under Theme One). Thus, two new questions (Q2.2 & 2.3) were developed to investigate the waiting time that participants experienced in using GP services in Aotearoa NZ. What is more, the COVID-19-related questions aimed to investigate the pandemic effect on participants healthcare access and utilisation (Q1.10, 2.10, 3.3, 4.4, 5.4, 6.3, 7.7, 8.4, 9.3, & 10.10). The sample question was: " *Does the COVID-19 pandemic prevented you from visiting health services when you had a health problem?*" Furthermore, by using the existing MOH survey questions as a model, this study also developed a set of questions (Q10.1, 10.2, 10.3, 10.4, 10.6, 10.7, & 10.8) to explore participants' experiences of accessing and using COVID-19-related healthcare and support services. These services include COVID-19 testing, vaccination, isolation services, Healthline, and other hotline services. These questions were presented in sections 10 of the questionnaire (see Appendix C1 and C2). Additionally, a new question (Q10.9) relating to how to access available information about "*COVID-19-related health and support services in the area*" was also developed. The options for the question include three primary sources: publications and media, social networks, and healthcare practitioners, which were identified in phase one, Theme Four (Desire for Healthcare Information).

5.2.2 Stage two

Stage two was to check the reliability issue associated with modifying. Modifying existing items is a sensitive issue because the validity and meaning of the item may be weakened or even lost (Tsang et al., 2017). It is easier to know how much change can be tolerated after modifying the existing item to a new one (Geuens & De Pelsmacker, 2017). Cutting too many items could harm the reliability of scales (von Elm et al., 2014). As the most common reliability measurement, internal consistency increases as a function of the number of items

and the correlation between the items (Bolarinwa, 2015). To ensure the internal consistency of the pilot survey, the unnecessary items that are the least correlated with the others were eliminated (Geuens & De Pelsmacker, 2017). The translation and back-translation method, discussed in detail in phase one design, was also used to ensure the reliability and validity of the pilot survey. Because the pilot survey needed to be translated into Chinese from English, this translation method can help ensure that the translated questions maintain the intent of the original questions (Tsang et al., 2017).

Moreover, cross-checking questions, which asked the same questions in different ways, were developed to test the reliability of the survey. For instance, survey question Q1.2 (*types of primary healthcare services participants have used*) has developed to cross-check Q2.1 *(GP services utilisation*) and Q4.1 *(after-hours healthcare utilisation*). The categorical principal components analysis (CATPCA) was also applied to examine further the construct validity and internal consistency of the questions in this pilot survey.

5.2.3 Stage three

Stage three was to pre-test the pilot survey. The purpose of this stage was to estimate the time used to complete the pilot survey and test the validity and reliability of the draft questionnaire (Tsang et al., 2017). Moreover, it can also help to refine the questionnaire (Wong et al., 2012). This study recruited a small number of participants, which included ten Chinese late-life migrants (four males and six females) aged 65 and over. Participants were asked to examine the length of the questionnaire, indicate questions or words that were hard to understand, and invite them to make any comments they wanted. Furthermore, two advisors/experts who from Chinese organisations (TANI) and hold postgraduate degree (Master) in the health field were invited to further comment on the face and content validity and reliability of the pilot questionnaire. The engagement of these experts could make the pilot survey more valid, reliable, and significant. This is because the pilot survey was developed based on the existing valid survey from MOH, which already established psychometric properties, reliability and validity, and acceptance among healthcare researchers. Moreover, as discussed in section 5.2.1, only few questions were reworded.

5.2.4 Structure of the questionnaire

Following the structure of the existing MOH survey, this pilot survey was structured into three main sections: 1) Socio-demographic Characteristics Information, 2) Healthcare Utilisation Questionnaire, and 3) Survey Evaluation. The Socio-demographic Characteristics Information Section used 11 questions to collect the participants' personal background information, which can help identify their eligibility and provide a clear overview of their socio-demographic background. The Healthcare Utilisation Questionnaire aimed to explore the healthcare utilisation experiences of recently arrived Chinese late-life migrant participants. The Survey Evaluation section focused on gathering participants' evaluations of the survey, such as the quantity and quality of the survey questions, survey method, and recruitment methods.

In total, the questionnaire contained 58 multiple-choice questions and a few short-answer questions. These short answer questions acted as follow-up questions to ask participants to give further explanations. To better understand healthcare access and utilisation patterns in different levels of healthcare services within the Aotearoa NZ health system, these questions are categorised into ten sub-sections. They cover the recently arrived Chinese late-life migrants' experiences of accessing and utilising primary healthcare (including primary medical centres, GPs, nursing care, and after-hours clinics), secondary and tertiary healthcare systems (involving public hospitals, private hospitals, emergency departments (ED), and medical specialists), other healthcare (i.e., Chinese traditional medical doctor, Chinese acupuncturist, and so on), and the COVID-19-related healthcare and support services (i.e., COVID-19 testing, vaccination, and isolation services, and Hotline).

Based on the research objectives and the insights that emerged from the findings of the qualitative phase (phase one), the survey questions in each sub-section can be grouped into four categories/hypothesis components. Hypothesis Component One aimed to explore the pattern of healthcare utilisation. Specifically, such question asked whether potential survey participants have used specific (i.e., GPs, after-hour care, hospitals, ED care, other/alternative care services, and so on) healthcare in Aotearoa NZ during the non-pandemic and the COVID-19 pandemic. Hypothesis Component Two aims to collect potential participants' evaluation of healthcare quality. Hypothesis Component Three concentrates on investigating the barriers (including predisposing, enabling, and need factors) in healthcare access and utilisation among potential participants. Hypothesis

Component Four aims to discover potential participants' alternative healthcare-seeking behaviours when they experience difficulties accessing and utilising certain healthcare services.

5.3 Survey Completion Rate and Response Rate

This study evaluates the quality of the survey data, using the completion rate and response rate for the pilot survey.

5.3.1 Survey Completion Rate

According to the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) guideline, the completion rate is the percentage of people who completed the survey once they had started it (Basson, 2011; Eysenbach, 2004). Since this study recorded 71 people making a start on the survey and 63 completed the survey, the complete rate for the pilot survey was 88.73%. The higher survey completion rate means participants can access the online survey easily and have good survey-taking experiences. Meanwhile, the higher completion rate also indicates a greater likelihood that the sample is representative of the target population (Basson, 2011). This enhances the validity of the survey results.

5.3.2 Survey Response Rate

The survey response rate is the percentage of a sample that successfully finished a survey. It is the number of people who have completed a survey divided by the number of people to whom it has been sent (Glaser, 2011). As phase two of the study used an open-access online survey, it was impossible to get a well-defined sample size for the survey. Because anyone who fitted the survey criteria can take part. Consequently, the survey response rate does not apply to this study.

5.4 Socio-demographic Information

The first part of the survey data this study collected provides participants' socio-demographic information, which includes age, gender, place of birth, immigration status, the length and location of residence in Aotearoa NZ, civil/marital status and accommodation status in Aotearoa NZ, education, incomes, and health/medical insurance. The primary purpose of gathering such data is to provide a clear overview of the personal contextual

backgrounds of the survey participants. Moreover, these data may contribute to making sense of healthcare utilisation-related findings later in Chapter Six.

This section focuses on interpreting the survey findings based on the statistical analysis of 63 valid survey responses. The descriptive analysis of this section involved a summary of the distributions of the participants' characteristics and documenting opinions, as well as the mean/average for the continuous data (including age, and years lived in Aotearoa NZ). The numerical interpretation undertaken in this section focuses on the original/unweighted results.

5.4.1 Age Group

Age limit is one of the most important inclusion criteria when recruiting eligible participants for phase two of the study. As discussed in the method chapter (Chapter Three), the eligible survey participants were Chinese migrants 65 years of age and over. Figure 5.1 presents the age group distribution within the specific range. The largest sub-group within the survey specification is between the ages of 65 and 74. Over 61.90% of the survey participants were from this age group. Figure 5.1 shows that 28.57% of survey participants were between 75 and 84. Only 9.52% were aged 85 and over. This age group distribution in the survey is similar to the distribution of the study population in the 2018 NZ census (82.81% between the ages of 65 and 74 years, 15.51% between ages 75 and 84 years, and 1.48% aged 85 years and over) (Stats NZ, 2018).

Figure 5.*1*: *Age Group*

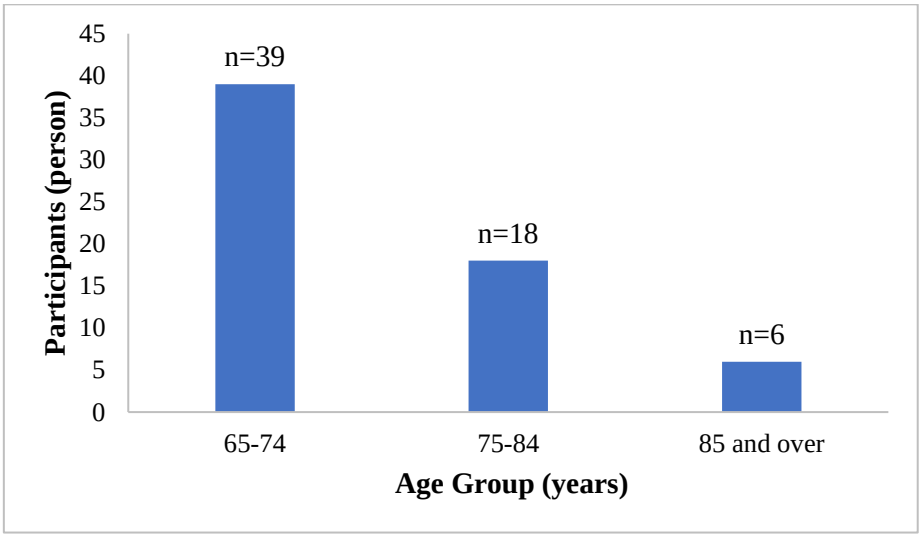


Table 5-1: *Descriptive Statistics of Participants' Age group*

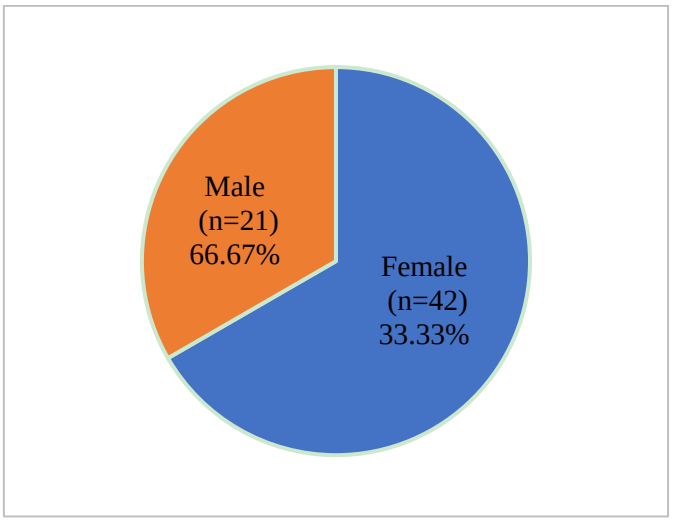
	Mean	Median	Std. Dev.	Variance	Count
Age group (years)	65-74	65-74	0.66	0.44	63

Table 5-1 reports the descriptive analysis of participants' age-group data. It showed the average and median age groups for the survey participants were between the ages of 65 and 74. The equal mean and median indicate that the data is symmetric around its peak value in a symmetrical distribution (Wagner & Gillespie, 2019). Meanwhile, the slight standard deviation (Std. Dev.) and variance indicate that the data points are very close to the mean and each other (Wagner & Gillespie, 2019).

5.4.2 Gender

Figure 5.2 shows the dataset's 63 valid participants, 42 females and 21 males. The survey did not pre-select participants according to their gender; 66.67% of the survey participants were female, and 33.33% were male, which reflected the gender distribution of the survey participants. In section 5.5, the gender distribution on the survey will be compared to the census gender distribution.

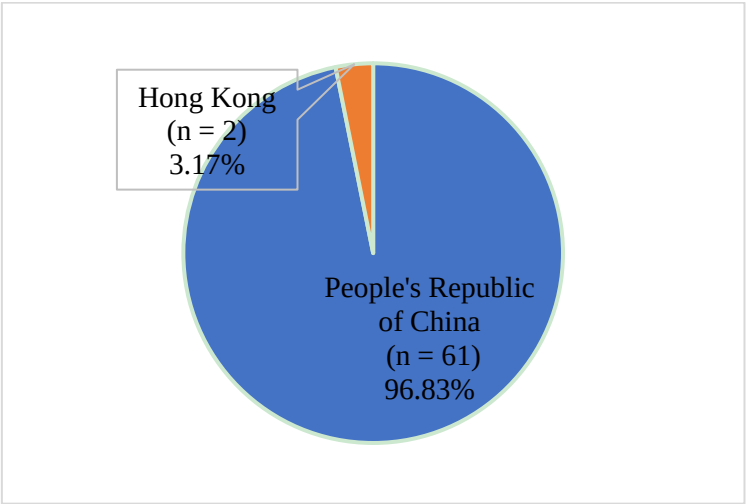
Figure 5.*2*: *Gender Comparison*



5.4.3 Birth Place

Collecting information related to participants' birthplace is to ensure participants meet the recruitment criteria. As previously discussed, only people who identified themselves as Chinese were eligible to complete the survey. Figure 5.3 indicates that most survey participants were born in the People's Republic of China (PRC, 96.83%). Only two participants mentioned they were from Hong Kong (3.17%), a city and particular administrative region of the PRC. The results indicated that all participants eligible to complete the survey met the survey criterion. However, it did not provide any vital information for further discussion.

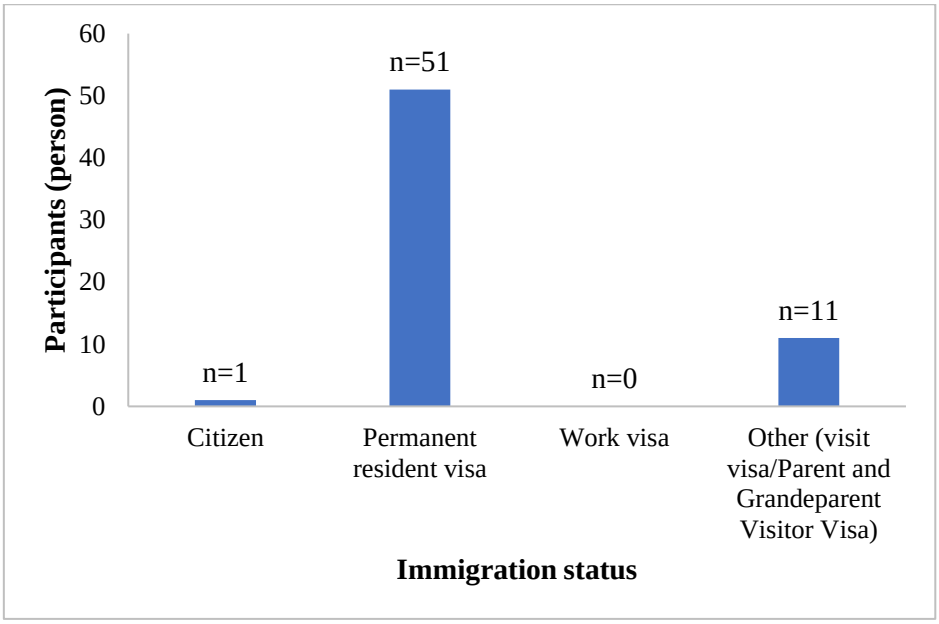
Figure 5.*3*: *Birth Place*



5.4.4 Immigration Status

In answering the immigration status, 51 participants (81.0%) stated they hold a Permanent Resident Visa. Eleven participants (17.5%) had a Visit Visa for family unification. Only one participant (1.6%) reported as a NZ citizen (See Figure 5.4). All NZ residents, including citizens, permanent residents, holders of a two-year work visa, or quota refugees, are eligible for publicly funded healthcare (INZ, n.d.). Non-residents may have to pay for hospital services themselves (Pegasus Health, 2014). The immigration status may impact migrants' attitudes and behaviours toward accessing and using healthcare services in Aotearoa NZ. More specific findings are analysed in Chapter Six using the binary logistic regression method and discussed in depth in the Discussion Chapter.

Figure 5.*4*: *Immigration Status*



5.4.5 Length and Location of Residence in Aotearoa NZ

To confirm whether participants met the pilot survey's inclusive criteria, they were also asked to report how long they had lived in Aotearoa NZ. Figure 5.5 below reports the duration of residence since participants first arrived in Aotearoa NZ. It shows that all the participants arrived in Aotearoa NZ less than ten years ago from the survey date. Namely, they are all eligible to participate in the pilot survey.

Figure 5.5: *Length of Residence in Aotearoa NZ*

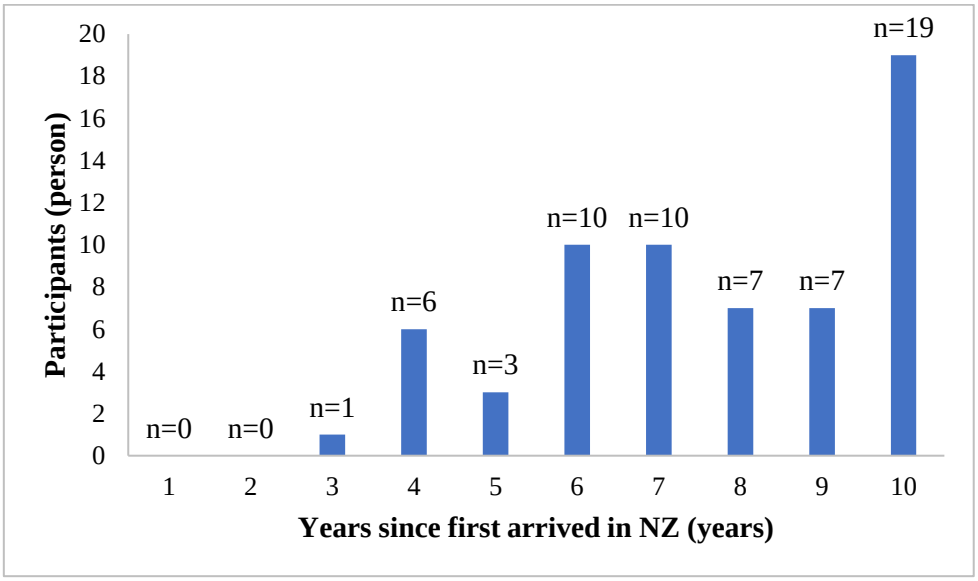


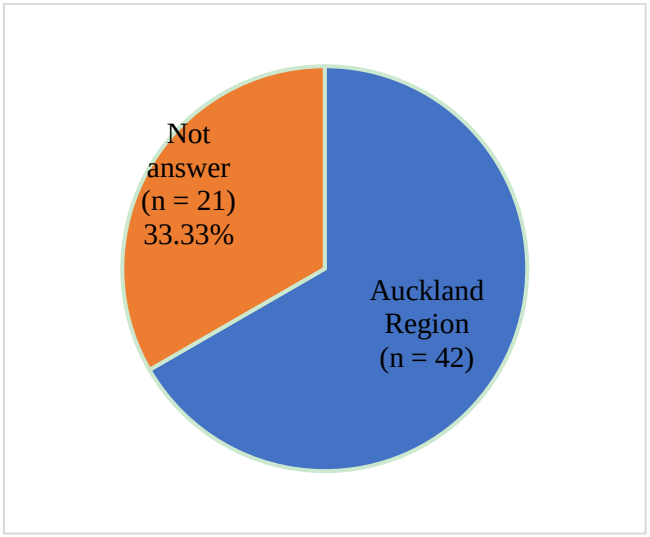
Table 5-2: *Descriptive Statistics of Participants' Length of Residence in Aotearoa NZ*

	Mean	Median	Std. Dev.	Variance	Count
Years in Aotearoa NZ (years)	7.6	8	2.7	7.3	63

According to the outcomes from Figure 5.5, most participants (30.2%) had spent ten years since they first arrived in Aotearoa NZ. The number of participants who had spent 6 to 9 years in Aotearoa NZ was thirty-four (53.96%). This included 15.87% of 6 and 7 years and 11.11% of 8 and 9 years. Only 10 participants had spent five or fewer years in Aotearoa NZ, including 3 (4.8%) had spent five years, 6 (9.5%) had spent four years, and 1 (1.6%) had spent three years. The average length of residence in Aotearoa NZ for survey participants is about 7.6 years (see Table 5-2). This phenomenon is worth further exploration as it may impact the design of future studies.

Only 40 participants (67.7%) had provided their residency information, and all said they lived in the Auckland region. Twenty-one participants (33.3%) still needed to provide their residence information (see Figure 5.6).

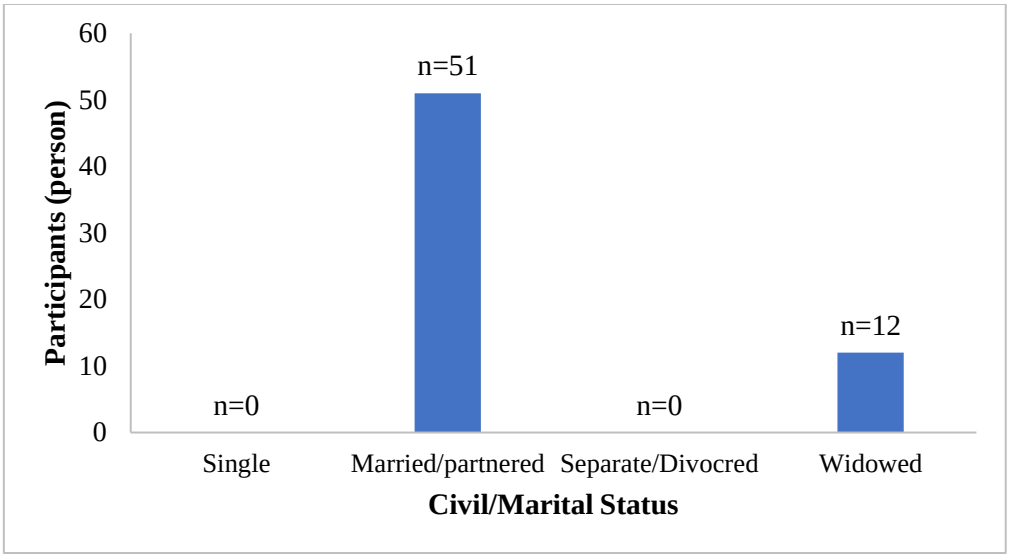
Figure 5.6: *Residence in Aotearoa NZ*



5.4.6 Civil/Marital Status and Accommodation Status

This pilot survey asked participants to provide their civil/marital status. Figure 5.7 represents the distribution of civil or marital status among survey participants. Over 80.95% of participants were married or in a partnered relationship. The rest of the participants (19.05%) reported a widowed status. No single or divorced participants were identified.

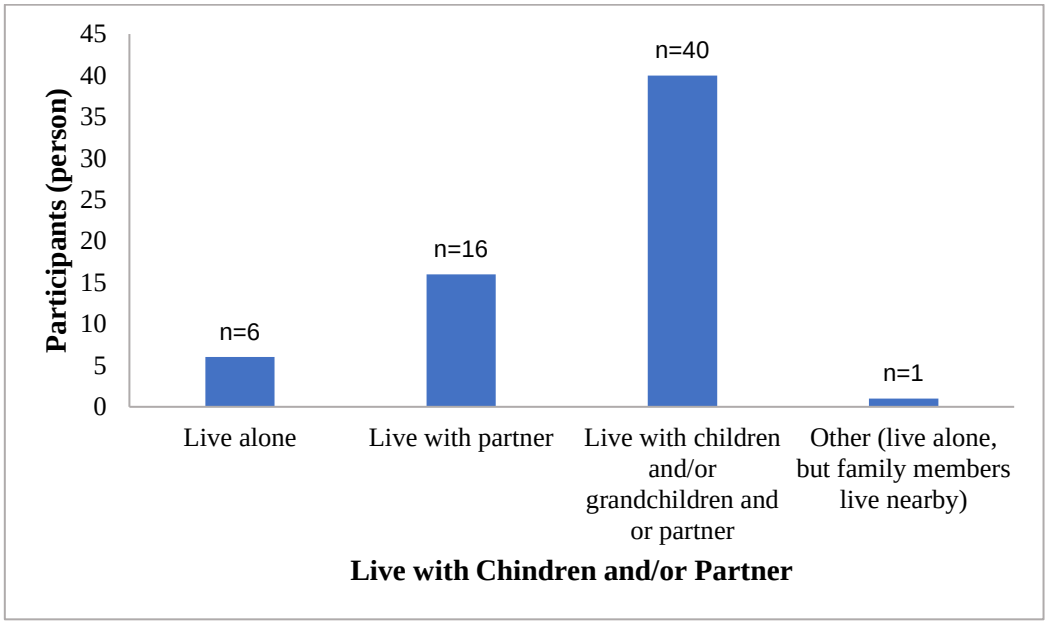
Figure 5.7: *Civil/Marital Status*



Participants were also asked whether they lived with anyone in the same household in Aotearoa NZ. Figure 5.8 shows that 88.88% of all participants were currently living with spouses and/or relatives (including

partners, and/or adult children, and/or grandchildren), compared to only 9.52% living alone. Among those participants who were living with relatives, there was one particular case, participant who reported living alone, but with one of the family members living nearby.

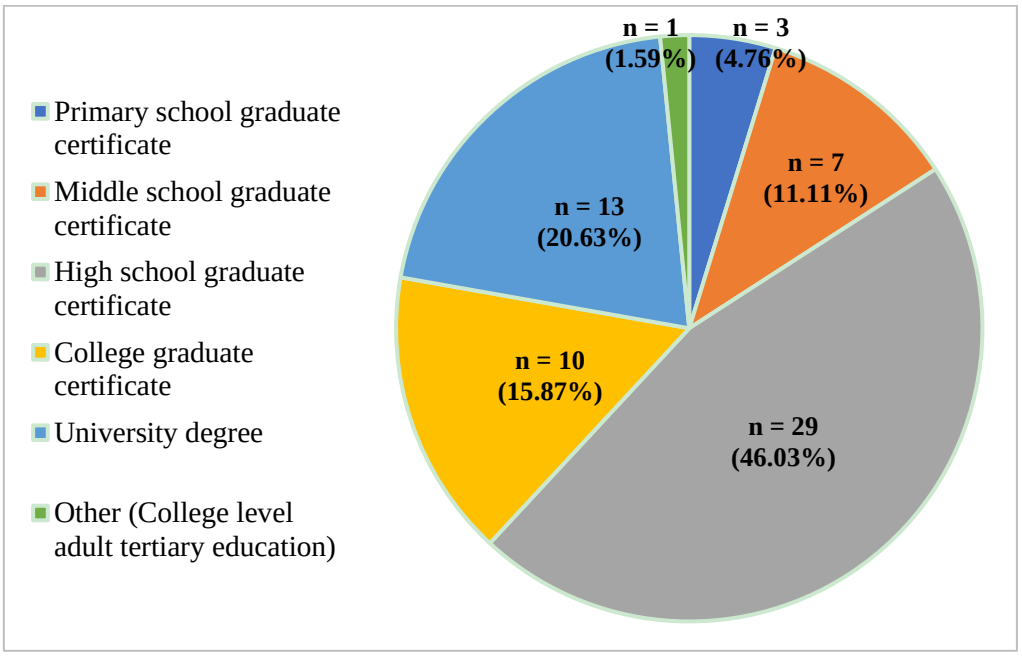
Figure 5.*8*: *Accommodation Status in Aotearoa NZ*



5.4.7 Highest Educational Qualification

Survey participants' highest education level is illustrated in Figure 5.9. Overall, 24 (38.09%) participants have completed tertiary education, including 10 (15.87%) who obtained a national diploma, 13 (20.63%) who acquired a bachelor's degree or above, and 1 (1.59%) got an adult tertiary education certificate. More than half of the participants have completed secondary education. Among them, 7 (11.11%) graduated from a middle school in China (corresponding to year 7 to year 8 in Aotearoa NZ), and 29 (46.03%) participants graduated from a high school in China (corresponding to year 9 to year 13 in Aotearoa NZ). Three participants (4.76%) reported they only completed primary education. The education level could relate to an individual's attitude toward healthcare access and utilisation (Chung et al., 2018). this study used Chapter Six's binary logistic regression analysis method to test this correlation.

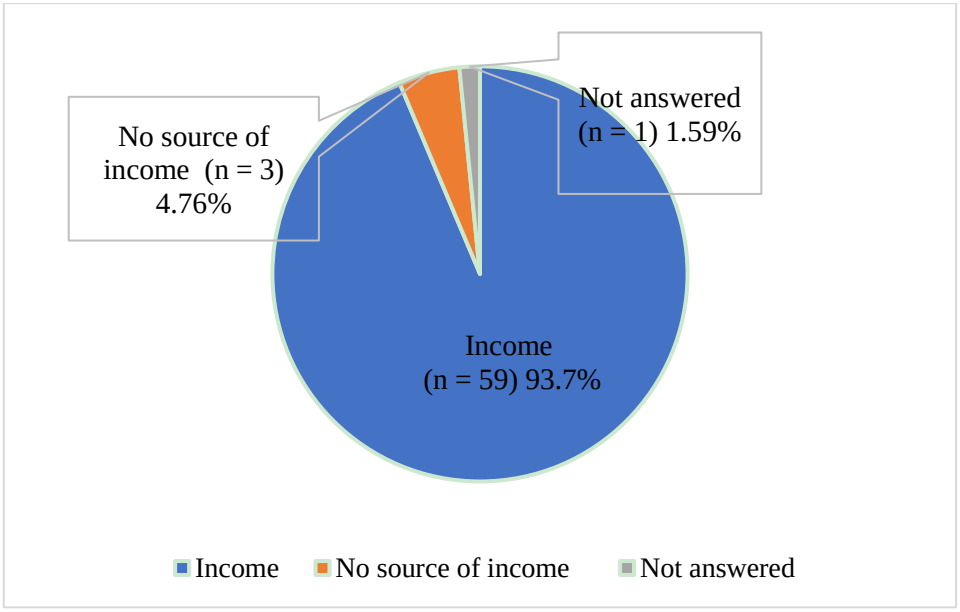
Figure 5.*9*: *Highest Education Qualification*



5.4.8 Incomes

Figure 5.10 represents participants' financial status, another influence impacting individuals' healthcare-seeking behaviours.

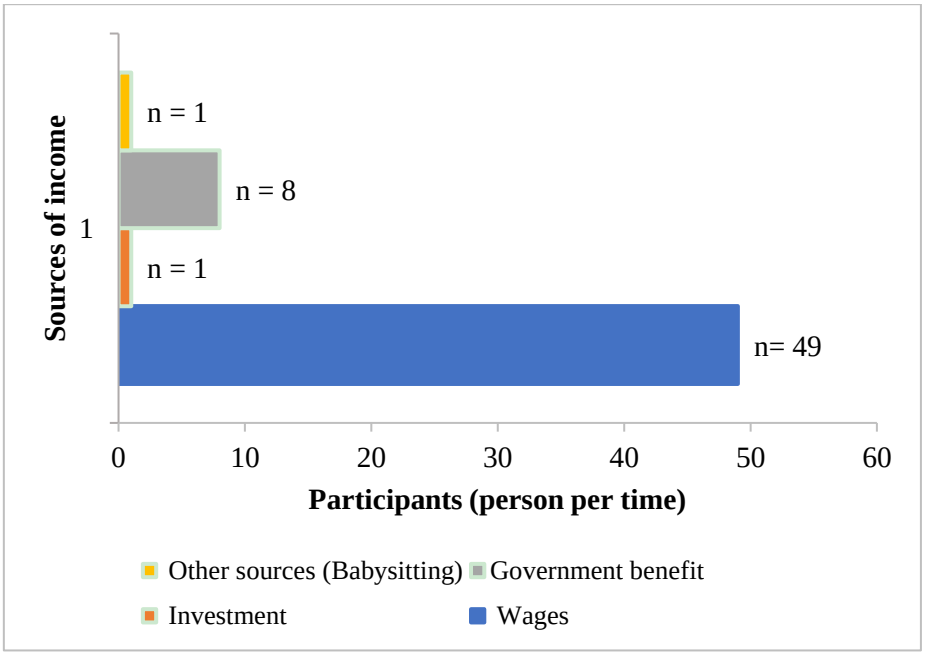
Figure 5.*10*: *Income*



The majority of the participants (93.65%) indicated they had specific sources of income, while 3 participants (4.76%) declared that they did not have any source of income. One participant (1.59%) had not answered the

question. The missing data only occupies 1.59% of the data set, so it has no significant ramifications for the results (Janssen et al., 2010; Little & Rubin, 2019). Moreover, Figure 5.11 above reports that wage was the primary source of income. The government benefits followed them. Investments and other sources occupy a minimal proportion of participants' income.

Figure 5.*11*: *Sources of Income*[4]

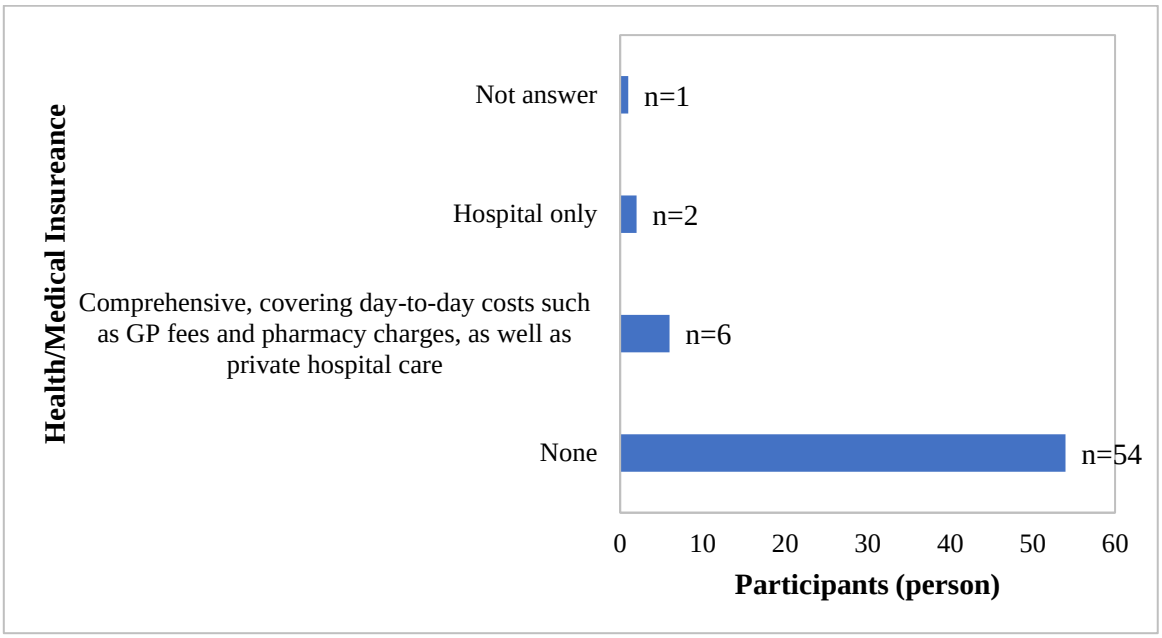


5.4.9 Health/Medical Insurance

In answering whether they had any private health/medical insurance in Aotearoa NZ, 54 participants (85.51%) reported that they had no health/medical insurance in Aotearoa NZ (see Figure 5.12). One participant still needs to answer the question. In other words, only 12.67% of the survey participants had health or medical insurance. Of those who had insurance, 6 had comprehensive health/medical insurance, covering day-to-day costs such as GP fees, pharmacy charges, and private hospital care (9.52%). Two participants' insurance only covered the hospital care (3.17%). The association between health/medical insurance and recently arrived Chinese late-life migrants' healthcare utilisation is examined in the next chapter (Chapter Six).

4 Notes: Figure 5.11 shows the different sources of income participants had. Participants allowed to give more than one sources of income. Thus, the unit per person-count instead of person is introduced to present frequency counts for the answer.

Figure 5.*12*: *Health/Medical Insurance*



This section described the baseline of participants' socio-demographics information. The following section focuses on participants' evaluation of the pilot survey, including the quality and quantity of the survey questions, survey method, and recruitment method.

5.5 Evaluation of Weighting Variables Used in Phase Two of the Study

As previously discussed in section 3.6 of the Method Chapter, to minimise sample imbalance, phase two of the study employed age and gender variables as the weighting variables to weigh the original data. In order to explore whether the study is biased in population characteristics estimation, the following sections compare the age group and gender distributions between interview participants, survey participants, and the NZ census.

5.5.1 Age group

The age group distribution of interview participants (phase one) and survey respondents (phase two) differed. In phase one of the study, around 83.33% of the interview participants were between 65 and 74. The remaining participants (16.67%) were between 75 and 84. On the other hand, phase two of the study recruited more recently arrived Chinese late-life migrants older than 75 years. In phase two of the study, over 61.90% of the survey respondents were between the ages of 65 and 74 years, 28.57% were between ages 75 and 84 years, and 9.52% were aged 85 and over.

The study's age group distributions in phase one and phase two differ from the census age group distribution. According to the findings from the Stats NZ census (2018), 82.81% of the recently arrived Chinese late-life migrants who fit the study criteria (Chinese migrants aged 65 years old and over and arrived in Aotearoa NZ less than ten years ago from the date of the interview/survey) were between the ages of 65 and 74 years. Over 15.71% of the eligible Chinese late-life migrants were between ages 75 and 84 years, and 1.48% were aged 85 years and over (Stats NZ, 2018). However, the average age group of interview participants (phase one) and survey respondents (phase two) is in line with the 2018 NZ census, which is the ages of 65 to 74 years.

5.5.2 Gender

The gender distributions of the interview participants and the pilot survey respondents are similar. More females have participated in this study (58.33% in phase one and 66.67% in phase two) than males (41.67% in phase one and 33.33% in phase two). These results are very different from the reported census gender distribution. According to the outcomes of the Stats NZ census (2018), over 52.33% of the Chinese late-life migrants were male. Females who fit the study criteria occupy less than 48% of the population.

The age group and gender distributions of participants/respondents of this study are different from the 2018 NZ census. Two main reasons may cause this phenomenon. First, it may be caused by the outdated NZ census. The study data was collected between September 2020 (started the data collection for phase one of the study) and May 2022 (finished the data collection for phase two). The census data used in this study is the 2018 NZ census. As the 5-years cycle of census data, the most recent available census is 2018, which could not fully reflect the age and gender distribution for the study population during the study period (2020 to 2022). Second, this phenomenon may also be due to the constraints caused by the ongoing COVID-19 pandemic. In Aotearoa NZ, the first outbreak was reported in late February 2020. Since then, some recently arrived Chinese late-life migrants have decided to move back to China as they were concerned about their health and safety. Others had deleted or even cancelled their migration plans due to the NZ government closing the country's borders after the first outbreak.

The difference in the age group and gender distributions between phase two of the study and the 2018 NZ census could cause a bias in population characteristics estimation (Brick, 2013). Consequently, wrong conclusions may be drawn from the survey results. However, as discussed in Chapter Six, the sample imbalance bias in phase two was reduced after using gender and age group weights. Namely, the weighted survey results are more reliable as the weighted survey sample was close to the study population.

5.6 Evaluation of The Pilot Survey

This study's pilot survey findings are of significant importance. They provide a comprehensive assessment of the survey questions' quantity and quality, the survey method, and the recruitment methods. These insights are crucial for the design of future nationally administered surveys that include this specific population demographic. The descriptive statistics in this section are based on the original/unweighted data for the full sample, ensuring the accuracy and reliability of the findings.

5.6.1 Respondent Burden Assessment

The first evaluation question was a burden assessment on the pilot survey. Participants were asked to rank the time spend on completing the survey, the number of questions, and the complexity of questions using an ordinal scale ("*absolutely not acceptable*," *not acceptable*," "*neither acceptable nor not acceptable*," "*acceptable*," and "h*ighly acceptable*"). Table 5-3 reports the outcomes of the participants' burden assessment.

First, participants were asked to rate the time they spent on completing the pilot survey. As Table 5-3 represents, most participants (92.06%) considered the consumed time acceptable. One participant (1.59%) believed it was highly acceptable. Moreover, three participants (4.76%) felt passable. Second, participants were asked to assess the number of questions in the pilot survey. Over 87.30% of the participants stated that the current number of questions was acceptable, and 3.17% believed it was highly acceptable (see Table 5-3). Four participants (6.35%) said it was just passable. Third, participants were also asked to evaluate the complexity of the survey questions in the pilot survey. Table 5-3 shows that more than 92.06% of the participants reported that the survey questions were easy to understand. Among them, 56 participants (88.89%) felt it was acceptable, and 2 (3.17%) believed it was highly acceptable. Four participants (6.35%) expressed that the complexity of

the questions was neither acceptable nor unacceptable. Additionally, the proportion of missing data for the respondent burden assessment was small and did not bias the results.

Table 5-3: *Respondent Burned Assessment*[5]

	Consumed Time	Number of Questions	Complexity of Questions
Absolutely not acceptable	-	-	-
Not acceptable	-	-	-
Neither acceptable nor not acceptable	4.76% (n = 3)	6.35% (n = 4)	6.35% (n = 4)
Acceptable	92.06% (n =58)	87.30% (n = 55)	88.89% (n = 56)
Highly acceptable	1.59% (n = 1)	3.17% (n = 2)	3.17% (n = 2)
Missing data	1.59% (n = 1)	3.17% (n = 2)	1.59% (n = 1)

5.6.2 Participants' Suggestions for Improvement on The Survey

Participants' suggestions for improving the survey are highly valued and considered. After rating the pilot survey's burden assessment, participants were asked to provide recommendations on how to enhance the survey. Their feedback, as shown in Table 5-4, is instrumental in improving and strengthening the design of a nationally administered survey in the future.

Twenty-three participants provided recommendations (see Table 5-4). Nearly half of them believed the survey was acceptable and feasible. However, some participants mentioned several disadvantages of this online pilot survey, such as the survey method and the number of questions in the pilot survey. One of the most common limitations of the online survey method is that it is commonly related to participants' computer literacy/skills. Six participants complained that it was not easy for them to answer survey questions on a computer or

5 Notes: Table 5-3 reports the participants' evaluation of the length of the questionnaire, the number of questions in the pilot survey, and the complexity of the survey questions. The descriptive analysis (per cent with frequencies (n)) is based on the unweighted data for the full sample. The full sample contains 63 survey participants who have completed or partially completed the pilot health service utilisation and patient experiences survey between 07 December 2021 and 31 May 2022.

smartphone. They suggested conducting an offline survey, like telephone or in-person questionnaires. The other four participants recommended using hard-copy questionnaires (see Table 5-4).

Furthermore, three out of sixty-three participants conducted the pilot survey via WeChat since they needed help to complete the online survey via a computer/smartphone. Although they did not provide further comments on the survey method, they might not have participated in this pilot survey if the option of a telephone survey was not offered to them. Another weakness the participants mentioned was the number of questions in the survey. Two participants proposed that reducing the number of questions could make it easier for late-life adults to complete the questionnaire (see Table 5-4).

Table 5-4: *Participants' Suggestions for Improvement on The Survey*

Participants' recommendations		Number of participants
No further comments	"Good work, I do not have any other comments."	11
Relate to the number of questions	"The number of questions should be reduced."	2
Relate to the survey method	"I prefer an offline survey, like a telephone or face-to-face survey."	6
	"Hard copy questionnaire will be more convenient."	4
Total		23

5.6.3 Evaluation of The Recruitment Method

This pilot survey recruited potential participants through multiple social group network invitations (including the Asian Community Organisations network, Chinese Community Organisations network, Nationwide Organisations network, Charitable Organisations network, and People network). It is advertised in media (including social media, web/digital media, posters, and word of mouth). This study used three evaluation questions (Q3 "*Did you hear the study from the following social groups?*", Q4 "*Are you or your family member/ friend who referred the study to you belonging to the social group?*", and Q5 "*Did you hear about the study from the following media?*") to assess the recruitment method used for the online pilot survey. Evaluation questions Q3 and Q5 allow multiple-choice responses. Namely, participants may be counted multiple times if they have chosen multiple options or given more than one answer. Thus, the unit per person count instead of person was introduced to present frequency counts for these answers.

5.6.3.1 Using social group networks as a recruitment platform

Participants' answers to the evaluation question Q3 provided an overview of using social group networks as a recruitment platform for the online pilot survey. These social groups include Asian/Chinese community organisations in the Auckland region (i.e., *The Asian Network Incorporated (TANI)*, and *Chinese New Settlers Services Trust (CNSST)*), nationwide Asian/Chinese organisations (i.e., *Asian Family Services*, and *New Zealand Chinese Association (NZCA)*), charitable organisations (i.e., *Age Concern New Zealand*), people networks (i.e., *Local Chinese Communities in the Auckland region*), as well as WeChat and/or Facebook groups participants belong to. Table 5-5 displays the different social group networks from which participants received the survey information. Panel A of Table 5-5 reports the unweighted results for the full sample, while Panel B reports the unweighted results for the age and gender sub-sample.

Panel A of Table 5-5 shows that most participants received information about this study from local Chinese communities (68.25%) and the WeChat group they belong to (71.43%). CNSST and TANI were the third and fourth main social group networks that introduced the survey to participants. Other social group networks, such as Facebook group, Asian Family Services, and Age Concern New Zealand, played a minor role in recruiting potential participants for this pilot survey. Furthermore, two participants reported that they had not heard any information about this study from any social networks. Additionally, five participants answered that they had heard about the survey from social groups. The proportion of missing data is 7.94%. It does not have essential ramifications for the results.

A similar pattern can be found in the sub-sample (see Panel B of Table 5-5). For all age groups and gender sub-samples, local Chinese communities and the WeChat group are the most common social groups where participants received information about this study. Moreover, an interesting finding was that the sub-sample outcomes of female participants aged between 65 and 74 were more likely to respond to the survey invitation sent out by social group networks (see Panel B of Table 5-5).

Table 5-5: *Using Social Group Networks as Survey Participants Recruitment Platform*[6]

Panel A: Full sample (n = 63)

Social Groups	Number of responses (per person-count)	Percentage
Age Concern New Zealand	1	1.59%
Asian Family Services	1	1.59%
Chinese New Settlers Services Trust (CNSST)	11	17.46%
New Zealand Chinese Association (NZCA)	-	-
The Asian Network Incorporated (TANI)	9	14.29%
Local Chinese Community	43	68.25%
WeChat Group	45	71.43%
Facebook Group	3	4.76%
Others (Introduced by friends)	3	4.76%
None of all	2	3.17%
Missing data	5	7.94%

Panel B: Sub-samples that include male and female participants in each age group (aged 65 to 74, 75 to 84, or 85 and over).

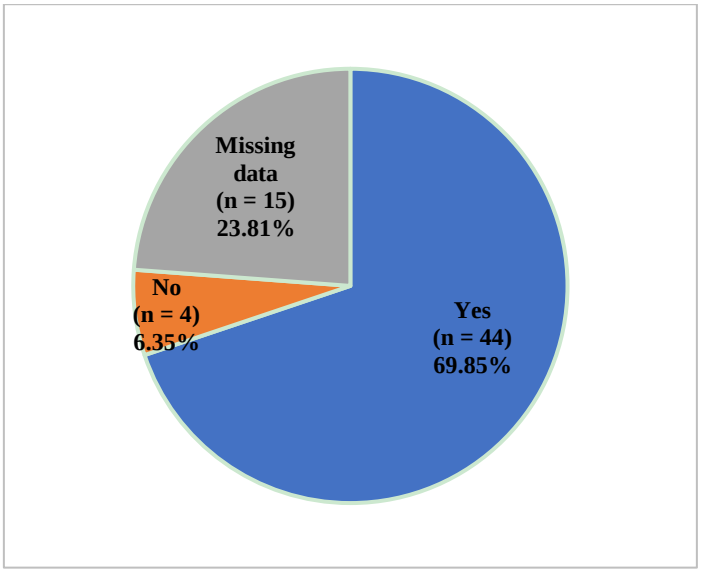
	65-74		75-84		85 and over	
	Male (n = 8)	Female (n = 31)	Male (n = 12)	Female (n = 6)	Male (n = 1)	Female (n = 5)
Age Concern New Zealand	-	1	-	-	-	-
Asian Family Services	-	1	-	-	-	-
CNSST	1	6	1	1	-	2
NZCA	-	-	-	-	-	-
TANI	-	4	2	3	-	-
Local Chinese Community	6	23	5	4	1	4
WeChat Group	4	23	9	4	1	4
Facebook Group	-	2	-	1	-	-
Others (i.e., Introduced by friends)	3	-	-	-	-	-
None of all	1	1	-	-	-	-
Missing data	-	3	2	-	-	-

The following question (evaluation question Q4) asked participants whether they or their family members/friends who referred the study to them belonged to any social group networks listed in Q3. Over 69.85% of participants confirmed they belong to specific social networks (see Figure 5.13). Only four participants (6.35%) stated they never belonged to any social group. One exciting study result was that 15 participants still needed to answer this question. It occupies 23.81% of the total survey participants, a non-

6 Notes: Table 5-5 reports the unweighted frequency of using social group networks as recruitment platform for the full sample and sub-sample. The participants could choose more than one social groups. The denominator is the unweighted estimate of population total.

ignorable amount of missing value for the data set. This phenomenon is worth further exploration as it may impact the design of a recruitment strategy for future studies.

Figure 5.*13*: *Belong to Social Group Networks*



5.6.3.2 Using media as a recruitment platform

As the study also used media to recruit potential survey participants, participants were asked which media source they had heard about the study from (evaluation question Q5). The media the study has used to recruit potential participants includes social media (i.e., *Facebook* and *WeChat Ads/post*), web/digital media (i.e., *Email* and *Skykiwi Ads*), posters that post at local community centres and local libraries in the Auckland region, and word of mouth. The outcomes of Table 5-6 provide an overview of using media as a recruitment platform for the online pilot survey.

Panel A of Table 5-6 explores that over 80.95% of participants acquired the survey information from "*word of mouth*" as the most significant source, include 3.17% stated they "*received the survey information from friends*." The second primary sources were the WeChat advertisement and the invitation posted on local communities' social media pages. The local library was another source participant gained the survey information from. Thirteen participants reported they had seen recruitment posters in the libraries. Other channels of information, including Facebook and SkyKiwi advertisements, made a trivial contribution to recruiting participants. Moreover, three participants reported they never heard any information about this study from any media.

When breaking the full sample data into sub-samples, this study found that 65 to 74-year-old late-life females were more likely to conduct the pilot survey once they received the information through media (see Panel B of Table 5-6). This outcome is very similar to the finding from the section 5.4.2.1.

Table 5-6: *Using Media as The Survey Participant's Recruitment Platform*[7]

Panel A: Full sample (n = 63)

	Number of responses (per person-count)	Percentage
Facebook Ads/post	1	1.59%
WeChat Ads/post	39	61.90%
Other social media	-	-
Email	6	9.52%
Local community	39	61.90%
Local Library	13	20.63%
Radio	1	1.59%
Skykiwi Ads	1	1.59%
TV	1	1.59%
Word of mouth	49	77.78%
Others (Introduced by friends)	2	3.17%
None of all	3	4.76%
Missing data	6	9.52%

Panel B: Sub-samples that include male and female participants in each age group (aged 65 to 74, 75 to 84, or 85 and over).

	65-74		75-84		85 and over	
	Male (n = 8)	Female (n= 31)	Male (n = 12)	Female (n = 6)	Male (n= 1)	Female (n = 5)
Facebook Ads/post	-	-	-	1	-	-
WeChat Ads/post	5	20	8	4	-	2
Email	1	5	-	-	-	-
Other social media	-	-	-	-	-	-
Local community	4	21	6	3	1	4
Local Library	2	6	3	2	-	-
Radio	-	1	-	-	-	-
Skykiwi Ads	-	1	-	-	-	-
TV	-	1	-	-	-	-
Word of mouth	8	23	10	5	1	4
Others	-	-	-	-	-	-
None of all	-	2	1	1	-	-
Missing data	-	3	3	-	-	-

7 Notes: Table 5-6 reports the unweighted frequency of using media as a recruitment platform for the full sample and sub-sample. The participants could choose more than one social group. The denominator is the unweighted estimate of the population total.

5.6.4 Summary of Evaluations of The Pilot Survey

Overall, participants believed this current pilot survey was acceptable and feasible. However, the current survey method still had a few issues that needed improvement. First, the online data collection method posed a considerable barrier for late-life adults to access the survey. Although other survey options, like in-person survey, were offered, COVID limited the possibilities of these other approaches; the evaluation results reflected the need to use the offline approach for some late-life participants. Especially for those who lacked computer literacy/skills. Second, the number of questions was "*too many*" for some participants.

Using social networks and media as a recruitment platform for a nationwide online survey is efficient. Social networks, such as WeChat groups, local Chinese community centres, and Chinese organisations, are the most efficient ways to refer the study information to Chinese migrants in Aotearoa NZ. Meanwhile, word of mouth, WeChat advertisements, and invitations posted on local communities' social media pages are the top three methods to recruit Chinese late-life participants online. Meanwhile, this study found that female participants aged between 65 and 74 were more likely to respond to the survey invitation from social group networks and media. Nevertheless, this study also discovered potential recalling errors of a question and a large proportion of missing data for evaluating the recruitment method (between 7.94% and 23.81%). These phenomena are worth further exploration as they may impact the design of a recruitment strategy for future studies.

5.7 Categorical Principal Components Analysis (CATPCA)

An essential component of the study was the examination of construct validity and internal consistency of section 2 (GP services utilisation) survey questions in the pilot survey using CATPCA method. In this section, all the interpretations are based on the CATPCA analysis of the original/unweighted data.

5.7.1 Determine Variables

This study meticulously applied CATPCA to thoroughly examine the internal consistency and construct validity of the section 2 survey questions (including Q2.1 to Q2.9) in this pilot survey. The decision to focus on section 2 (GP services utilisation) of the pilot survey was based on its comprehensive nature, encompassing all four categories of questions designed for the pilot survey (see Table 5-7).

As discussed in the previous section of the survey development (section 5.2), this study developed four categories of survey questions to collect participants' healthcare utilisation experiences. Hypothesis component one contains survey question(s) that focus on exploring whether potential survey participants have used healthcare in Aotearoa NZ during the non-pandemic and the COVID-19 pandemic. In section 2 of the pilot survey, survey question Q2.1 is in category one. Hypothesis component two comprises survey question(s) that aim to collect potential participants' evaluation of the healthcare quality they have received. In section 2 survey questions, Q2.2, Q2.3, Q2.4, Q2.5, Q2.6, and Q2.7 belong to this category. Hypothesis component three concentrates on investigating the effects, especially the negative effects, of the predisposing, enabling, and need factors on potential participants' healthcare utilisation. Hypothesis component four involves question(s) that purpose to discover the alternative(s) that potential participants have taken once they cannot use the healthcare service(s) when they need to. In section 2 of the pilot survey, Q2.8 belongs to the category three survey question, while Q2.9 is in category four.

However, this study excluded survey question Q2.10 ("*Does the COVID-19 pandemic prevent you from visiting or talking to a GP when you have a health problem?*") in CATPCA. Although Q2.10 is a category three survey question, it only focuses on the impact of the pandemic on participants' GP utilisation during the COVID-19 outbreak. It is also a cross-check question for survey question Q2.8. Specifically, Q2.10 can be used to cross-check the response for COVID-related barriers that are listed in Q2.8 options, such as option Q2.8- 10 ("*I could have seen a doctor via telehealth, but I wanted to see him/she in person*") and option Q2.8-12 ("*The GP service in the area was closed during the lockdown*").

Since Q2.8 and Q2.9 allowed participants to choose/give more than one option/answer, each option/answer was then analysed as an individual item when conducting CATPCA analysis. Thus, Q2.1 to Q2.9 comprise 30 items/variables in total (see Table 5-7). However, no participant chose options Q2.8-2 and Q2.9-1 when answering survey questions Q2.8 and Q2.9 (see section 5.4 in Chapter Five). This means the study cannot analyse these two items using the CATPCA method. As a result, 28 items/variables were finally analysed in CATPCA.

Table 5-7: *Hypothesis Components of Survey Questions in Section 2 of The Pilot Survey*

Hypothesis components of survey questions		Section 2 questions in the pilot survey
Component one	explore the patterns of potential survey participants' healthcare utilisation in Aotearoa NZ during non-pandemic and COVID-19 pandemic.	Q2.1 "S*een a GP or not?*"
Component two	collect potential participants' evaluations on the quality of healthcare they have received.	Q2.2 ("*Waiting time to see a GP.*") Q2.3 ("*Evaluating the waiting time.*") Q2.4 ("Rating - *GP providing understandable explanations.*") Q2.5 ("Rating - *involving in the healthcare-related decision-making process.*") Q2.6 ("Rating - *GP shows respect and dignity.*") Q2.7 ("*Confidence and trust in the GP or not.*")
Component three	investigate the effects of predisposing, enabling, and need factors on potential participants' utilisation of GP services, especially the adverse effects.	Q2.8 "B*arriers to see a GP (multiple responses possible).*" <u>Option/Response:</u> Q2.8-1 "*Chinese-speaking GP was unavailable.*" Q2.8-2 "*Services were expensive/ not affordable*" Q2.8-3 "*Had no transport to get there.*" Q2.8-4 "*Couldn't spare the time*" Q2.8-5 "*Lack of support person.*" Q2.8-6 "*Didn't want to be a burden.*" Q2.8-7 "*Unfamiliar with the GP services in Aotearoa NZ*" Q2.8-8 "*Couldn't get an appointment soon enough/at a suitable time.*" Q2.8-9 "*It was after-hours.*" Q2.8-10 "C*ould see a doctor via telehealth, but I wanted to see him/her in person.*" Q2.8-11 "*Couldn't get in touch with the doctor*" Q2.8-12 "*The GP service in the area was closed during the lockdown.*" Q2.8-13 "*Other (specify.)*" Q2.8-14 "*Don't apply.*" (which means have not experienced any barriers to visiting a GP service)

		Q2.8-15 "*Don't know how to answer the question*." Q2.8-16 "*Refuse to answer*."
Component four	discover the alternative(s) that potential participants have taken once they cannot use the healthcare service(s) when needed.	Q2.9 "*Alternative healthcare when unable to see a GP (multiple responses possible).*" <u>Option/Response:</u> Q2.9-1 "*Nothing*" Q2.9-2 "*Went to see the GP at a later date*." Q2.9-3 "*Went to an Emergency Department at a public hospital*." Q2.9-4 "*Went to an after-hours or Accident & Medical centre*." Q2.9-5 "*Phoned an ambulance*," Q2.9-6 "*Went to other/alternative medical services (i.e., Chinese Traditional Medicine, Chinese Acupuncture, etc.).*" Q2.9-7 "*Phoned Healthline or another hotline for advice*." Q2.9-8 "*Something else (specify).*" Q2.9-9 "*Don't apply*." (which means have not experienced any barriers to visiting a GP service) Q2.9-10 "*Don't know how to answer the question*." Q2.9-11 "*Refuse to answer*."

5.7.2 Determine Principal Components

Determining principal components is a crucial step in data analysis. Only the first few principal components are sometimes used in principal component analysis (Dunteman, 1989). Thus, before conducting CATPCA, this section determined the number of principal components (dimensions) used to interpret the original data.

5.7.2.1 Determine the number of principal components

In CATPCA, principal components are eigenvectors of the data's covariance matrix (Gifi, 1990; Linting & van der Kooij, 2012). The eigenvalue is an essential scalar that transforms the eigenvector (Linting & van der Kooij, 2012). Both eigenvectors and eigenvalue can help to narrow noise in data and reduce over-fitting among highly correlated variables (Gifi, 1990; Jolliffe, 2002; Linting & van der Kooij, 2012). In statistics, an eigenvalue represents the number of variances in each item/variable that can be explained by a component (Denton et al., 2022; Jolliffe, 2002). Hence, it is a crucial index commonly used to determine the number of principal components (dimensions) retained in principal component analysis (Denton et al., 2022). According to the Kaiser criterion, eigenvalues more significant than one is a cut-off point for which principal components should be kept in the analysis (Kaiser,1960),

Unlike other statistical analysis method, CATPCA interprets the outcomes using biplots and scree plots (Gifi, 1990). These graphs show the degree of accounted-for variance (Gifi, 1990; Linting & van der Kooij, 2012). As a line plot of the eigenvalues of principal components (Cattell, 1996), a scree plot is another suggested procedure that is used to determine the number of statistically significant components (dimensions) to keep in the CATPCA (Denton et al., 2022). The eigenvalue for each principal component is displayed on the plot in a downward curve, ordering from largest to smallest. The "elbow" of the graph where the screen plot has a significant reduction in eigenvalue is often considered as the criterion for deciding the number of components (dimensions) that should be further interpreted (Denton et al., 2022).

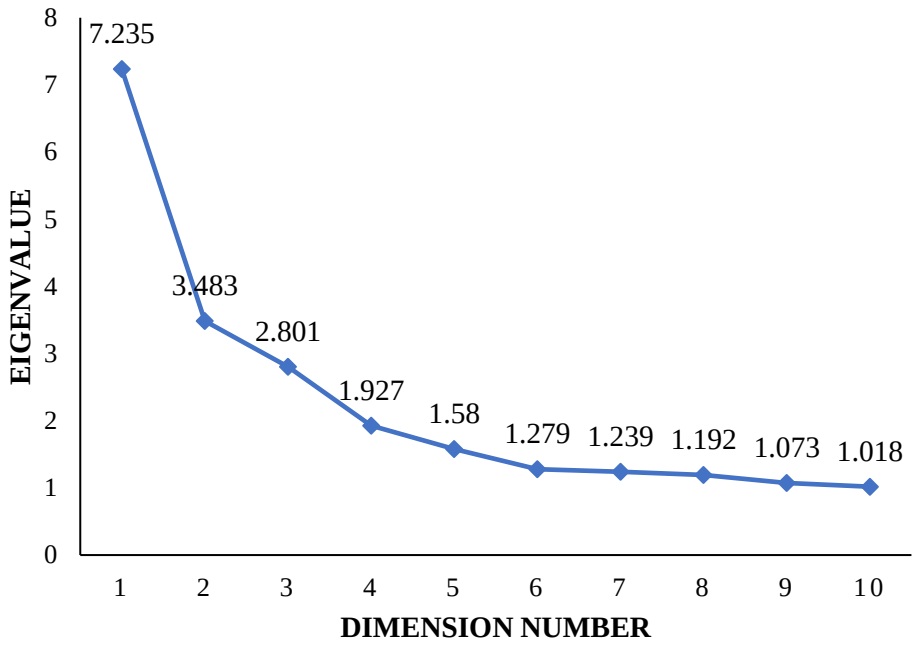
This study decided to use the first four components to run the CATPCA due to multiple considerations. Primarily, the choice had to align with the design of the survey question. As previously discussed in the Research Methodology and Method Chapter (Chapter Three), in alignment with survey purposes, four

hypothetical components were conceptualised to address the healthcare access and utilisation among the targeted population, particularly under the conditions imposed by the COVID-19 pandemic. These components include 1) patterns of participants' healthcare utilisation, 2) quality of healthcare, 3) barriers to healthcare utilisation, and 4) alternative healthcare-seeking behaviours. Secondly, the scree plots for this study (Figure 5.14) showed the eigenvalue was considerably reduced at components five or six, although these principal components have eigenvalues more significant than one. Namely, the outcomes of the scree plot suggest a construct of up to six components, as further component extraction may not be too beneficial (Denton et al., 2022). Moreover, Jolliffe (2002) argued that the select components should interpret over 50% of the total variances. The variances that a component explains can be calculated as:

$$percent\ of\ variances = eigenvalue\ \div number\ of\ variables$$

Thus, the first four components accounted for over 55.20% (= (7.235 + 3.483 + 2.801 + 1.927) ÷ 28 ×100%) of the variances in the original data (see Figure 5.14).

Figure 5.145: *Dimension Scree Plot*



Overall, by restricting the analysis to four components, this study struck a balance that maintains analytical clarity without oversimplifying the multifaceted experiences of the participants of this study (Costello & Osborne, 2019).

5.7.2.2 Determine the name of each principal component

The component loadings plot (Figure 5.15) is a valuable tool for interpreting each principal component/dimension ("*Component loadings*," 2022). The plot can also help determine the coefficients' magnitude and direction for the original variables. In statistics, the larger the absolute value of the correlation coefficient, the more critical the corresponding variable is in measuring the dimension (Fink, 2010; Jolliffe, 2002). Namely, the variables with relatively higher loadings on a dimension can better represent this dimension. Figure 5.15 shows the plot of component loadings. In CATPCA, component loadings correspond to Spearman's correlation coefficient among principal components (dimensions) and quantified transformed variables. A detailed correlation matrix between dimensions and variables was reported in Appendix D. The diagram summarises the magnitude and direction of the coefficients for the original items/variables in a two-dimensional space.

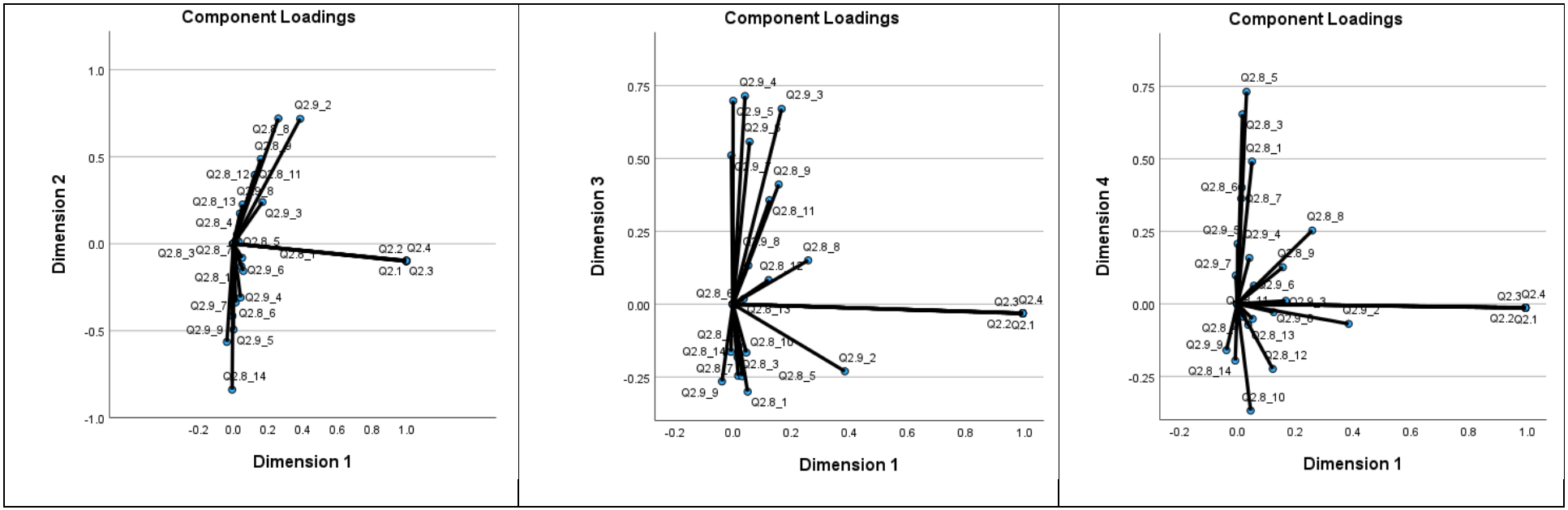
Figure 5.15 exposes that the first principal component (dimension) has a robust positive correlation (correlation ecoefficiency (r) = 0.994) with GP utilisation (Q2.1 "*seen a GP or not*") and evaluation of the care that participants have received (Q2.2 "*waiting time to see a GP*," Q2.3 "*evaluating the waiting time*," Q2.4 "rating - *GP providing understandable explanations*," Q2.5 "rating - *involving in healthcare-related decision-making process*," Q2.6 "rating - *GP shows respect and dignity*," and Q2.7 "*confidence and trust in the GP or not*"). The outcomes of Table 5-7 show that such survey questions mainly assess the quality of healthcare participants have utilised in Aotearoa, NZ, during the non-pandemic and the COVID-19 pandemic. Hence, dimension one was named the "quality of healthcare."

A strong positive association can be found between the second component/dimension and two variables, Q2.8-8 ("Couldn't *get an appointment soon enough/at a suitable time*," r = 0.720) and Q2.9-2 ("*Went to see the GP at a later date*," r = 0.717) (see Figure 5.15 & Table 5-7). Dimension two also shows weak positive correlations with Q2.8-9 ("*It was after-hours*," r = 0.486), Q2.8-11 ("Couldn't *get in touch with the doctor*," r = 0.396), and Q2.8-12 ("*The GP service in the area was closed during the lockdown*," r = 0.394). Thus, dimension two of this study primarily measures the unavailable or inaccessible barriers (enabling factors) that stop participants from using GP services. The name for dimension two could be "unavailable/inaccessible barriers. "

As Figure 5.15 illustrates, component/dimension three has strong to moderate positive associations with Q2.9-3 ("*Went to an Emergency Department at public hospital*," r = 0.670), Q2.9-4 ("*Went to an after-hours or Accident & Medical centre*," r = 0.714), Q2.9-5 ("*Phoned an ambulance*," r = 0.698), Q2.9-6 ("*Went to other/alternative medical services*," r = 0.557), and Q2.9-7 ("*Phoned Healthline or another hotline for advice*," r = 0.511) (see Figure 5.15 & Table 5-7). Therefore, dimension three is called "alternative healthcare-seeking behaviours" because most questions ask about the alternatives participants have taken when they cannot see a GP when needed.

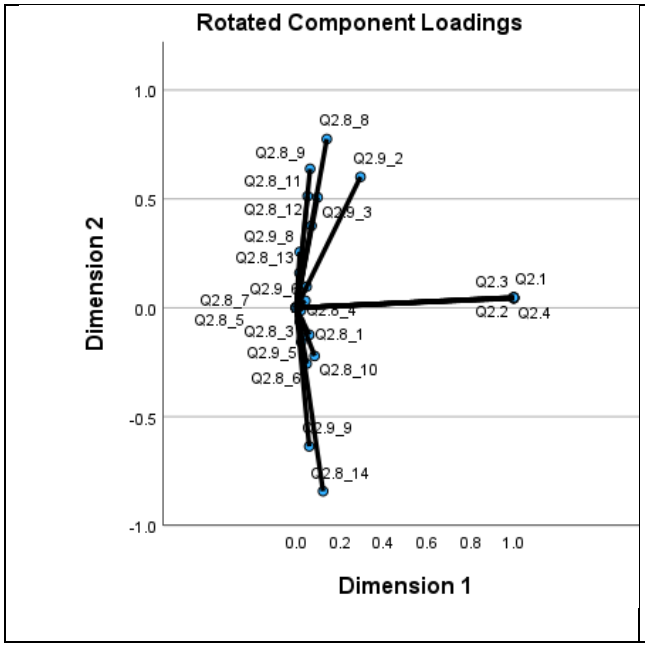
The fourth component/dimension has a strong to moderate positive relationship with Q2.8-3 ("*Had no transport to get there*," r = 0.654), Q2.8-5 ("*Lack of support person*," r = 0.731), and Q2.8-1 ("*Chinese-speaking GP was unavailable*," r = 0.491) (see Figure 5.15 & Table 5-7). Moreover, there is a weak positive correlation between dimension four and variables Q2.8-6, "Didn't *want to be a burden*" (r = 0.363), and Q2.8-7 ", *Unfamiliar with the GP services in Aotearoa NZ*" (r = 0.401). As a result, this dimension primarily examines factors such as language issues, family support, cultural beliefs, and knowledge of the local health system that may hinder participants' GP utilisation. According to Nyande et al. (2022), such factors are known as sociocultural barriers that are manufactured constructs (predisposing characteristics) originating from social norms and cultural values. Thus, the name for dimension four can be determined as "sociocultural barriers. "

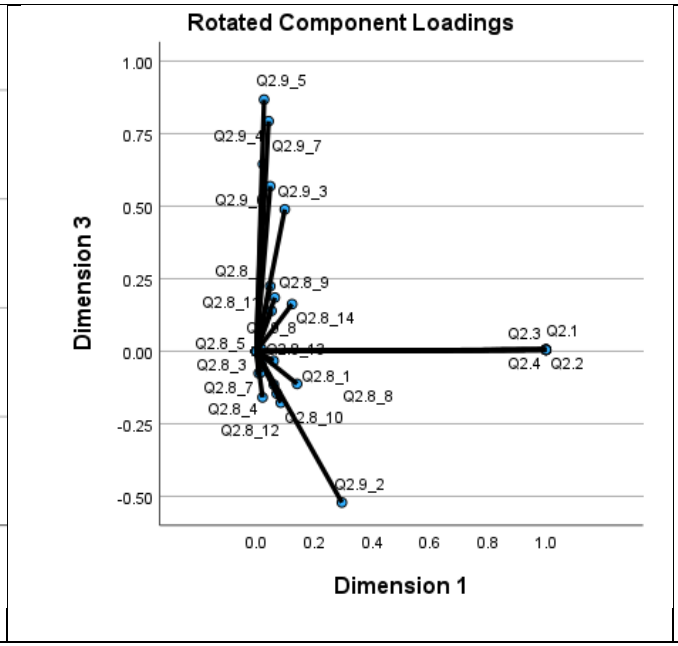
Figure 5.*15*: *Component Loadings Plot*[8]

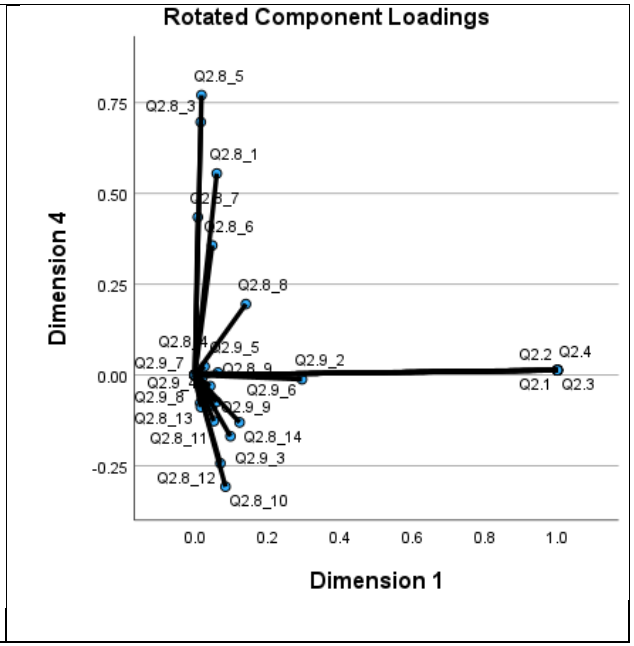


8 Notes: Figure 5.15 visually shows the correlation between each dimension (Dimension 1- Quality of healthcare, Dimension 2 - Unavailable/inaccessible, Dimension 3 – Alternative healthcare-seeking behaviours, and Dimension 4 - Sociocultural barriers) and the original variables. Variable principal normalization was used in CATPCA. This method optimises the association among variables ("*Categorical*", 2021). The rotated results were obtained using varimax rotation method with Kaiser normalization. By minimising the number of variables that have high loadings on each dimension, this rotation method can help to simplify the explanation of the dimensions ("*Categorical*", 2021).
The rule of thumb for correlation coefficient (r):

- $0 \leq |r| < 0.3$ = Negligible correlation
- $0.3 \leq |r| < 0.5$ = Weak correlation
- $0.5 \leq |r| < 0.7$ = Moderate correlation
- $0.7 \leq |r| < 0.9$ = Strong correlation
- $0.9 \leq |r| < 1$ = Very strong correlation
- $1 = |r|$ = Perfect correlation


Rotated Component Loadings
Dimension 2
Dimension 1
Q2.8_8
Q2.8_9
Q2.9_2
Q2.8_11
Q2.8_12
Q2.9_3
Q2.8_13
Q2.3
Q2.1
Q2.8_7
Q2.8_5
Q2.2
Q2.4
Q2.8_3
Q2.8_1
Q2.9_5
Q2.8_10
Q2.8_6
Q2.9_9
Q2.8_14


Rotated Component Loadings
Dimension 3
Dimension 1
Q2.9_5
Q2.9_7
Q2.9_3
Q2.8_9
Q2.8_14
Q2.3
Q2.1
Q2.4
Q2.2
Q2.8_1
Q2.8_8
Q2.8_10
Q2.9_2


Rotated Component Loadings
Dimension 4
Dimension 1
Q2.8_5
Q2.8_1
Q2.8_7
Q2.8_6
Q2.8_8
Q2.9_5
Q2.9_2
Q2.2
Q2.4
Q2.9_6
Q2.1
Q2.3
Q2.9_9
Q2.8_14
Q2.9_3
Q2.8_10

Original Variables

No.	Items/questions	No.	Items/questions	No.	Items/questions
Q2.1	Have seen a GP	Q2.8-5	Barrier to see a GP - Lack of support person	Q2.9-2	An alternative when unable to see a GP - See the GP later
Q2.2	Waiting time (after the scheduled appointment time) to see a GP	Q2.8-6	Barrier to see a GP - Didn't want to be a burden	Q2.9-3	Alternative - Went to an Emergency Department at a public hospital
Q2.3	Evaluation of the waiting time	Q2.8-7	Barrier to see a GP - Unfamiliar with the services in Aotearoa NZ	Q2.9-4	Alternative - Went to an after-hours or Accident and Medical Centre
Q2.4	Understood GP's explanation of health conditions/treatments	Q2.8-8	Barrier to see a GP - Couldn't get an appointment soon enough	Q2.9-5	Alternative - Phoned an ambulance
Q2.5	Involved in decision-making	Q2.8-9	Barrier to see a GP - It was after-hours	Q2.9-6	Alternative - Went to other medical services
Q2.6	Be treated in a respect and dignity way	Q2.8-10	Barrier to see a GP - Could see a doctor via telehealth, but prefer to see the GP in person	Q2.9-7	Alternative - Phoned Healthline or another hotline for advice
Q2.7	Had confidence and trust in GP	Q2.8-11	Barrier to see a GP - Couldn't get in touch with the doctor	Q2.9-9	Alternative - not experienced any barriers
Q2.8-1	The barrier to seeing a GP - Chinese-speaking GP was unavailable	Q2.8-12	Barrier to see a GP - The GP service in the area was closed during the lockdown		
Q2.8-3	Barrier to see a GP - No transport	Q2.8-14	Not experienced any barriers		

5.7.3 Construct Validity

The CATPCA analysis method was used to measure the construct validity of the section 2 survey question in the pilot survey. Overall, this pilot survey's original items/variables show a valid feature of multidimensional instruments. Table 5-8 reports the strength of the component/dimension (eigenvalue) and the percentage of variances that can be explained by the component/dimension. Figure 5.15 shows the correlation between dimensions and the original variables. Appendix D represents a detailed correlation matrix between components (dimensions) and original variables.

Table 5-8: *CATPCA Model Summary*[9]

			Variance Accounted For	
Dimension		Cronbach's Alpha	Total Eigenvalue	Percent of Variance (%)
Dimension 1	**Quality of healthcare**	0.893	7.15	25.52
Dimension 2	**Unavailable/inaccessible barriers**	0.746	3.44	12.29
Dimension 3	**Alternative healthcare-seeking behaviours**	0.682	2.88	10.29
Dimension 4	**Sociocultural barriers**	0.523	1.99	7.10
Total		0.970[a]	15.46	55.20

As Table 5-8 shows, the total eigenvalue is 15.46. It illustrates that strength of the chosen components (dimensions) is good. Around 55.20% of the variances in the optimally scaled items can be accounted for by the four dimensions specified. The eigenvalue for dimension one is 7.15. It can account for over a quarter of the variance. Dimension two has an eigenvalue of 3.44, which can interpret almost 12.29% variance within the construct. The eigenvalue for dimension three is 2.88. Thus, approximately 10.29% variance can be explained by this dimension. Furthermore, with an eigenvalue of 1.99, about 7.10% variance within the construct was illustrated by dimension four (See Table 5-8).

9 Notes: Table 5-8 reports the internal consistency (Cronbach's Alpha) for the specified dimensions and the strength of the component/dimensions (Eigenvalue).
a. Total Cronbach's Alpha is based on the total Eigenvalue.

As described above (in section 5.7.2.2, Figure 5.15), dimension one (quality of healthcare) has a robust and positive correlation with original variables Q2.1, Q2.2, Q2.3, Q2.5, Q2.5, Q2.6, and Q2.7, which described the quality-of-care participants received from GPs. Dimension three (alternative healthcare-seeking behaviours) has a strong to moderate positive relationship with variables Q2.9-3, Q2.9-4, Q2.9-5, Q2.9-6, and Q2.9-7, which described the alternatives participants have taken when they cannot access GP services. As a result, dimension one and dimension three have good construct validity. Moreover, dimension four (sociocultural barriers) has a strong to moderate positive relationship with Q2.8-3, Q2.8-5, and Q2.8-1, which described transportation issues, family support, and language issues, and a weak positive relationship with Q2.8-6, and Q2.8-7, which described cultural beliefs and knowledge towards local health system. Hence, the construct validity in this dimension is acceptable. However, the construct validity in dimension two (unavailable/inaccessible barriers) needs to be further improved. According to the outcomes of Figure 5.15, there was a strong positive relationship between dimension two and variables Q2.8-8, "Couldn't *get an appointment at a suitable time*," and Q2.9-2 "*, Went to see the GP at a later date*". This dimension also has a firm to moderate negative relationship with Q2.8-14, "Don't *apply*," and Q2.9-9 ", Don't *apply*." However, it is weakly associated with variables Q2.8-9, Q2.8-11, and Q2.8-12, which described the unavailable GP services for participants.

5.7.4 Internal Consistency Reliability

Table 5-8 reports the internal consistency coefficient (Cronbach's Alpha) for each component (dimension) specified in this study, as well as the overall Cronbach's Alpha for all four components (dimensions). According to the results in Table 5-8, dimension one has the most vital internal consistency of the items in the scale (Cronbach's Alpha (α) = 0.893). Dimension two also shows a solid internal consistency. Cronbach's Alpha for the second dimension is 0.746. The internal consistency for dimension three (α = 0.682) is questionable. Additionally, a poor internal consistency can be found in dimension four (α = 0.499).

5.7.5 Summary of The CATPCA analysis

CATPCA was applied to assess the construct validity and internal consistency among the survey questions in section 2 of the pilot survey. The model measured twenty-eight original variables with four dimensions.

Dimension one contains variables related to the quality of GP healthcare. Dimension two involves variables related to unavailable/inaccessible barriers to using GP services. Dimension three includes variables related to alternatives for GP healthcare. Dimension four comprises variables related to sociocultural barriers to using GP services.

A robust internal consistency and a reliable construct validity can be found in dimension one - healthcare quality. Dimension two - unavailable/inaccessible barriers - has a solid internal consistency but needs more construct validity. The internal consistency and construct validity for dimension three (alternative healthcare-seeking behaviours) must be more questionable. Moreover, poor internal consistency and weak construct validity can be discovered in dimension four (sociocultural barriers). These results suggested potential improvements in the questionnaire design of these question items are needed. For example, adding new dimensions in future research. Further elaboration on findings and instrument design is explored in-depth in the Discussion Chapter.

5.8 Summary

Based on the key concerns that emerged in phase one of the study, phase two modified the existing MOH health survey and developed a "pilot survey on healthcare utilisation" of recently arrived Chinese late-life migrants in Aotearoa NZ in non-pandemic and COVID-19 pandemic circumstances. Overall, this pilot survey is acceptable and feasible. The higher survey completion rate (88.73%) indicates that the survey findings for phase two of the study are reliable and valid.

Based on participants' evaluations, the pilot survey for this study is acceptable and feasible. However, some participants recommend using an off-line survey method with few questions. Meanwhile, using social networks and media as a recruitment platform for a nationwide online survey is efficient. Female participants aged 65 and 74 were likelier to respond to the survey invitation from social group networks and media. Nevertheless, this study also discovered unreliable and missing data for evaluating recruitment methods. These phenomena are worth further exploration in Chapter Seven, as they may impact the design of a recruitment strategy for future studies.

Additionally, CATPCA was applied to assess the construct validity and internal consistency among the survey questions in section 2 of the pilot survey. The model measured 28 original variables in 4 dimensions. Overall, the construct validity and the internal consistencies are strong in dimension one (quality of healthcare). Dimension two (unavailable/inaccessible barriers) has a solid internal consistency but questionable construct validity. For dimension three (alternative healthcare-seeking behaviours), the internal consistency and construct validity are both questionable. Poor internal consistency and weak construct validity can be discovered in dimension four (sociocultural barriers). These outcomes help identify the validity of the survey questions. It can then help recognise which questions should be revised or removed from a formal survey in future studies.

CHAPTER 6: PHASE TWO FINDINGS

Part two - Statistical Outcomes, Analysis & Interpretation of The Pilot Survey

6.1 Introduction

This chapter explores the survey findings based on the statistical analysis of participants' healthcare services utilisation experiences. Although the current study conducted a pilot survey, a higher survey completion rate indicates that the collected data is a valued analysis component. Due to the small sample size, the findings for phase two of the study pose an exploratory analysis of the developed instrument. The presented results follow the initial construct of the NZ health survey and might not be generalizable to the whole study population (recently arrived Chinese late-life migrants).

This chapter first outlines the patterns of participants' healthcare utilisation. It then describes and interprets survey findings based on the descriptive statistical analysis of 63 valid survey responses. According to the outcomes of CATPCA discussed in Section 5.7, for primary healthcare, the questions in this pilot survey can be determined into four principal dimensions, which include 1) *quality of healthcare*, 2) *unavailable/inaccessible barriers*, 3) *alternative healthcare-seeking behaviours*, and 4) *sociocultural barriers*. Hence, to explore participants' experiences of healthcare utilisation in Aotearoa NZ, the descriptive statistical outcomes are grouped into three main categories: 1) quality of healthcare (Domain one), 2) barriers to healthcare utilisation (comprising two sub-group: sociocultural barrier (Domain 4) and unavailable/inaccessible barriers (Domain 2)), and 3) alternative healthcare-seeking behaviours (Domain 3). These descriptive statistics can help to understand this cohort of participants' healthcare access and utilisation experiences and further explore their recommendations for improving healthcare utilisation. Combined with the socio-demographic information described in Chapter Five, this chapter finally explains the inferential statistics based on the binary logistic regression analysis. The logistic regression outcomes can help to comprehend the effects of participants' predisposing and enabling factors on their healthcare utilisation.

This chapter aims to justify objective interpretations. The interpretations of the findings are concentrated on accurately reflecting the statistical analysis of participants who answered the survey questions and their representative study population using the weighted method. Survey findings are further used in conjunction

with interview analyses in Chapter Four as a form of triangulation to aid the overall discussion in Chapter Seven.

6.2 Healthcare Services Utilisation Experiences – Descriptive Statistics

As discussed in previous chapter (Chapter Five), this pilot survey used 58 questions (multiple choice and short answer questions) to collect participants' healthcare utilisation experiences. These survey data covered the utilisation of primary healthcare (i.e., GP services, nursing care, and after-hours clinics), the use of secondary and tertiary healthcare systems (i.e., public hospitals, private hospitals, emergency departments (ED), and medical specialists), other healthcare (i.e., Chinese traditional medical doctor, Chinese acupuncturist, and so on), and COVID related healthcare and support services. The purpose of collecting such data was to understand survey respondents' healthcare access and utilisation in Aotearoa NZ, during non-pandemic and COVID-19 pandemic circumstances. Furthermore, these data also contribute to exploring participants' views regarding improving healthcare utilisation.

In this section, all descriptive statistics were yielded based on the unweighted and weighted data of the survey samples (n = 63). The interpretations of the descriptive statistics include descriptively summarising common characteristics and patterns deduced from the data (frequency distribution) and reporting the weighted mean/average for the continuous data (especially the waiting time for using healthcare services). The numerical interpretation undertaken in this section focuses on the weighted results, as this study used the weighting method to minimise the potential sample imbalance bias.

Survey questions that relate to the barriers to accessing/using healthcare services and participants' alternative healthcare-seeking behaviours allowed multiple-choice responses. As a result, participants may be counted multiple times if they have chosen more than one option or given more than one answer. Thus, the unit of analysis is "per person-count" instead of "person" for these answers. These analysis units are also reflected in the graphs and tables. To calculate the frequency percentage for these answers, the denominator used was the weighted estimate of the population total. In the descriptive analysis, all results were based on the weighted data, which was adjusted for potential bias of survey samples compared to the study population.

6.2.1 Patterns of Participants' Healthcare Utilisation

Before analysing and interpreting the participants' experiences of healthcare access and utilisation in Aotearoa NZ, this chapter first describes the patterns of potential participants' healthcare utilisation. This survey used ten questions to explore potential participants' utilisation of primary healthcare services (including Q1.1 *primary health centres*, Q2.1 *General practitioner (GP) clinics*, Q3.1 *nursing services at a GP clinic or medical centre*, Q4.1 *after-hours medical centres*), secondary and tertiary healthcare services (involving Q5.1 *public hospital services*, Q6.1 *private hospital services*, Q7.1 *emergency departments (ED) at a public hospital*, and Q8.1 *medical specialist services*), other healthcare services (Q9.1 *services other than the official healthcare*), and COVID-19-related healthcare/support services (Q10.1). Question Q8.1 only related to participants who had visited medical specialists as outpatients in a hospital. The descriptive statistics relating to the participants' healthcare utilisation patterns were derived and displayed in Table 6-1. Overall, participants have utilised all formal and informal healthcare services in Aotearoa NZ, during the non-pandemic and the COVID-19 pandemic circumstances.

Table 6-1: *Patterns of Participants' Healthcare Utilisation*[10]

Panel A: Primary healthcare services utilisation (n = 63)

	Unweighted Percent	Weighted Percent	SEM*
Primary healthcare services (Q1.1)			
Yes	95.24%	92.60%	6.0%
No	1.59%	0.68%	
Don't know	1.59%	6.25%	
Missing data	1.59%	1.26%	
General practitioner (GP) services (Q2.1)			
Yes	96.83%	97.48%	1.4%
No	1.59%	1.26%	
Don't know	N/A	N/A	
Missing data	1.59%	1.26%	
Nurses at GP clinics (Q3.1)			
Yes (be part of a GP consultation)	90.48%	93.01%	4.0%
No	6.35%	4.47%	
Don't know	1.59%	1.26%	
Missing data	1.59%	1.26%	
After-hours medical care services (Q4.1)			
Yes	22.22%	22.66%	7.3%
No	73.02%	74.13%	
Don't know	3.17%	1.94%	
Missing data	1.59%	1.26%	

*SEM represents the Standard Error of proportion

Panel B: Secondary and tertiary healthcare services utilisation (n = 63)

	Unweighted Percent	Weighted Percent	SEM*
Public hospital services (Q5.1)			
Yes	44.44%	31.08%	5.9%
No	53.97%	67.66%	
Don't know	N/A	N/A	
Missing data	1.59%	1.26%	
Private hospital services (Q6.1)			
Yes	3.17%	2.53%	8.9%
No	93.65%	90.75%	
Don't know	1.59%	6.25%	
Missing data	1.59%	1.26%	
Emergency department (ED) services (Q7.1)			
Yes	85.71%	86.20%	6.9%
No	11.11%	7.08%	
Don't know	1.59%	6.25%	
Missing data	1.59%	1.26%	
Medical specialists [a] (Q8.1)			
Yes	39.68%	28.45%	8.8%
No	53.97%	67.21%	
Don't know	1.59%	1.26%	
Refuse to answer	1.59%	1.26%	
Missing data	3.17%	1.81%	

a. This study just considered medical specialists that participants have seen as an outpatient in a hospital or at their private rooms or clinic.

10 Notes: Table 6-1 reports unweighted and weighted frequencies of participants' utilisation of primary, secondary/tertiary, other care, and COVID-related healthcare/support services in Aotearoa NZ. The full sample contains 63 recently arrived Chinese late-life migrants who have completed or partially completed the pilot survey, between 07 December 2021 and 31 May 2022. This study used the poststratification weighting to minimize the sample imbalance bias. The SEM was calculated based on the weighted data.

Panel C: Other healthcare services utilisation (n = 63)

	Unweighted Percent	Weighted Percent	SEM*
Other healthcare services [b] (Q9.1)			
Yes	93.65%	95.53%	2.9%
No	3.17%	2.52%	
Don't know	1.59%	0.68%	
Missing data	1.59%	1.26%	

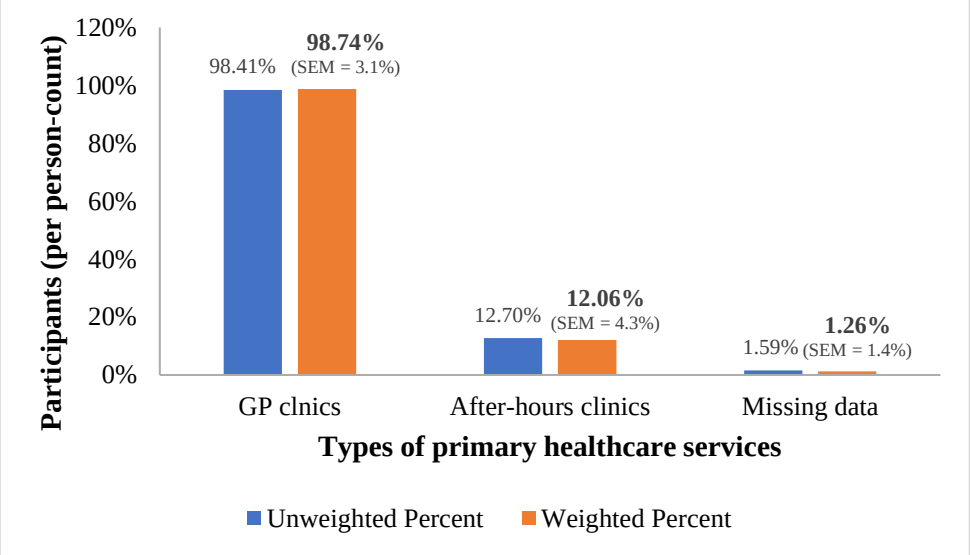
b. They are informal care services that are other than formal primary, secondary, and tertiary care services.

Panel D: COVID-related healthcare/support services utilisation (n = 63)

	Unweighted Percent	Weighted Percent	SEM*
COVID-related healthcare and/or support services (Q10.1)			
Yes	79.37%	82.22%	7.3%
No	15.87%	10.38%	
Don't know	1.59%	6.25%	
Missing data	3.17%	1.94%	

According to the outcomes of panel A of Table 6-1, around 92.60% of the weighted participants visited a primary healthcare service when feeling unwell. Less than 1% of the weighted participants have never used such services since arriving in Aotearoa, NZ. Meanwhile, panel A of Table 6-1 also shows a distribution of different types of primary services. Most participants said they had visited GPs (97.48%) and nurses at a GP clinic (93.01%). In contrast, just 22.66% have visited after-hours medical centres. To cross-check the reliability of the collected data, this pilot survey asked the same questions in different ways. Specifically, survey question Q1.2 (*types of primary healthcare services participants have used*) has developed to cross-check Q2.1 *(GP services utilisation*) and Q4.1 *(after-hours healthcare utilisation*). Comparing the outcomes of Q1.2 (see Figure 6.1) and Q2.1 (see panel A of Table 6-1), this study found the weighted percentage of GP services utilisation is very similar (98.74% and 97.48%, respectively). However, a significant gap can be found between the results of Q1.2 and Q4.1. Figure 6.1 indicates that around 12.06% of the weighted participants have used after-hours medical care (Q1.2), while panel A of Table 6-1 shows that about 22.66% have visited such services (Q4.1).

Figure 6.*1*: *Types of Primary Healthcare Services Participants Have Utilised (Q1.2)*



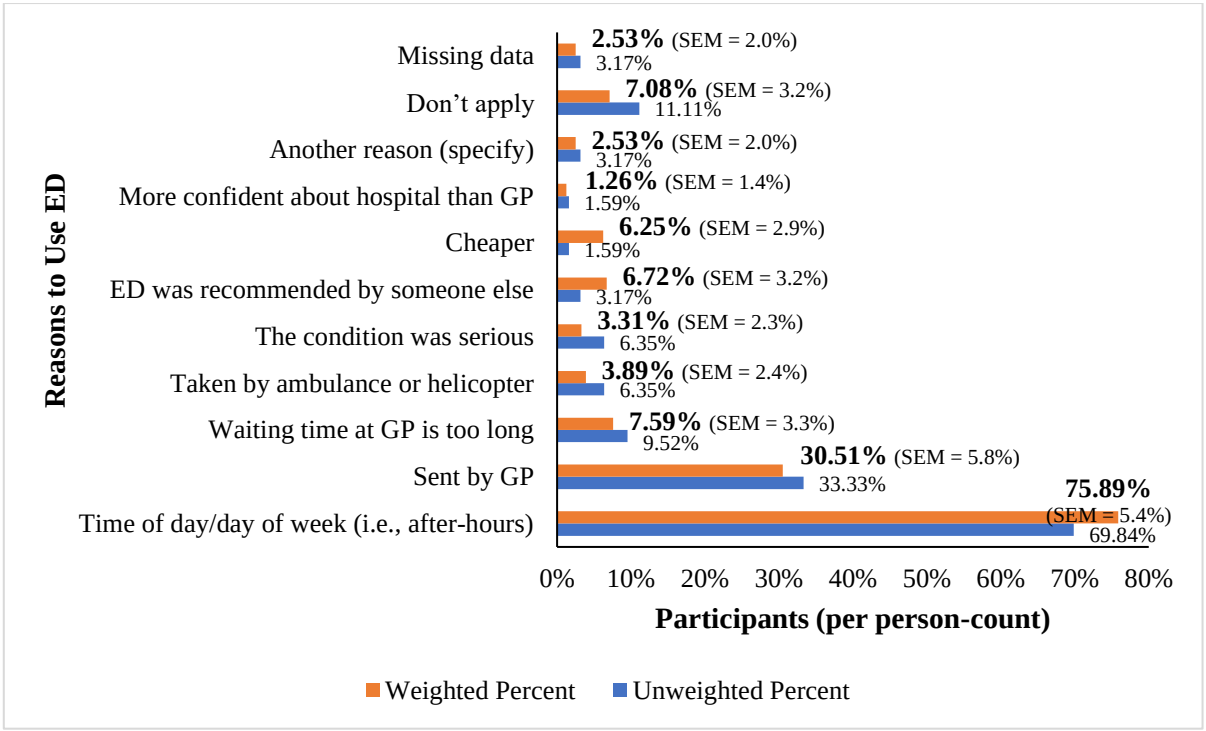
Unlike primary healthcare utilisation, fewer participants used secondary/tertiary health services in Aotearoa NZ, during the non-pandemic and the COVID-19 pandemic circumstances (see panel B of Table 6-1). The weighted percentage of public hospital facility and medical specialist utilisation is 31.08% and 28.45%, respectively. Meantime, merely 2.53% of the weighted participants have used private hospital services in

Aotearoa NZ. However, the utilisation of ED services shows a different picture. 86.20% of the weighted participants mentioned they had visited an ED. This is three times more than those who have visited an after-hours medical clinic (see panels A and B of Table 6-1).

A follow-up question (Q7.2) asked why participants used an ED service. According to the outcomes of Figure 6.2, the most frequently mentioned reason for visiting an ED was the time of the sickness. Almost 76% of the weighted participants said they used ED services because it was after-hours and other clinics/medical centres were closed. Figure 6.2 also indicates that one-third of the weighted participants were sent to an ED by their GPs due to their health conditions. Other reasons listed in Figure 6.2 play a minor role; the weighted frequencies range from 7.59% to 1.26%.

Additionally, two participants (2.53% of the weighted participants) provided their own stories. One person has visited the ED due to "*having a fever at night*." Another one was sent to the ED because of "*passing out*" when waiting outside the operating room.

Figure 6.2: *Reasons Participants Have Used ED Services (Q7.2)*



Panel C of Table 6-1 shows that most weighted participants (95.53%) have visited other healthcare services in Aotearoa NZ. Only 2.52% said they had never used such services. Based on the outcomes of Q9.1, Table 6-2 displays the different types of other healthcare services participants have used. It demonstrates that pharmacies (65.77%) and Chinese massage therapy clinics (62.60%) were individuals' most common services, followed by traditional Chinese medical clinics, Chinese acupuncture, and dental clinics. Moreover, almost 18.33% of the weighted participants used physiotherapy clinics, 6.22% utilised optometry services, and 1.94% visited chiropractic clinics.

Table 6-2: *Other Healthcare Services Participants Have Utilised (Q9.1)*[11]

Other caregivers (*allow to give more than one answer*)	Unweighted Percent	Weighted Percent	SEM*
Pharmacist	69.84%	70.44%	6.0%
Chinese massage therapist	63.49%	66.10%	6.2%
Chinese traditional medical doctor	47.62%	56.70%	6.4%
Chinese acupuncturist	42.86%	42.49%	6.3%
Dentist	28.57%	30.04%	5.7%
Physiotherapist	28.57%	19.50%	5.0%
Optician or optometrist	9.52%	6.22%	2.9%
Chiropractor	3.17%	2.53%	1.8%
Dietitian	-	-	-
Occupational therapist	-	-	-
Osteopath	-	-	-
Psychologist or counsellor	-	-	-
Social worker	-	-	-
Don’t know	1.59%	1.26%	1.1%
Missing data	1.59%	1.26%	1.1%

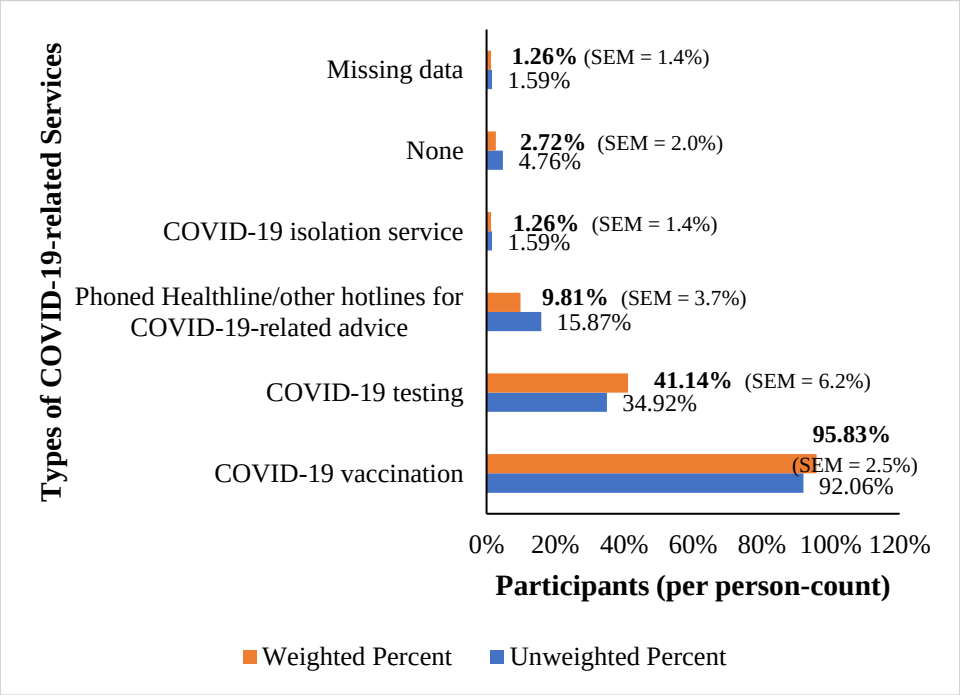
Furthermore, Panel D of Table 6-1 shows 82.22% of the weighted participants have utilised COVID-related healthcare/support services, while 10.38% have not. A follow-up question (Q10.2) asked about the types of services participants used during the COVID-19 pandemic (2020 - 2022). According to the outcomes of Figure 6.2, COVID-19 vaccination was the most popular service participants used (95.83%). The COVID-19 testing

11 Notes: Table 6-2 reports the unweighted and weighted frequencies of other care services participants visited in Aotearoa NZ. Participants are allowed to choose more than one answer. The denominator used to calculate the frequency percentage is the weighted estimate of the population total.
* SEM represents the Standard Error of proportion. It was calculated based on the weighted data.

service was another commonly used service. More than 41.14% of the weighted participants have visited the testing service since the pandemic outbreak in 2020.

Moreover, 9.81% indicated they had phoned Healthline and/or other hotlines for COVID-19-related advice. Around 1.26% reported using a COVID-19 isolation service. Furthermore, 2.72% confirmed they had not used any COVID-related services. This result is much lower than the outcomes found in question Q10.1.

Figure 6.3: *COVID-19-related Healthcare/Support Services Participants Have Utilised (Q10.2)*



Overall, the most common service participants visited was the primary healthcare services, especially GP ones. The other healthcare services, such as pharmacies and traditional Chinese treatments, were also commonly used by participants. Participants were less likely to utilise the secondary and tertiary healthcare services except for the ED services. Moreover, COVID-19-related healthcare/support services were popular during the pandemic. Additionally, a small percentage of weighted participants (between 6.25% and 0.68%) needed to know whether they used healthcare services in Aotearoa NZ. However, one crucial finding discovered from Table 6-1 is that no one chose "*don't know*" when answering whether they have visited a GP (Q2.1) and a public hospital (Q5.1). The following section further explores the participants' healthcare utilisation experiences at different levels of health services.

6.2.2 Quality of Healthcare

To better understand participants' healthcare utilisation experiences, the pilot survey asked them to evaluate the healthcare quality they received. Twenty-one survey questions were developed to collect data related to the *quality of primary healthcare* (including overall primary care (Q1.4 – Q1.9), GP care (Q2.2 – 2.7), nursing care (Q3.2)), *ED care* (Q7.3 – Q7.5), and *COVID-19-related healthcare* (Q10.3 – Q10.6, & Q10.9). These questions include yes-no questions, scaling questions, and multiple-choice questions. For multiple-choice questions, participants were allowed to choose more than one answer.

6.2.2.1 Waiting time

This study used nine survey questions to investigate participants' waiting experiences at primary, secondary, and COVID-related healthcare/support services. Q1.4 (*satisfied with current opening hours*) and Q1.5 (*additional opening hours if needed*) focussed on participants' evaluation of the opening hours of primary medical centres. Q2.2 (*waiting time for your last visit at a GP clinic*) and Q2.3 (*rating the waiting time at the GP clinic*) targeted to rate the waiting time at a GP clinic. Q7.3 (*waiting time for your last visit to ED*), Q7.4 (*rating staff's explanations about the waiting time*), and Q7.5 (*rating the waiting time at ED*) were interested in participants' waiting experiences at ED. Q10.3 (*waiting time for your last visit to COVID-19-related services*) and Q10.4 (*rating the waiting time at COVID-19-related services*) concentrated on waiting time at a COVID-related healthcare/support service. Most participants were satisfied with the waiting time at primary healthcare services and COVID-related healthcare/support services. In contrast, they were unsatisfied with the waiting time for ED services.

Primary healthcare services

According to the finding from Figure 6.4, approximately 88.81% of the weighted participants were satisfied with the current opening hours of the primary healthcare service they visited. Only about 9.25% were not satisfied. Furthermore, around 0.68% "*don't know*" how to answer the question (Q1.4).

Figure 6.4: *Satisfaction Over Current Opening Hours of Primary Healthcare Services (Q1.4)*[12]

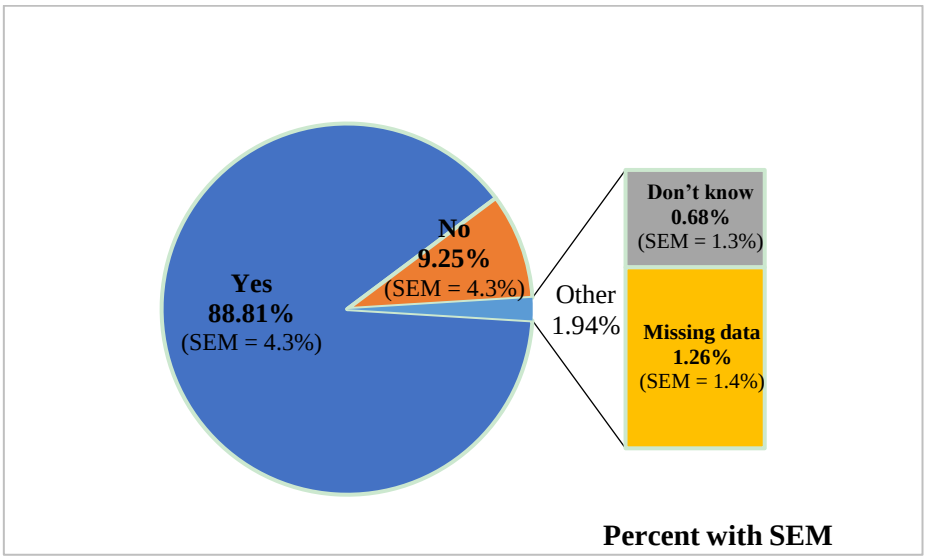
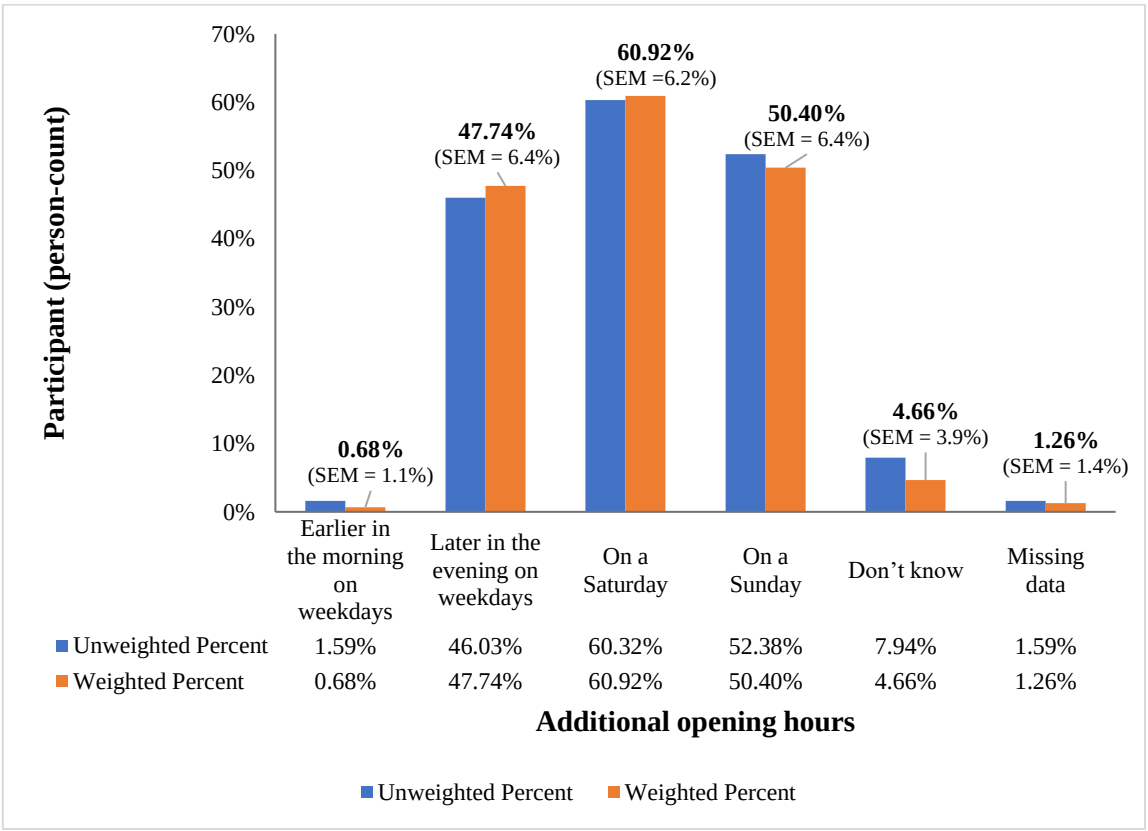


Figure 6.5: *Additional Opening Hours for Primary Healthcare Services (Q1.5)*



12 Notes: Figure 6.4 displays participants' satisfaction over the current opening hours of primary healthcare services. The SEM was calculated based on the weighted data. The unweighted satisfaction is "Yes" = 90.48%, "No" = 6.35%, "Don't know" = 1.59%, and "Missing data" = 1.58%.

When asked to specify the additional opening hours that would make it easier to visit the primary healthcare service (Q1.5), over 60.92% of the weighted participants chose "*on a Saturday, or longer hours on a Saturday*" (see Figure 6.5). Followed by "*on a Sunday*" (50.40%) and "*later in the evening on weekdays*" (47.74%). Only 0.68% of the weighted participants preferred to see/speak to someone at the clinic "*earlier in the morning on weekdays (i.e., before 8 am).*"

GP Services

Participants' evaluations of waiting time at a GP clinic were displayed in Figures 6.6 (Q2.2) and 6.7 (Q2.3). Figure 6.6 shows that nearly 60% of the weighted participants saw a doctor within 5 to 15 minutes after the scheduled appointment. Approximately one-quarter of the weighted participants saw a doctor within 15 to 30 minutes. Around 12.33% saw a doctor at their appointment time. Only 3.20% waited more than 30 minutes before being seen by a doctor. Moreover, almost 80% of the weighted participants said they did not mind waiting, while over 20% reported they must wait (see Figure 6.7). Overall, the average weighted interval (based on the converted Likert scale of the waiting time) at a GP clinic was about 5 to 15 minutes after the scheduled appointment, which seems acceptable for most participants.

Figure 6.6: *Waiting time at a GP service (Q2.2)*

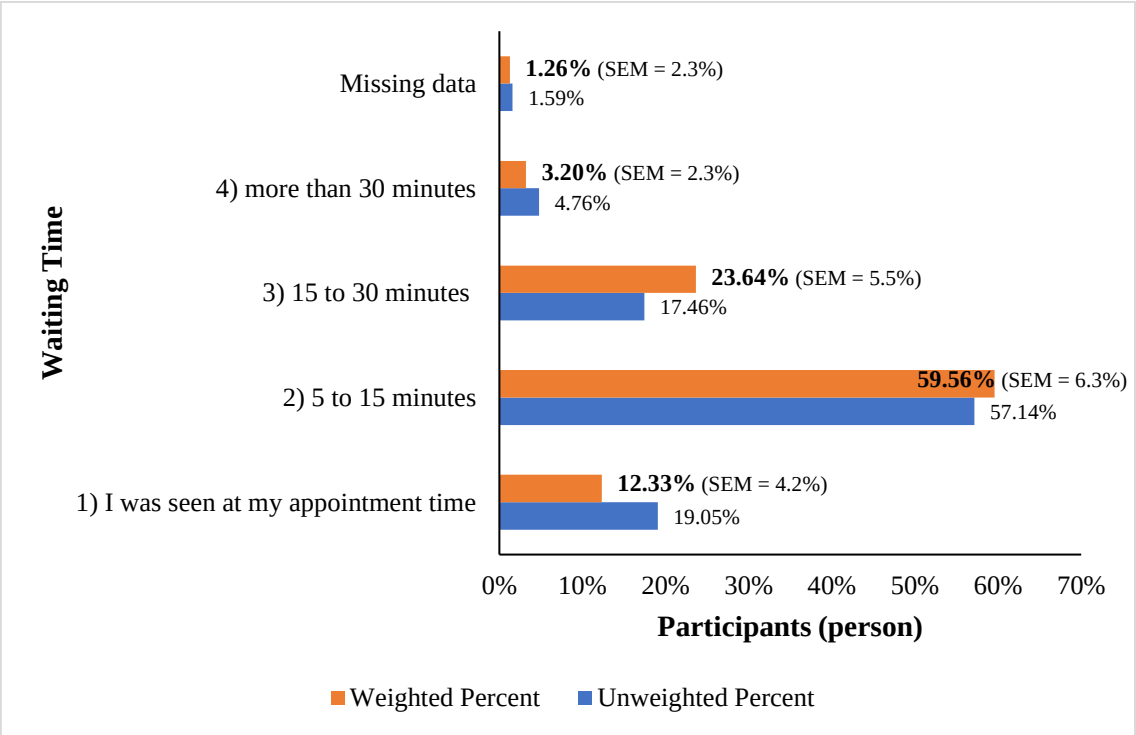
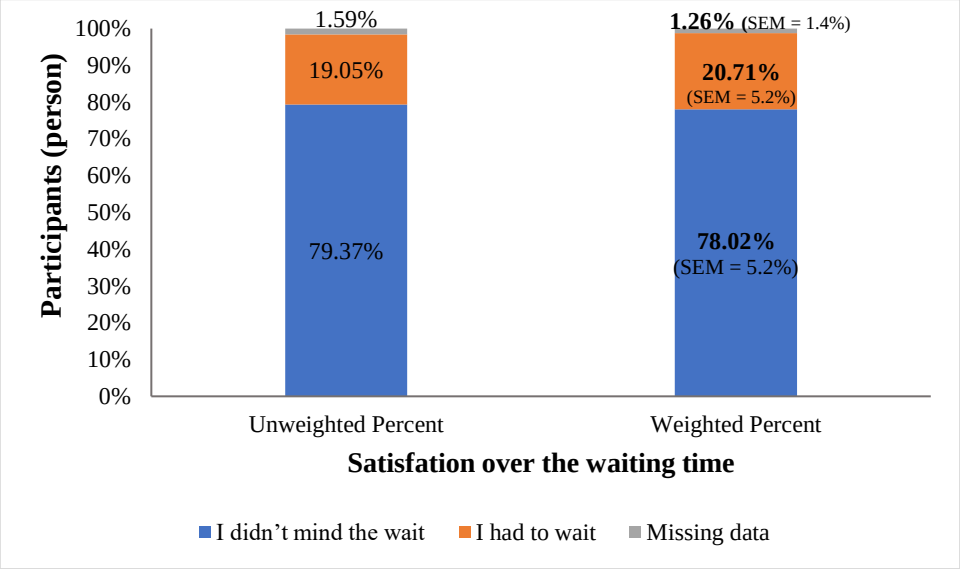


Figure 6.7: *Satisfaction over the Waiting Time at GP Services (Q2.3)*



ED services

The average weighted interval (based on the converted Likert scale of the waiting time) at ED was around 2 to 3 hours (see Figure 6.8). Over 31% of the weighted participants waited 2 to 3 hours before they received treatments at ED. Figure 6.8 also points out that 23.55% of weighted participants have waited 1 to 2 hours, while 26.4% have waited more than 3 hours. Moreover, 3.17% waited between 30 and 60 minutes, and 7.94% waited less than 30 minutes. About 7.08% of the weighted participants stated they never used ED services since their first arrival in Aotearoa NZ. Additionally, over 8 in 10 weighted participants mentioned they had to wait (see Figure 6.9). Only 10% were okay with waiting. Around 5.15% of the weighted participants stated that the question did not apply to them.

Figure 6.*8*: *Waiting time at ED (Q7.3)*

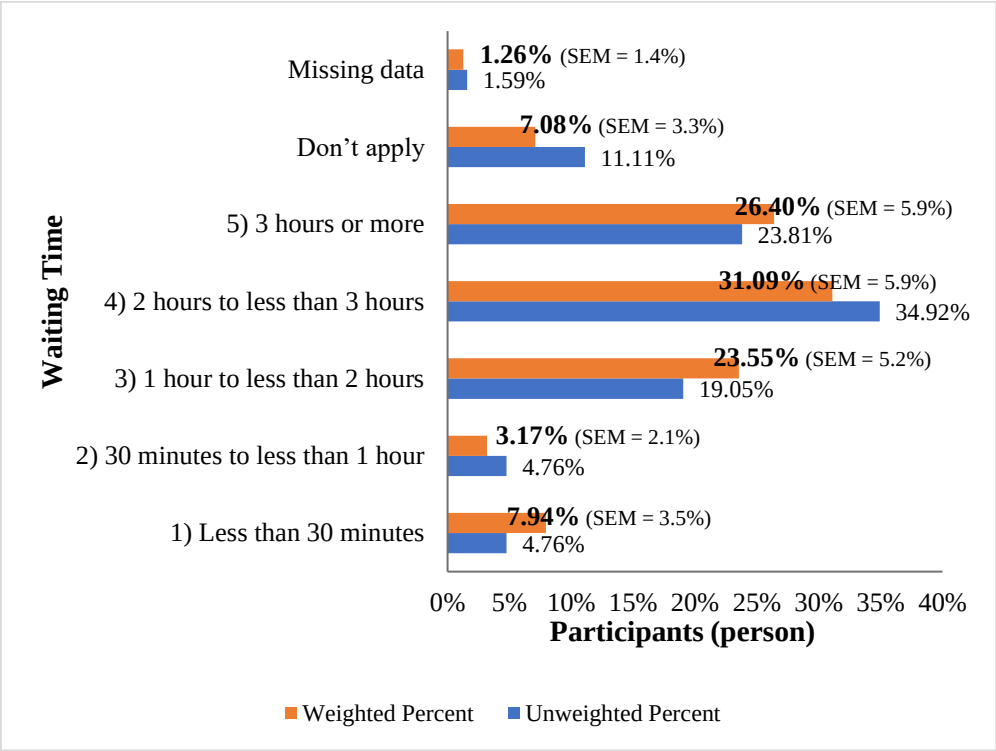
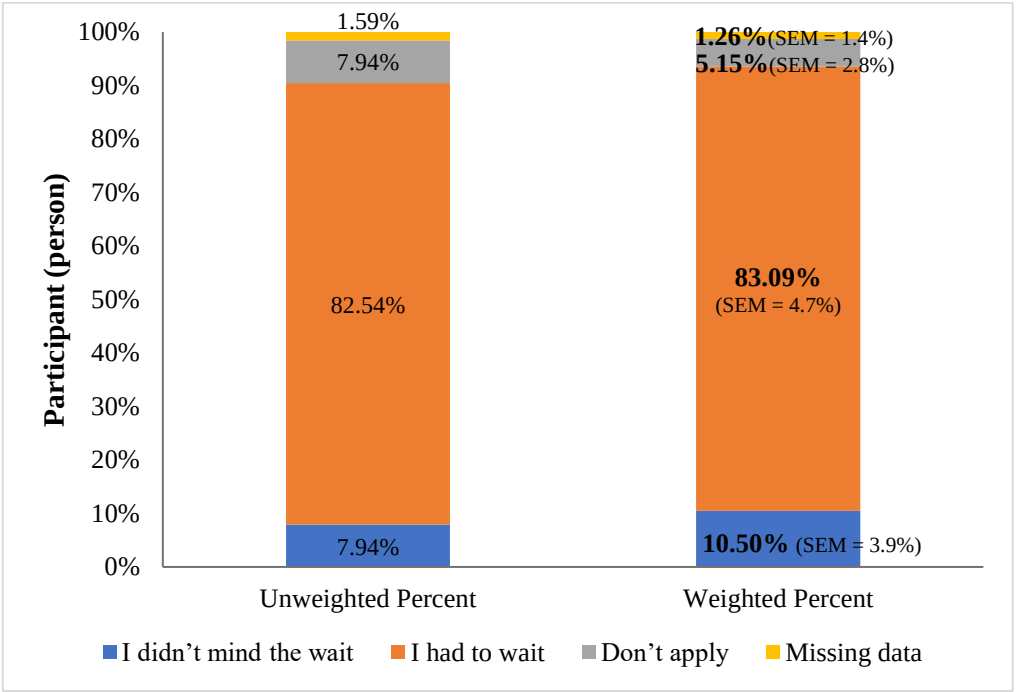


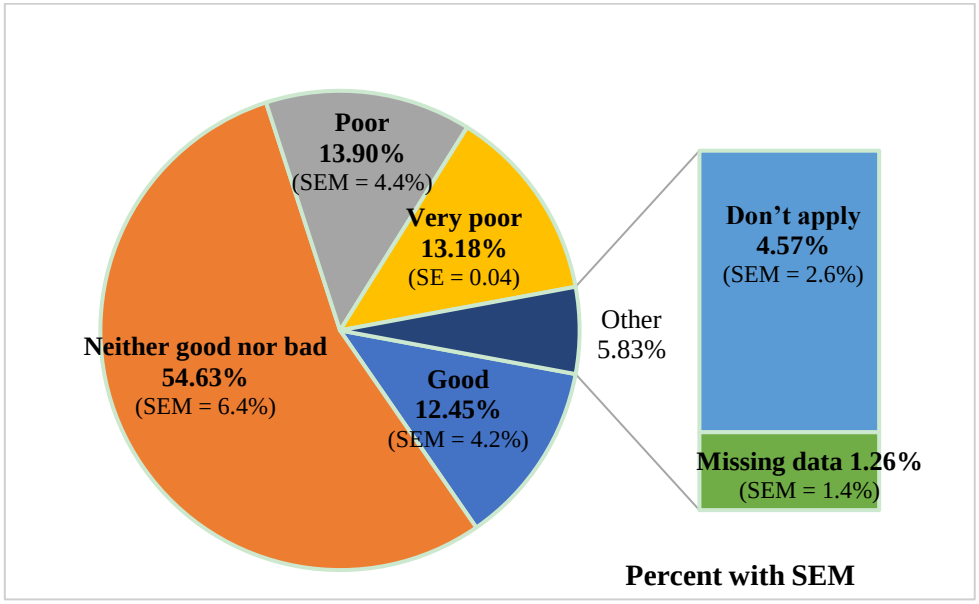
Figure 6.*9*: *Satisfaction over the waiting time at ED (Q7.5)*



When the study asked participants how good the staff were at notifying the waiting time, more than half of them felt it was neither good nor bad (see Figure 6.9). Around 12% of the weighted participants indicated they

had been given a reasonable explanation about how long they should wait. However, 13.90% reported they received a poor explanation, and 13.18% indicated it needed improvement. Additionally, 4.57% said they needed to gain such experience.

Figure 6.*10*: *How good were ED staff at telling you how long you could expect to wait? (Q7.4)*



COVID-related healthcare/support services

The average weighted interval (based on the converted Likert scale of the waiting time) to access/use COVID-related healthcare/support services was 15 to 30 minutes after the scheduled appointment (see Figure 6.11). Over 41.32% of the weighted participants had to wait around 15-30 minutes. Nearly 30% waited less than fifteen minutes. Moreover, 3.17% of the weighted participants were seen at their appointment time, while 3.17% walked in a COVID-related service without any appointments. However, over 20.63% of the population still had to wait more than 30 minutes to access/use such services. About 1.45% of the weighted participants did not use any COVID-related healthcare/support services. As Figure 6.12 indicates, most participants were satisfied with the waiting time. Around 42.94% of the weighted participants stated they did not mind waiting, while 49.29% reported they had to wait. Over 1.45% of the weighted participants stated that the question (Q10.4) did not apply to them, and 1.26% did not answer it.

Figure 6.*11*: *Waiting Time at COVID-related Healthcare/Support Services (Q10.3)*

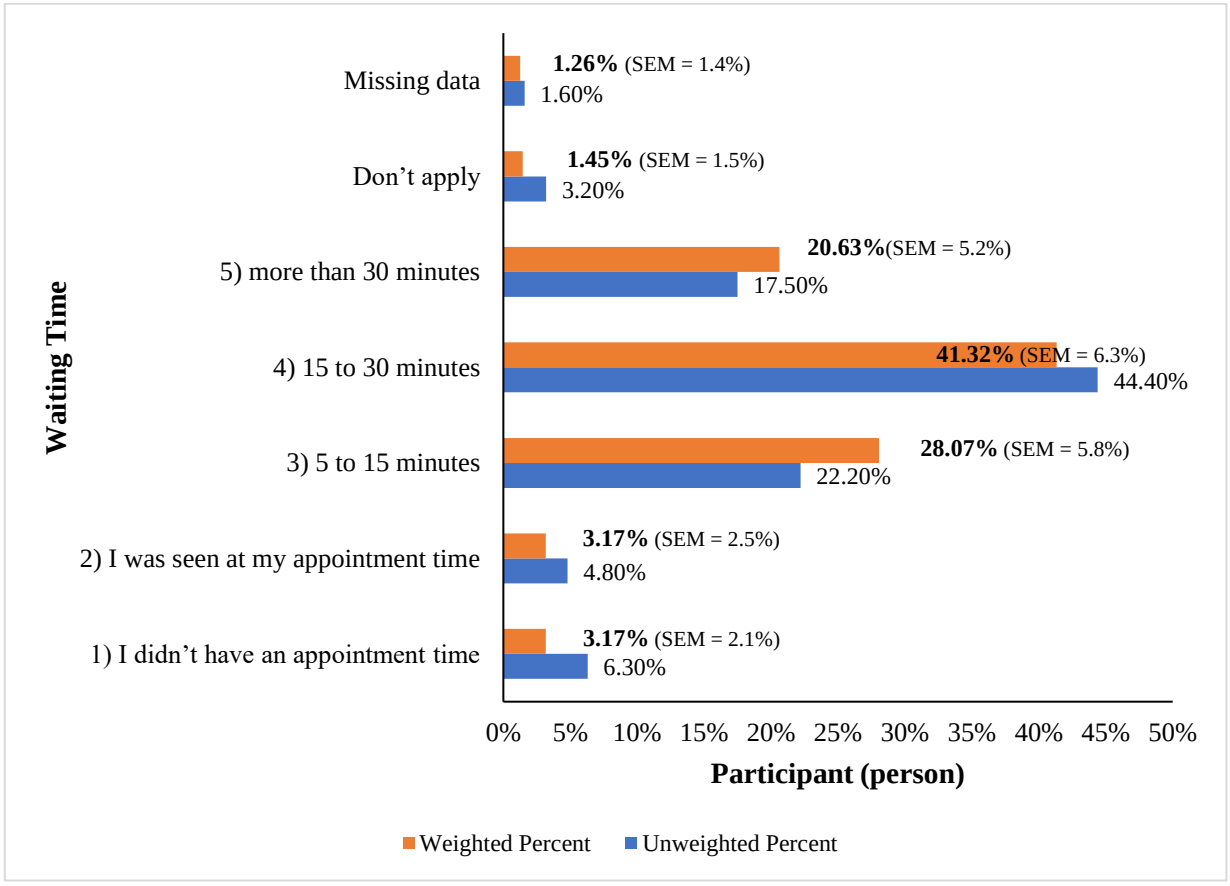
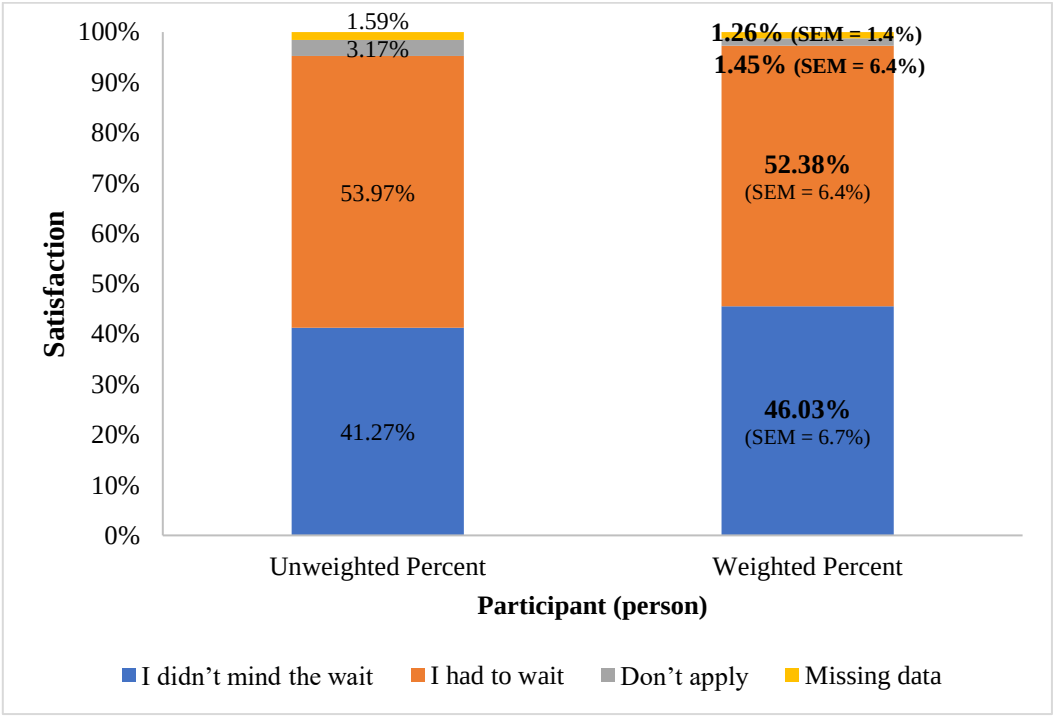


Figure 6.*12*: *Satisfaction Over the Waiting Time at COVID-related Services (Q10.4)*



6.2.2.2 Participants' evaluation of their healthcare

Overall, participants were satisfied with the care they had gotten in Aotearoa NZ in the non-pandemic period and during the COVID-19 pandemic.

Overall primary healthcare

The outcomes of Q1.7 ("*rating the helpfulness of the receptionists*"), Q1.8 ("*staff at the clinic provided enough information*"), and Q1.9 ("*satisfying the overall care received at the clinic*") help to explore the quality-of-care participants have received at primary healthcare centres. Such care/support was from the doctor and other staff working at the clinic. All the outcomes were displayed in Table 6-3. Participants were generally satisfied with the care provided by primary healthcare services.

Panel A of Table 6-3 (outcomes of Q1.7) shows participants' satisfaction with the receptionists at the clinic or medical centre they usually visited. Over 67.32% of the weighted participants found the receptionist helpful. One in six weighted participants claimed it was beneficial. Around 26.29% rated their experiences as "*neither helpful nor unhelpful*."

Panel B of Table 6-3 (outcomes of Q1.8) discovers that most participants (74.60%) reported they had been given some information that helped them manage their health concerns. About 17.46% of the weighted participants have received enough information. Around 1.59% have never received any information from any staff at the clinic. Nearly 5% of the weighted participants stated that the question (Q1.8) "*does not apply*" to them.

Panel C of Table 6-3 (outcomes of Q1.9) shows that over 80% of the weighted participants were satisfied with their primary healthcare experience. 74.60% stated their primary healthcare utilization experience was satisfied, and 7.94% said it was very satisfied. About 17.68% reported a "*neither satisfied nor dissatisfied*" experience at the primary healthcare service.

Table 6-3: *Evaluation of Overall Primary Care Experiences*

Panel A: Q1.7 "*How helpful have you found the receptionists at the clinic or medical centre?*" (n = 63)

	Unweighted Percent	Weighted Percent	SEM*
Very helpful	9.52%	5.92%	3.0%
Helpful	69.84%	67.32%	6.0%
Neither helpful nor unhelpful	19.05%	26.29%	5.6%
Unhelpful	-	-	-
Very unhelpful	-	-	-
Don't apply	-	-	-
Missing data	1.59%	1.26%	1.4%

*SEM represents the Standard Error of proportion

Panel B: Q1.8 "*Have staff at your usual medical centre given you enough information to help you manage your health concerns?*" (n = 63)

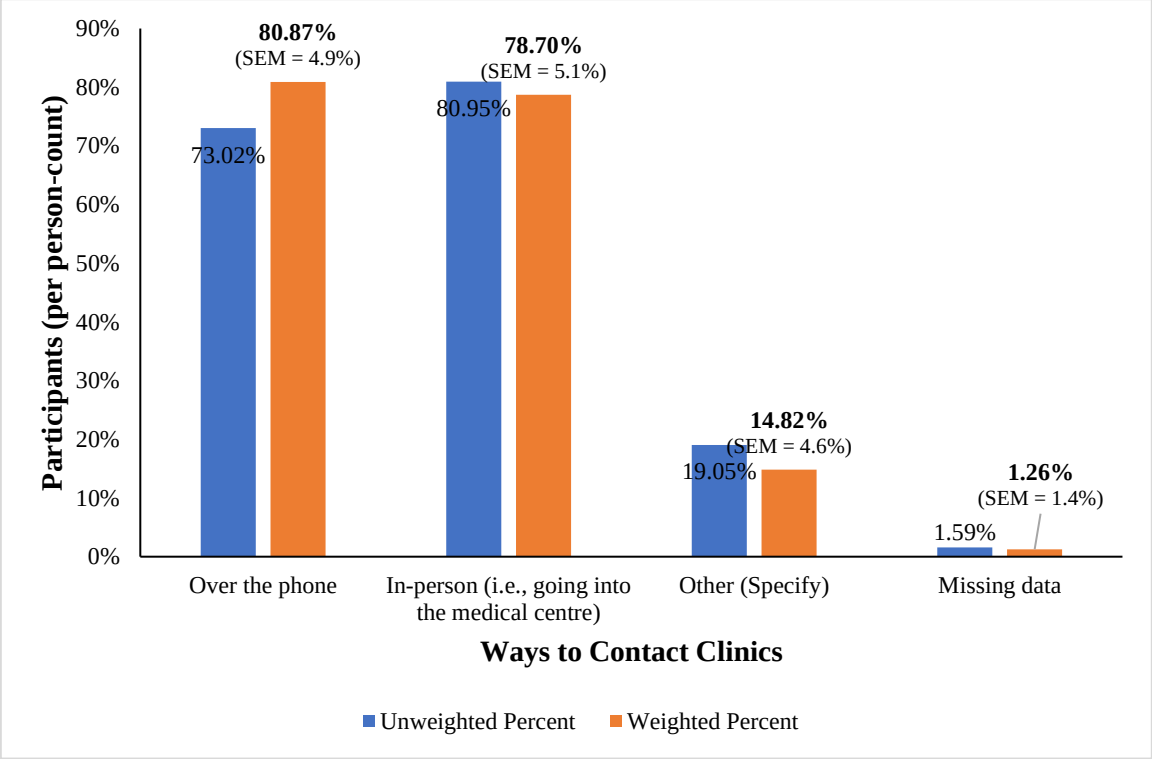
	Unweighted Percent	Weighted Percent	SEM*
Yes, definitely	26.20%	17.46%	4.9%
Yes, to some extent	68.25%	74.60%	5.6%
No, not at all	1.59%	1.59%	1.4%
Don't apply	1.59%	4.76%	2.9%
Missing data	1.59%	1.26%	1.4%

Panel C: Q1.9 "*Overall, how satisfied are you with the care you got at the clinic or medical centre? This includes all staff, not just the GP.*" (n = 63)

	Unweighted Percent	Weighted Percent	SEM*
Very satisfied	11.11%	7.94%	3.3%
Satisfied	71.43%	74.60%	5.5%
Neither satisfied nor dissatisfied	15.87%	17.68%	4.9%
Dissatisfied	-	-	-
Very dissatisfied	-	-	-
Don't apply	-	-	-
Missing data	1.59%	1.26%	1.4%

A follow-up question (Q1.6) also asked how participants contacted the primary healthcare services to book an appointment or request a repeating prescription. Figure 6.13 shows that around 80.87% of the weighted participants have phoned the clinic. Meanwhile, 78.70% had booked an appointment with the clinic in person. Moreover, 14.82% have asked a support person (i.e., children and friends) to call the clinic or medical centre.

Figure 6.*13*: *Ways to Contact Primary Care Clinics (Q1.6)*



GP healthcare

The outcomes of survey question Q2.4 ("*the doctor explained conditions/treatments in an understandable way*"), Q2.5 ("*involved in the decision-making process*"), Q2.6 ("*the doctor showed respect and dignity*"), and Q2.7 ("*trust in the GP*") represents evaluations of GP healthcare experiences from participants' perspectives. All the statistical outcomes were displayed in Figure 6.14 to Figure 6.17. One of the most significant findings is that except for one participant who reported a very poor experience with GP, other participants were satisfied with the care/support they received.

Figure 6.*14*: *Doctor Explained Conditions/Treatments in An Understandable Way (Q2.4)*

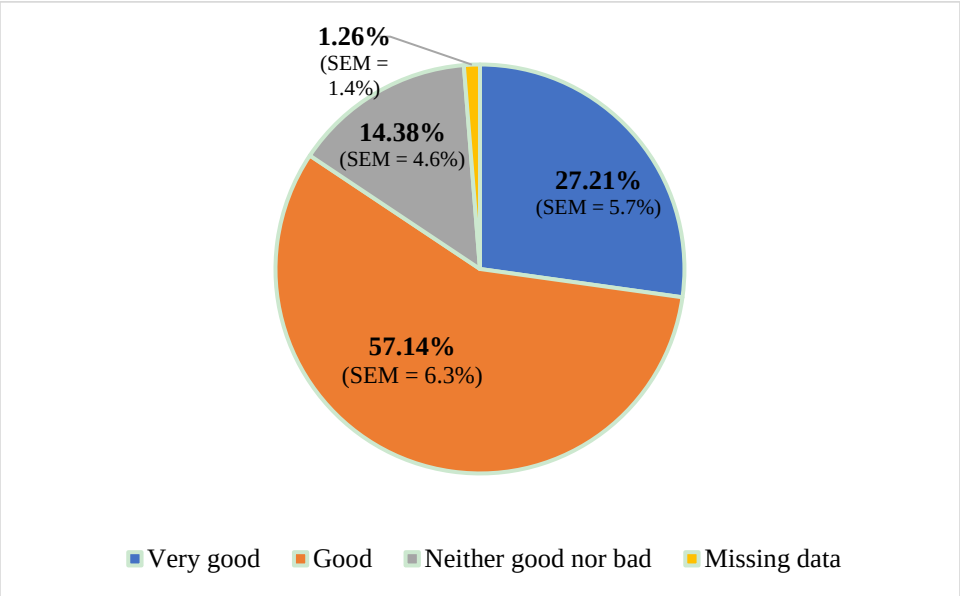
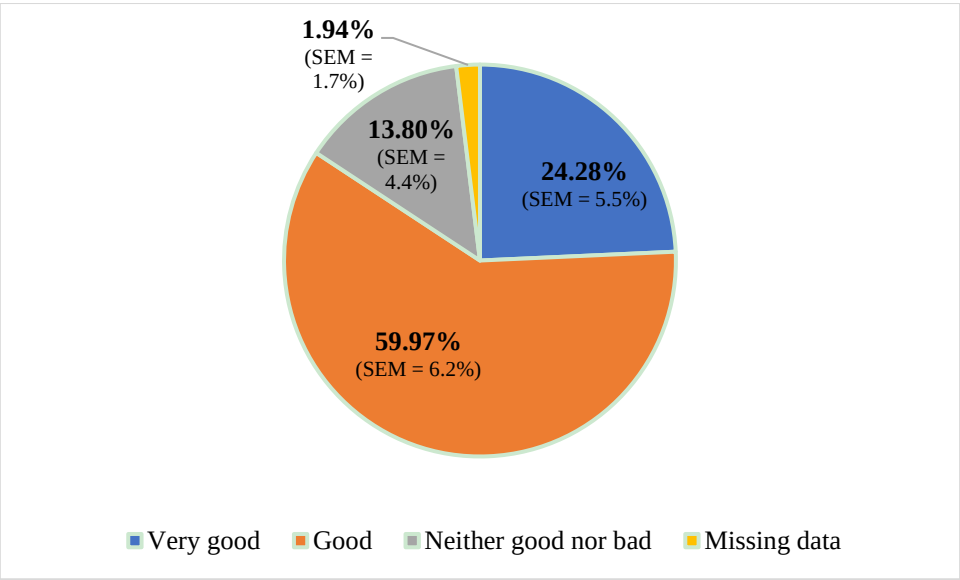


Figure 6.14 shows that over 57.14% of the weighted participants indicated that the GP explained the health conditions and treatments well, which they could understand. Almost 27.21% rated their experience as "*very good*." The remaining participants (14.38%) rated their experience as "*neither good nor bad*." A similar trend can be found in the outcomes of question Q2.6. Figure 6.15 reports that 59.97% of the weighted participants said the GP treated them respectfully and with dignity. Over 24.28% identified their experiences as "*very good*." About 13.80% determined that their experiences were neither good nor bad.

Figure 6.*15*: *Doctor Showed Respect and Dignity (Q2.6)*



When asked how good the GP was at involving participants in decision-making that related to their care (Q2.5), 1.26% of the weighted participants indicated they had a very poor experience, though others were satisfied with their experiences (see panel C of Table 6.2.12). Figure 6.16 indicates that 59.87% of the weighted participants appraised their experiences as good, 21.18% identified them as very good, and 16.43% determined them as neither good nor bad. Furthermore, one participant (1.26% of the weighted participants) rated as very poor.

Figure 6.*16*: *Involved in Decision-making Process (Q2.5)*

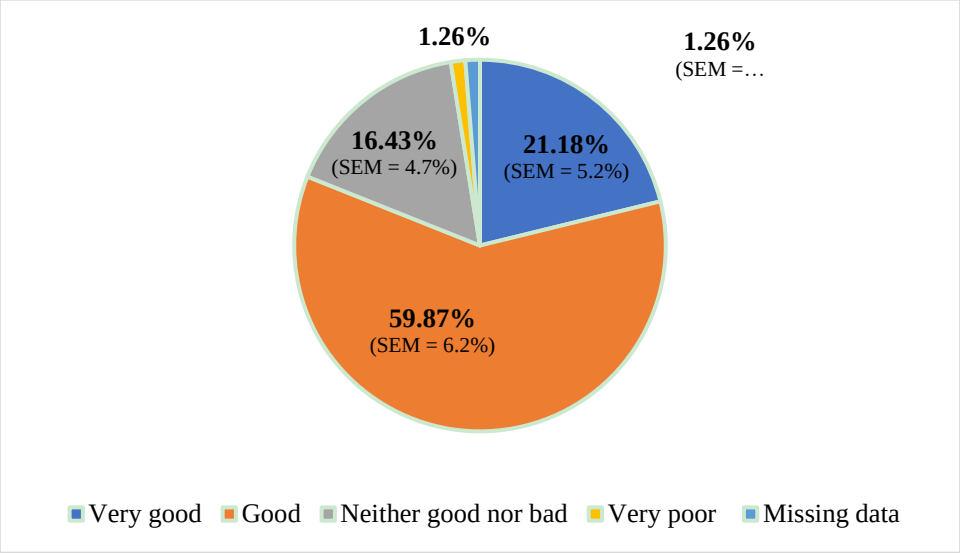
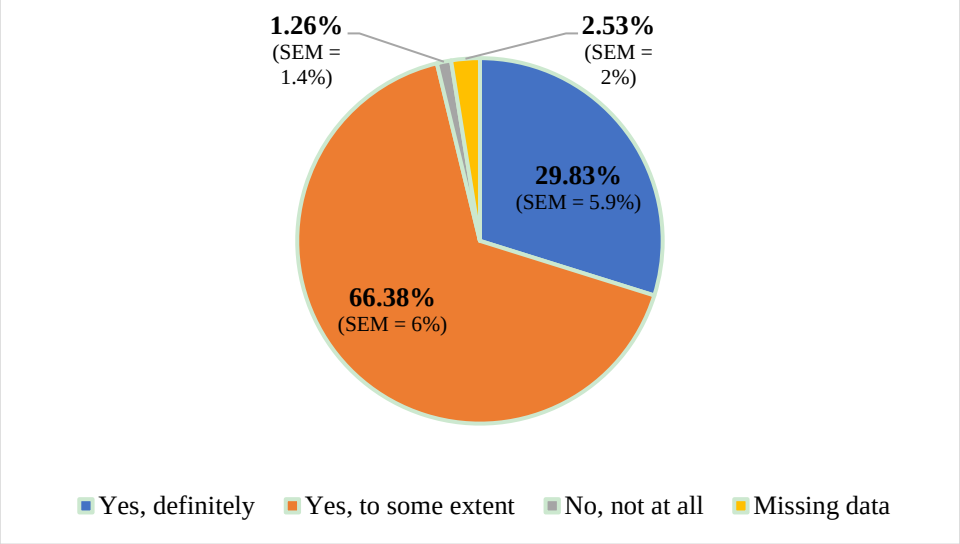


Figure 6.*17*: *Had Confidence and Trust in GP (Q2.7)*

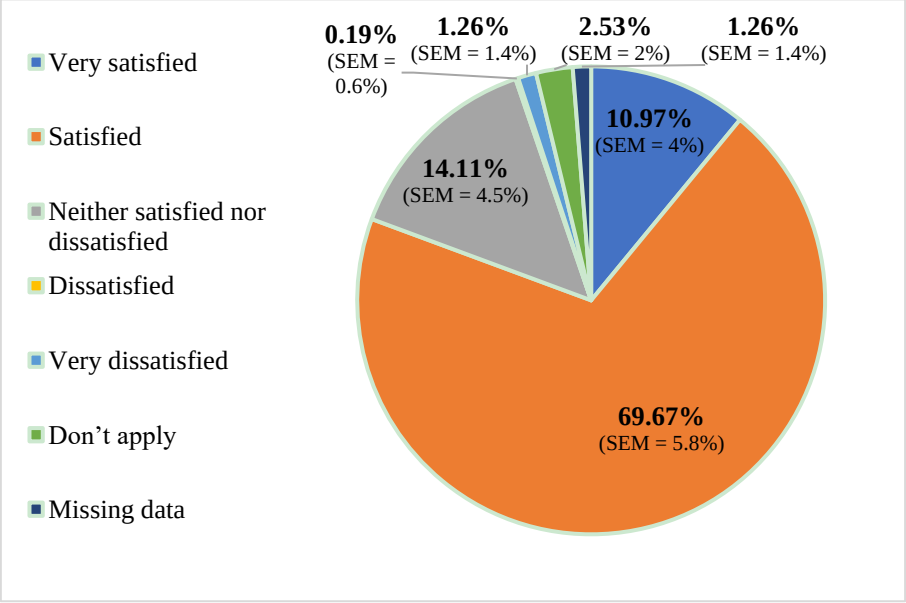


Furthermore, Figure 6.17 indicates that almost every participant trusted their GP. Specifically, 29.83% of the weighted participants stated they "*definitely trusted*" their GP. Meanwhile, 66.38% said they have some extent of confidence and trust in their GP. However, 1.26% of the weighted participants did not trust the GP.

Nursing care at GP clinics and medical centres

As described in section 6.2.1, over 93% of the weighted participants have seen nurses as part of a GP consultation. Thus, understanding individuals' experiences of using such services is essential. Figure 6.18 indicates the overall satisfaction with the GP clinic or medical centre nursing care. Almost 70% of the weighted participants were satisfied with nursing services, and 10.97% were delighted. Around 14.11% of the weighted participants were neither satisfied nor dissatisfied with such healthcare services. Individuals rated their nursing care experiences as dissatisfied and very dissatisfied were 0.19% and 1.26%, respectively.

Figure 6.*18*: *Satisfaction over Nursing Care Experiences (Q3.2)*

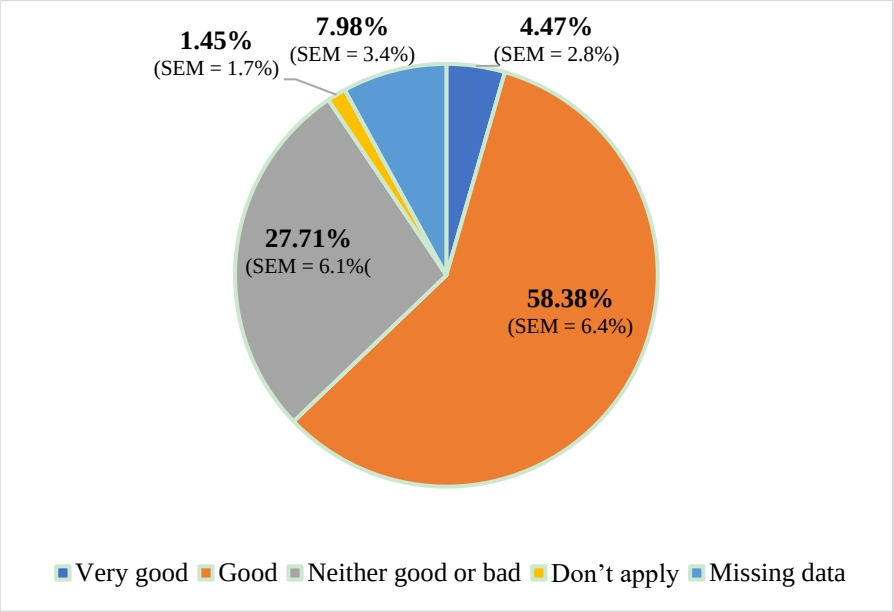


COVID-related healthcare

Healthcare or support services like COVID-19 testing, vaccination, isolation, and hotline services were essential in preventing the COVID-19 outbreak in Aotearoa NZ. Overall, participants were satisfied with the quality of care they received from such services.

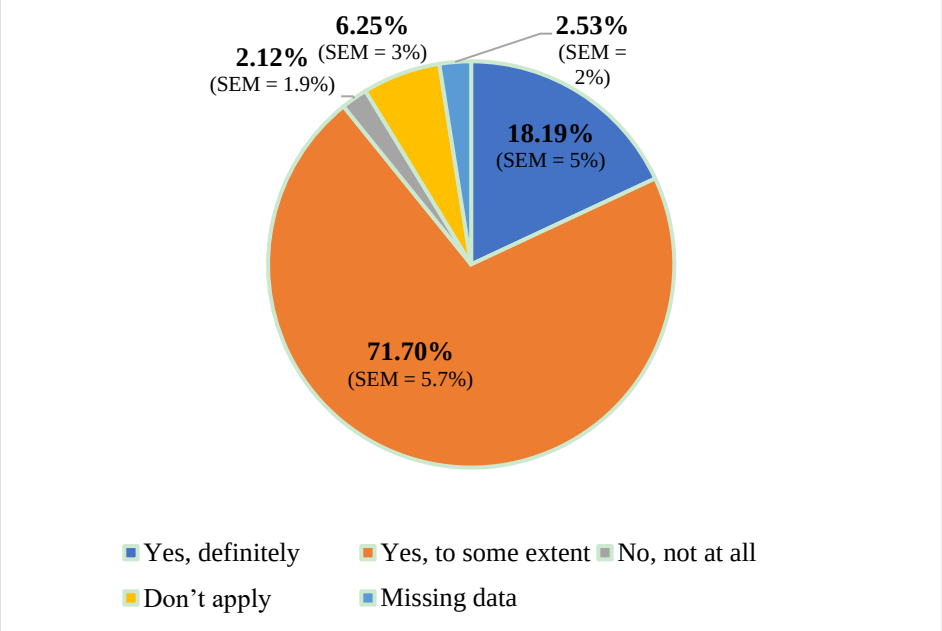
According to the outcomes of Figure 6.19, almost 6 in 10 weighted participants reported they had received good care. About 4.47% were delighted with their experiences using COVID-related services. Furthermore, 27.71% of the weighted participants stated that the care they received was neither good nor bad. The rest of the participants did not comment on the COVID-related healthcare utilisation. It includes 1.45% of the weighted participants who did not use COVID-related healthcare/support services.

Figure 6.*19*: *Quality of COVID-related Care (Q10.5)*



When participants were asked to rate how much COVID-related information the staff provided (Q10.6), approximately 90% of the weighted participants believed they had received enough information to help them manage health concerns during the pandemic. Among them, 71.70% stated the information they received was enough to "s*ome extent*," while 18.19% mentioned it was "*definitely*" enough. However, 2.12% of the weighted participants complained that they had not received any information. Moreover, 6.25% said the question (Q10.6) did not apply to them.

Figure 6.*20*: *Enough Information Was Provided by Staff (Q10.6)*



Moreover, participants were also asked where they got the information about the available COVID-19-related health/support services in the area (Q10.9). As Table 6-4 represents, the most common way (93.22%) that participants have received such information was from media (i.e., Television, radio, and internet) and social media (i.e., WeChat, QQ, and Facebook). Recommendations from friends and/or families (89.12% per cent) and GP (49.33% per cent) also play an essential role. Nearly 8% of the weighted participants mentioned receiving letters/pamphlets from other ways, including the local government and/or local Chinese communities. However, participants complained that the pamphlet was all in English, which needed help.

Table 6-4: *"How do you get the information about the available COVID-19-related health and support services in the area?" (Q10.9)*[13]

	Unweighted Percent	Weighted Percent	SEM*
Television, radio, internet, social media (i.e., WeChat, QQ, Facebook)	87.30%	93.22%	2.9%
Family members and friends	84.13%	89.12%	3.8%
GP	55.56%	49.33%	6.4%
Other (specify)	9.52%	7.59%	3.4%
Missing data	1.59%	1.26%	1.4%

13 Notes: Table 6-4 reports how participants got information about the available COVID-related healthcare/support services in the area. Participants are allowed to choose more than one answer. The denominator used to calculate the frequency percentage is the weighted estimate of the population total. The SEM was calculated based on the weighted data. *SEM representing the Standard Error of proportion.

6.2.3 Barriers to Healthcare Utilisation

The pilot survey developed nine questions to collect data that relate to the effects of interrupted utilisation of *primary healthcare services* (Q1.3), *GP services* (Q2.8), *after-hours care services* (Q4.2), *public hospitals* (Q5.2), *private hospitals* (Q6.2), *ED services* (Q7.6), *medical specialists* (Q8.2), *other healthcare services* (Q9.2), and *COVID-19-related healthcare/support services* (Q10.7). All these questions allowed participants to choose more than one answer. Thus, the unit of analysis is "per person-count" instead of "person" for these answers. To compute the frequency percentage for the answers, the denominator used was the weighted estimate of the population total.

Based on the outcomes of CATPCA, the barriers to participants' healthcare utilisation can be grouped into two main categories: sociocultural barriers and unavailable/inaccessible barriers. The following sections describe and interpret these barriers based on the descriptive statistical analysis. All the descriptive statistics were derived and displayed in Tables 6-5.

Table 6-5: *Barriers to Accessing and Using Healthcare Services*[14]

Panel A: Barriers to utilising primary healthcare services (Q1.3)

Barriers	Unweighted Frequencies	Weighted Frequencies	SEM*
"The time offered didn't suit me."	73.02%	77.75%	5.2%
"The appointment was with a doctor I didn't want to see."	46.03%	47.74%	6.4%
"The GP clinic/medical centre that I usually go to was closed during the lockdown (due to COVID-19 outbreak)."	41.27%	33.33%	6.0%
"There weren't any appointments."	38.09%	27.62%	5.7%
"I could have seen a doctor via telehealth/video but I wanted to see he/she in person."	19.05%	18.76%	5.0%
"I could have seen a nurse but I wanted to see a doctor."	6.35%	4.47%	2.7%
Don't apply	11.11%	8.29%	3.5%
Missing Data	1.59%	1.26%	1.4%

14 Notes: Table 6-5 reports unweighted and weighted frequencies of barriers to visiting various healthcare services in Aotearoa NZ, during non-pandemic and COVID-pandemic. Participants are allowed to choose more than one answer. The denominator used to calculate the frequency percentage is the weighted estimate of the population total.
*SEM represents the Standard Error of proportion, calculated based on the weighted data.

Panel B: Barriers to utilising GP and after-hours healthcare services

Barriers	GP Services (Q2.8)			After-hours Care Services (Q4.2)		
	Unweighted Percent	Weighted Percent	SEM*	Unweighted Percent	Weighted Percent	SEM*
1) Couldn't get an appointment soon enough/at a suitable time	66.67%	75.53%	6.2%	-	-	-
2) It was after-hours	36.51%	48.85%	6.4%	-	-	-
3) The service in the area was closed during the lockdown	28.57%	29.62%	5.9%	-	-	-
4) Couldn't get in touch with the doctor	26.20%	29.82%	5.9%	-	-	-
5) Could have seen a doctor via telehealth but wanted to see the doctor in person	15.87%	19.34%	5.1%	-	-	
6) Chinese-speaking GP was unavailable	14.29%	9.48%	3.8%	14.29%	10.21%	3.0%
7) Didn't want to be a burden	6.35%	4.47%	2.7%	4.76%	3.79%	2.5%
8) Had no transport to get there	4.76%	2.13%	1.9%	11.11%	6.60%	3.3%
9) Couldn't spare the time	3.17%	1.36%	1.5%	-	-	-
10) Lack of support person	3.17%	2.52%	2.0%	-	-	-
11) Unfamiliar with such services in Aotearoa NZ	1.59%	0.19%	0.6%	26.20%	31.12%	5.0%
12) Services were expensive/ not affordable	-	-	-	-	-	-
13) Other (specify)	3.17%	2.53%	2.0%	1.59%	1.26%	1.0%
Don't apply	15.87%	8.72%	3.6%	57.14%	52.54%	6.4%
Don't know				1.59%	6.25%	3.0%
Missing data	1.59%	1.26%	1.4%	4.76%	3.21%	2.0%

Panel C: Barriers to utilising hospital services

Barriers	Public Hospital Services (Q5.2)			Private Hospital Services (Q6.2)		
	Unweighted Percent	Weighted Percent	SEM*	Unweighted Percent	Weighted Percent	SEM*
1) Had no transport to get there	26.20%	24.68%	5.5%	1.59%	0.68%	1.1%
2) Services were expensive/ not affordable	22.22%	23.24%	6.2%	14.29%	19.75%	4.4%
3) Lack of Chinese-speaking practitioners and/or translators in hospital services	28.57%	22.93%	6.2%	-	-	-
4) Didn't want to be a burden	20.63%	22.56%	6.2%	-	-	-
5) Lack of support person	28.57%	21.36%	5.3%	-	-	-
6) Long waiting list/time	26.98%	19.51%	5.1%	-	-	-
7) Couldn't get an appointment soon enough/at a suitable time	20.63%	15.63%	4.7%	-	-	-
8) Unfamiliar with such services in Aotearoa NZ	12.70%	7.87%	3.5%	9.52%	11.77%	4.2%
9) Concerned about the risk of contracting COVID	4.76%	2.13%	1.9%	-	-	-
10) Lack of available such services in the area	3.17%	6.72%	3.2%	-	-	-
11) Couldn't spare the time	-	-	-	-	-	-
12) Other (specify)	-	-	-	4.76%	3.20%	2.3%
Don't apply	50.79%	60.36%	6.2%	77.78%	75.11%	5.3%
Don't know	-	-	-	1.59%	1.26%	1.5%
Missing data	1.59%	1.26%	1.4%	3.17%	2.53%	1.4%

Panel D: Barriers to utilising ED and medical specialist services

Barriers	ED Services (Q7.6)			Medical Specialist Services [a] (Q8.2)		
	Unweighted Percent	Weighted Percent	SEM*	Unweighted Percent	Weighted Percent	SEM*
1) Long waiting list/time	71.43%	77.78%	5.2%	14.29%	8.55%	3.6%
2) Lack of Chinese-speaking practitioners and/or translators in hospital services	47.62%	46.34%	6.4%	12.70%	8.36%	3.6%
3) Had no transport to get there	36.51%	41.18%	6.3%	4.76%	3.21%	2.3%
4) Concerned about the risk of contracting COVID	26.98%	34.92%	6.1%	-	-	-
5) Lack of support person	23.81%	26.17%	5.6%	7.94%	4.08%	2.5%
6) Unfamiliar with such services in Aotearoa NZ	12.70%	16.34%	4.7%	6.35%	4.47%	2.7%
7) Lack of available such services in the area	17.76%	15.87%	4.6%	3.17%	1.94%	1.8%
8) Didn't want to be a burden	3.17%	2.53%	2.0%	7.94%	6.35%	3.2%
9) Services were expensive/ not affordable	1.59%	0.19%	0.6%	11.11%	7.68%	3.4%
10) Couldn't get an appointment soon enough/at a suitable time	-	-	-	4.76%	3.17%	2.3%
11) Couldn't spare the time	-	-	-	-	-	-
12) Other (specify)	4.76%	7.98%	3.5%	-	-	-
Don't apply	23.81%	19.13%	5.1%	74.60%	79.36%	5.1%
Don't know	-	-	-	3.17%	6.35%	3.2%
Missing data	1.59%	1.26%	1.4%	1.59%	1.26%	1.4%

Panel E: Barriers to utilising other and COVID-19-related healthcare Services

Barriers	Other healthcare services (Q9.2)			COVID-19-related healthcare services (Q10.7)		
	Unweighted Percent	Weighted Percent	SEM*	Unweighted Percent	Weighted Percent	SEM*
1) Couldn't get an appointment soon enough/at a suitable time	57.14%	53.85%	6.1%	-	-	-
2) Long waiting time	-	-	-	19.05%	21.79%	5.3%
3) Services were expensive/ not affordable	49.21%	41.40%	6.4%	-	-	-
4) Had no transport to get there	46.03%	39.37%	6.4%	7.94%	4.57%	2.7%
5) Chinese-speaking caregiver was unavailable	33.33%	26.23%	5.7%	15.87%	10.30%	2.5%
6) Lack of such services in the area	33.33%	30.91%	6.2%	-	-	-
7) Unfamiliar with such services in Aotearoa NZ	26.98%	25.94%	5.7%	6.35%	8.65%	3.6%
8) Concerned about the risk of contracting COVID	15.87%	10.39%	3.9%	7.94%	3.99%	3.9%
9) Lack of support person	15.87%	11.47%	4.1%	3.17%	1.94%	1.8%
10) It was after-hour	7.94%	6.31%	3.1%	1.59%	1.26%	1.4%
11) Didn't want to be a burden	4.76%	3.21%	2.3%	-	-	-
12) Other (specify)	4.76%	6.32%	3.4%	4.76%	3.79%	2.5%
13) Couldn't spare the time	1.59%	1.26%	1.4%	1.59%	0.68%	1.1%
Don't apply	19.05%	17.46%	4.9%	68.25%	69.85%	5.8%
Don't know	1.59%	6.25%	2.9%	-	-	-
Missing data	3.17%	1.94%	2.0%	1.59%	1.26%	1.4%

6.2.3.1 Sociocultural barriers to healthcare utilisation

Sociocultural barriers are manufactured constructs originating from social norms and cultural values. Andersen et al. (2013) determined that sociocultural barriers are predisposing factors that prevent participants from accessing and using healthcare services. Nyande et al. (2022) mentioned that sociocultural barriers damage healthcare delivery and utilisation by restricting access to public health-related information sources and giving rise to negative emotions. In this study, such sociocultural barriers comprise language barriers, health beliefs and attitudes. They are reflected by answers such as "*want to see doctors in person*," "*did not want to be a burden*." The identified sociocultural barriers in the study are interestingly different between primary and secondary care, which might reflect mixed social, environmental, and cultural determinants.

Primary healthcare utilisation

The common sociocultural barrier to utilising primary healthcare services was personal preference due to individuals' health beliefs and attitudes and mutual understanding between patients and their healthcare practitioners (see panel A of Table 6-5). Over 47.74% of the weighted participants have not visited medical centres because "*the appointment was with a doctor I didn't want to see*." Although the clinic provides telehealth services, 18.76% of the weighted participants avoided using such services and preferred an in-person visit. This finding is in line with the finding from panel B of Table 6-5, where 19.24% of the weighted participants "*wanted to see the GP in person*." Additionally, 4.47% decided not to visit the clinic, even though the nursing services were available.

Panel B of Table 6-5 discovers that sociocultural barriers play a minor role in interrupting participants using GP and after-hours care services. First, language barriers interrupted 9.48% of the weighted participants using a GP service and 10.21% using an after-hours care service. One participant specified that a lack of Chinese-speaking receptionists increased the difficulty of making an appointment. Second, "*didn't want to be a burden"* ~~plays a similar "~~ played a vital role in preventing participants from utilising a GP service (4.47%) and an after-hours care service (3.79%). Third, only 0.19% of the weighted participants experienced difficulties utilising a GP service due to the barrier of being "*unfamiliar with the services*." However, a different picture can be found

in utilising after-hours care services. Over 31% of the weighted participants defined "*unfamiliarity with the services*" as the main barrier that prevented them from using after-hours services in Aotearoa NZ.

Secondary and tertiary healthcare utilisation

The language barrier was the significant sociocultural barrier, which stopped about 22.93% of weighted participants from visiting public hospitals (see panel C of Table 6-5). Participants' attitudes towards "*did not want to be a burden*" and "*long waiting list*" also prevented them from visiting public hospital services in Aotearoa NZ (22.56% and 19.51%, respectively). Furthermore, this study found that some barriers (including "*unfamiliarity with the NZ public hospital services*" (7.87%) and "*concern about the risk of getting COVID-19*" (2.13%)) only affect a small number of participants.

Meanwhile, the long waiting time was one of the most significant barriers that delayed participants (77.78%) using ED services at a public hospital (see panel D of Table 6-5). This finding can prove the outcomes over the satisfaction of waiting time at ED found in Section 6.2.2. Other sociocultural barriers, such as "*lack of Chinese-speaking staff at ED*" (46.34%), "*concerns about the risk of contracting COVID*" (34.59%), and "*unfamiliarity with the services*" (16.34%) also increased the difficulties of using ED services in Aotearoa NZ. However, unlike the barriers to hospital utilisation, participants (2.53%) considered the factor "*didn't want to be a burden*" as a barrier to ED utilisation.

Barriers to accessing private hospital services and medical specialists show a different picture. Panel C and D of Table 6-5 indicate that nearly 80% of the weighted participants have not used such services since they first arrived in Aotearoa NZ. However, around 12% of the weighted participants mentioned they had experienced difficulties due to being "*unfamiliar*" with the private hospital facilities (see panel C of Table 6-5). Moreover, the "*long waiting list*" was the most common sociocultural barrier that prevented participants (8.55%) from visiting medical specialists (see panel D of Table 6-5). Like other secondary/tertiary healthcare services, the utilisation of medical specialists can also be barriers due to "*lack of Chinese-speaking specialists*," "*didn't want to be a burden*," "*unfamiliar with the referral system*," and "*lack of available services in the area*." Nevertheless, these factors appear to be of lesser concern to participants, ranging from 8.36% to 1.94%

Other healthcare and COVID-related healthcare utilisation

According to the finding from panel E of Table 6-5, language barrier (26.23%) and "*unfamiliarity with the services in Aotearoa NZ*" (25.94%) were the significant sociocultural barriers that prevented participants from using other healthcare services. Participants also experienced difficulties when visiting other healthcare services due to "*concern about the risk of contracting COVID*," "*did not want to be a burden*," and "*couldn't spare the time*."

Panel F of Table 6-5 reports that the most frequently mentioned reason that interrupted participants from accessing/using COVID-related services was the "*long waiting time*" (21.79%). Although the findings in Section 6.2.2 determined that most participants were satisfied with the waiting time at COVID-related services, 21.79% of the weighted participants claimed the waiting time at such services was long. Specifically, a few participants reported that it took hours to get through the Healthline. Another main barrier was the "*lack of Chinese-speaking health providers*." Over 10% of the weighted participants desired to have Chinese-speaking caregivers to make utilising COVID-related services easier. Other sociocultural factors, such as "*unfamiliar with the procedure*," "*concern of the risk of contracting COVID-19*," "*after-hour*," and "*inability to spare time*," also interrupted participants' utilisation of COVID-19-related services.

6.2.3.2 Unavailable/inaccessible barriers to healthcare utilisation

The unavailable/inaccessible barriers are the enabling resource-related factors that hinder participants from accessing and utilising healthcare services (Andersen et al., 2013). These barriers are related to transportation, opening hours, and available care providers.

Primary healthcare utilisation

Panel A of Table 6-5 shows that one of the most common barriers participants experienced at primary medical centres was that they "could not *get an appointment at a suitable time*." About 77.75% of the weighted participants reported that the offered appointment did not suit them. Meanwhile, 27.62% stated there were no

appointments available when they needed them. Moreover, one-third of the weighted participants complained that the GP clinic or medical centre was closed during the COVID-19 lockdown.

A very similar finding can be found in panel B of Table 6-5. The unavailable/inaccessible barriers, including "*no suitable appointments*" (75.53%), "couldn't *get in touch with the doctor*" (29.82%), and "*the GP service was closed during the COVID-19 lockdown*" (29.62%), are the most common reasons of preventing participants from using GP clinics. The transportation issue was another unavailable/inaccessible barrier that prevented 2.13% of the weighted participants from using GP services and 6.60% from using after-hours care services.

Secondary and tertiary healthcare utilisation

Contrary to the primary healthcare utilisation, panels C and D of Table 6-5 indicate that the transportation-related issue was the most frequently mentioned unavailable/inaccessible barrier that interrupted participants using public hospitals (24.68%) and ED services (41.18%). Other enabling factors, such as "l*ack of support person*," "*couldn't get suitable appointments*," and "*lack of available public hospital services in the area*," also became barriers to utilising public hospitals, ED services, and medical specialists. Additionally, the only unavailable/inaccessible barrier to private hospital utilisation based on the findings of panel C was the transportation-related issue. However, it had very little influence (0.68%).

Other healthcare and COVID-related healthcare utilisation

According to the finding from panel E of Table 6-5, "*couldn't get an appointment at a suitable time*" was the most common unavailable/inaccessible barrier for participants (53.85%) in accessing and utilising other healthcare services. Moreover, 3.79% of the participants complained that the pharmacy they usually visited was closed during the lockdown. Like the utilisation of formal healthcare services, other enabling factors, such as transportation-related issues, "*lack of available services in the area*," "*a lack of support person,*" and "*it was after-hours,*" impact negatively on participants' utilisation of other healthcare services and COVID-19-related healthcare/support services (see panel E of Table 6-5).

The effect of the COVID-19 pandemic on utilising healthcare services

This pilot survey aims to explore participants' experiences of accessing and utilising NZ healthcare services in the face of non-pandemic circumstances and the ongoing COVID-19 pandemic environments. Therefore, ten questions were developed to explore participants' utilisation of primary healthcare services (*primary medical centres*(Q1.10), *GP services* (Q2.10), *nursing services at CP clinics*(Q3.3), and *after-hours care services* (Q4.4)), secondary and tertiary healthcare services (*public hospitals* (Q5.4), *private hospitals*(Q6.3), *ED services* (Q7.7), and *medical specialists* (Q8.4)), other healthcare services (Q9.3), and COVIE-19-related healthcare/support services (Q10.10) that interrupted by the COVID-19 pandemic in Aotearoa NZ from 2020 to present. These are all yes-no questions.

Overall, the COVID-19 pandemic has had a neutral effect on participants' primary healthcare utilisation during the COVID-19 pandemic outbreak (2020 – present). Around 42% of the weighted participants believed the ongoing pandemic had interrupted their visits to primary healthcare services, while 46.13% believed there was no impact (Figure 6.21). Moreover, about 10.60% have no idea whether the COVID pandemic has stopped them from using primary healthcare services.

When focusing on different types of primary services, Figure 6.21 shows that over 62.11% of the weighted participants claimed the COVID pandemic was a barrier to visiting GP services. The proportion of nursing services is reduced to 20.86%. An important outcome is found in visiting after-hours healthcare services. No one reported that the current COVID pandemic has increased the difficulties in accessing/using such services. However, over 45.81% stated they "*don't know*" whether the pandemic affected their after-hours care utilisation.

Figure 6.22 shows that only around 1% of the weighted participants reported that the COVID pandemic had interrupted their utilisation of public hospitals, private hospitals, and medical specialists. Meanwhile, a more significant number of participants reported they needed to find out whether the COVID-19 pandemic affected their utilisation of such secondary/ tertiary healthcare services. However, more than half of the weighted

participants believed the ongoing pandemic was a barrier to using ED services, while one-third believed it was not a problem.

Figure 6.*21*: *Effect of the COVID-19 Pandemic on Using Primary Healthcare Services*

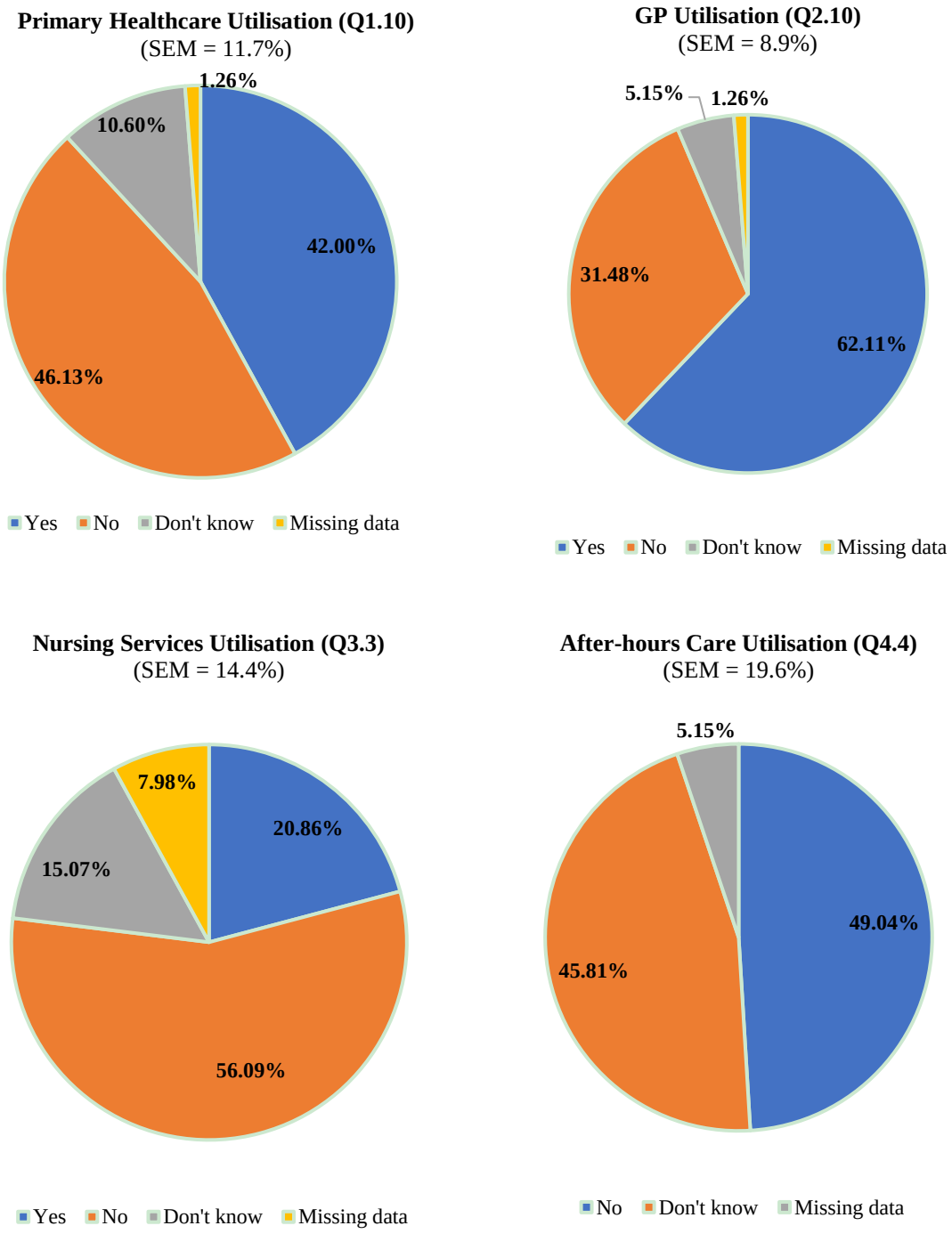
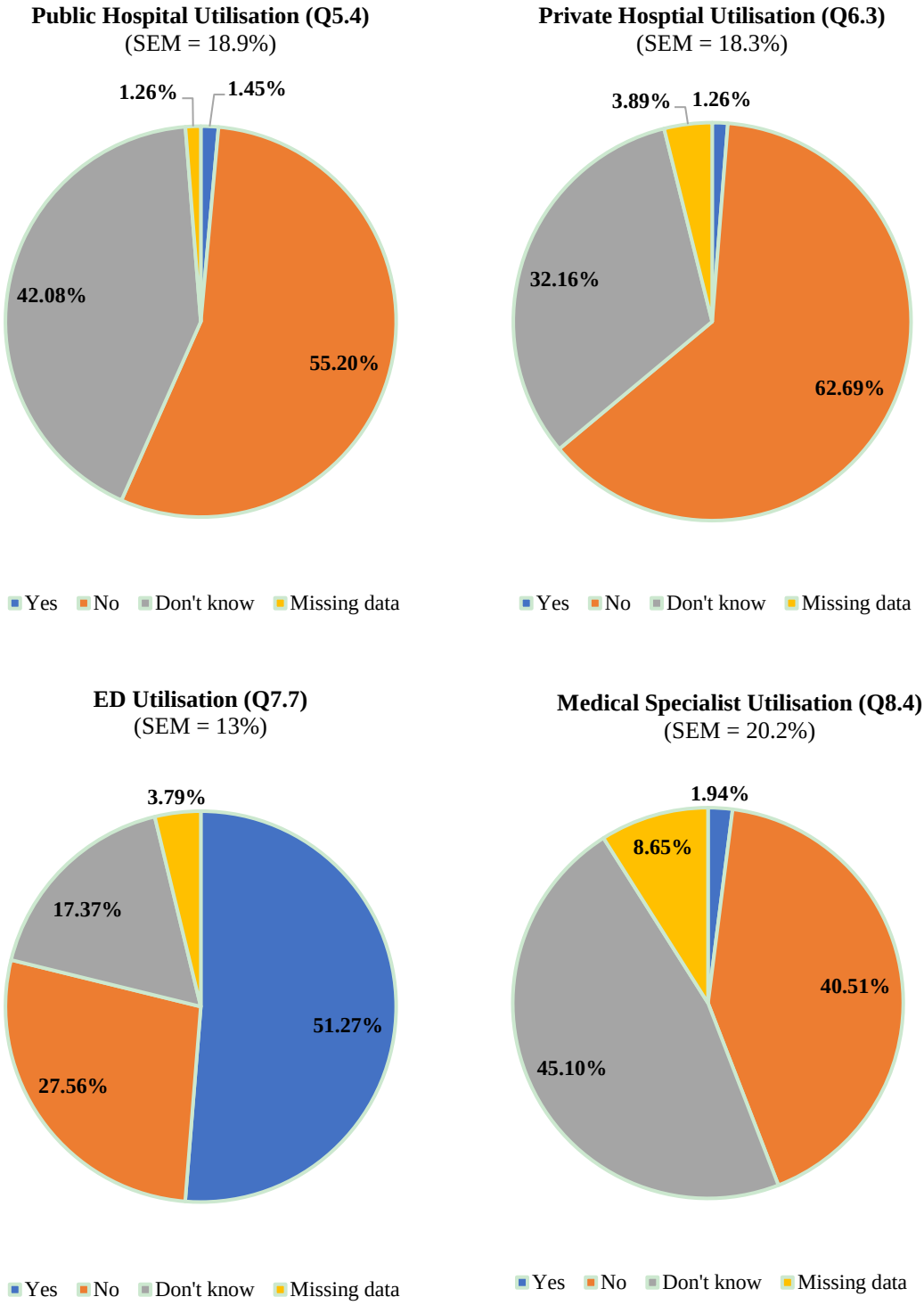


Figure 6.*22*: *Effect of the COVID-19 Pandemic on Using Secondary and Tertiary Healthcare Services*

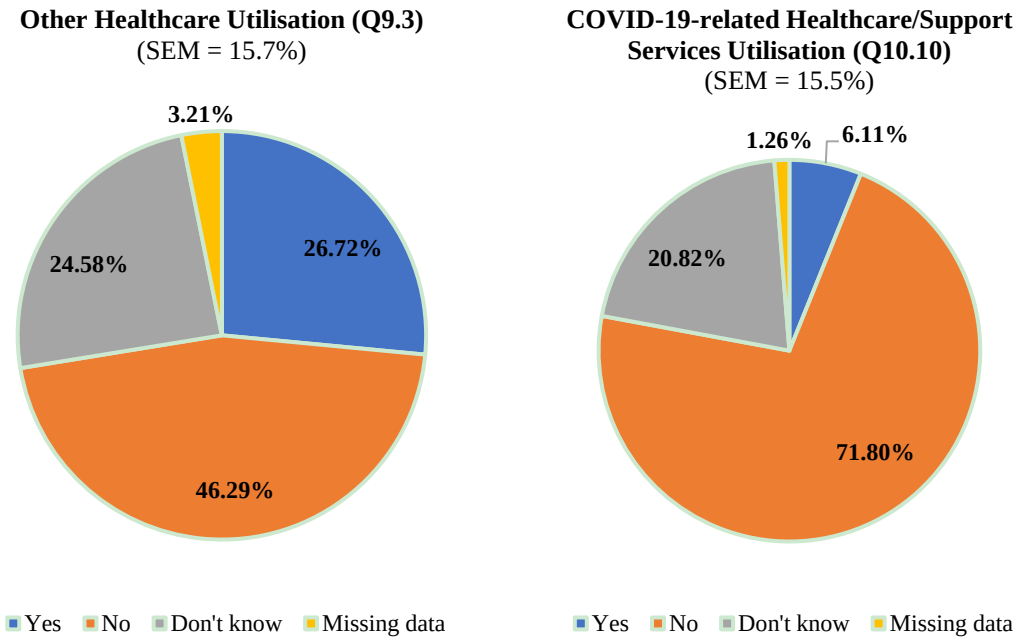


Like the outcomes of primary healthcare utilisation, around half of the weighted participants reported no difficulties using other healthcare services during the COVID-19 pandemic (see Figure 6.23). However, over

one-quarter of the weighted participants believed the ongoing pandemic increased difficulties using other care services. Additionally, nearly 24.58% "*do not know*" whether there was an effect.

They were looking into the effect of the COVID-19 pandemic on utilising COVID-19-related healthcare/support services. Figure 6.23 reports that more than 71.80% of the weighted participants believed there was no impact. More than 20% claimed they "*don't know*." However, the study still found that 6.11% of the weighted participants confirmed that the ongoing COVID-19 pandemic was a barrier to visiting such services.

Figure 6.*23*: *Effect of the COVID-19 Pandemic on Using Other and COVID-related Healthcare Services*



6.2.4 Alternative Healthcare-seeking Behaviours

The pilot survey developed five questions to understand the alternative healthcare-seeking behaviours participants had taken when the *GPs* (Q2.9), *after-hours care centres* (Q4.3), *public hospitals* (Q5.3), *medical specialists* (Q8.3), and *COVID-19-related healthcare/support services* (Q10.8) were unavailable/inaccessible. All these questions were multiple-choice questions, allowing participants to have more than one answer. All the weighted outcomes were presented in five diagrams (Figure 6.24 to 6.28), as shown below.

Figure 6.24 reports the frequency distribution related to participants' alternative healthcare-seeking behaviours when they experienced difficulties using primary healthcare services. It indicates that when participants could not make an appointment to see a GP in time, over 80.36% of the weighted participants chose to see the same GP later. As previously discussed in section 6.2.3, "*after-hours*" was one of the most common barriers that interrupted participants from visiting a GP in time. Thus, it was not a surprise that participants chose to use ED services (55.30%), after-hours medical care (12.45%), and ever phoned an ambulance (3.79%) when it was "*after-hour*." The use of other healthcare services (i.e., Chinese traditional medical clinics, Chinese acupuncture therapy, and Chinese massage therapy) was another alternative healthcare-seeking behaviour participants took (see Figure 6.24). Furthermore, 7.98% of the weighted participants specified that they had phoned a GP, and 1.26% had phoned Healthline for advice when the GP clinic was closed during the COVID-19 lockdown period. Additionally, 6.25% of the weighed participants did nothing, while 7.58% reported not having such experiences.

Participants' alternative healthcare-seeking behaviours for after-hours care services show a varied picture. Figure 6.24 shows that more than 62.37% of the weighted participants stated they had not used any after-hours care services since they first arrived in Aotearoa NZ. This result is in line with the finding from section 6.2.1. For participants who experienced difficulties in accessing an after-hours medical centre, the common alternatives they took were "*went to an emergency department at the public hospital*" (29.55%), "*phoned an ambulance*" (8.85%), and "*phoned Healthline or another phone number for advice*" (2.53%).

Figure 6.25 overviews participants' alternative healthcare-seeking behaviours for secondary and tertiary healthcare services in Aotearoa NZ. Meanwhile, Figures 6.26 and 6.27 represent other alternatives (not listed in questions Q5.3 and Q8.3) participants had taken when public hospitals and medical specialists were unavailable/inaccessible.

Figure 6.246: *Alternative Healthcare-seeking Behaviours for Primary Healthcare Services*

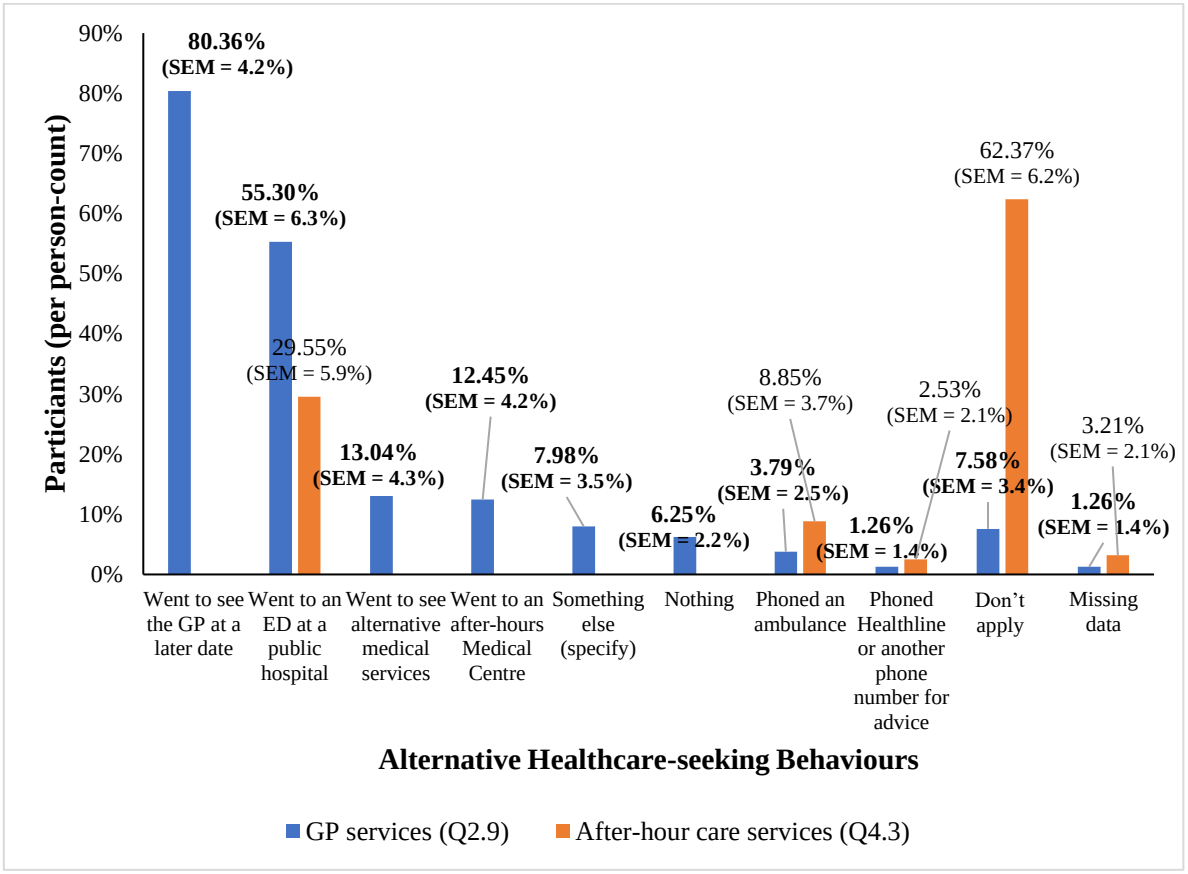
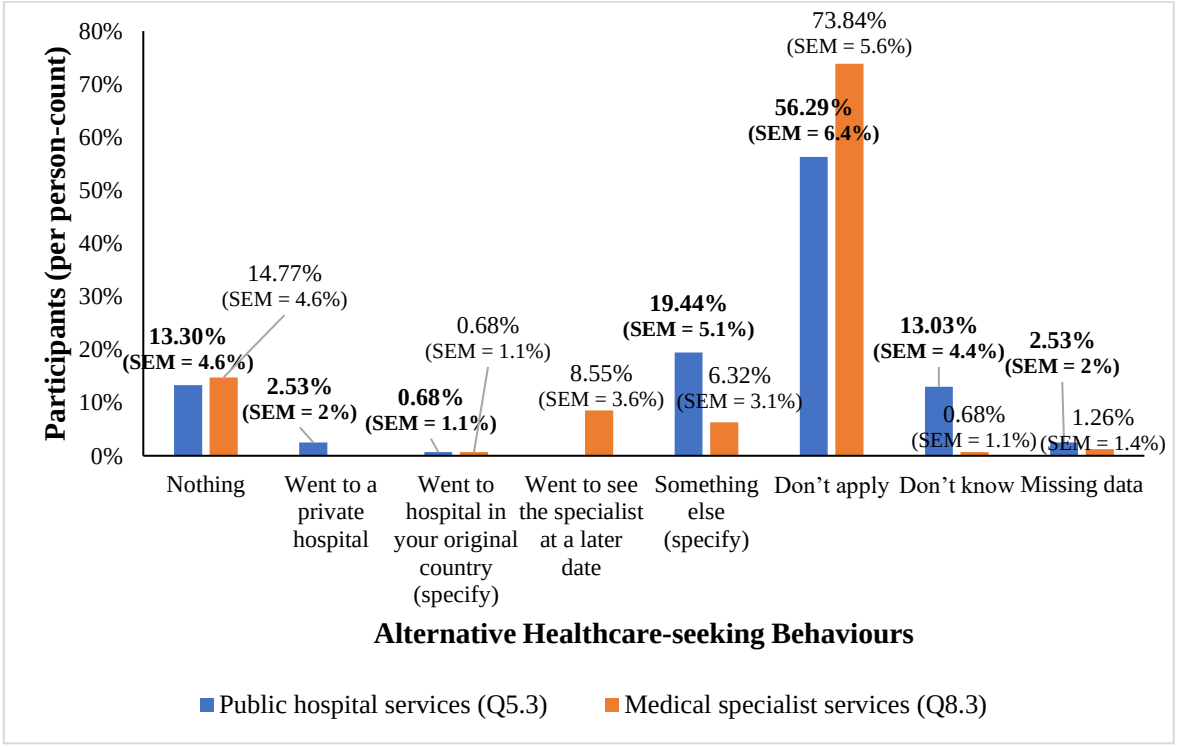
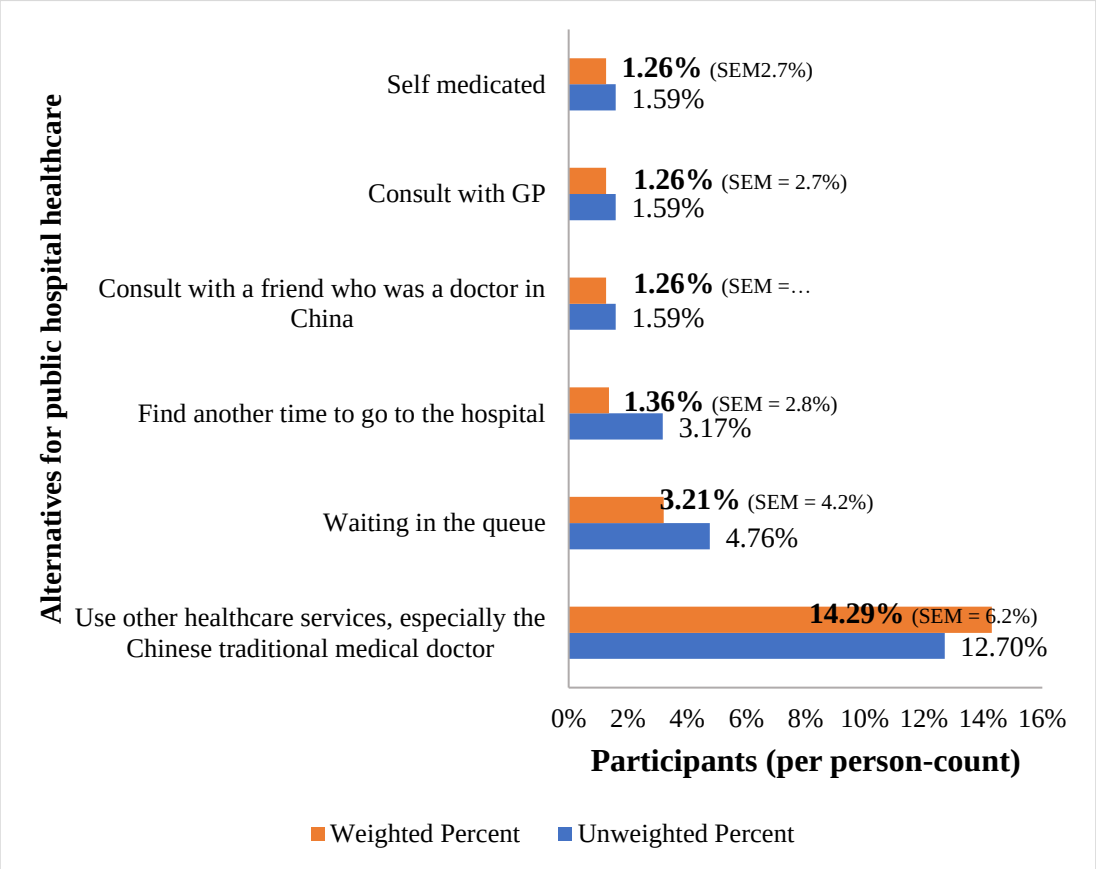


Figure 6.25: *Alternative Healthcare-seeking behaviours for Secondary and Tertiary Healthcare Services*



However, 13.30% of the weighted participants did nothing when public hospital services were unavailable/inaccessible (see Figure 6.25). Combining with previous outcomes (see Figures 6.25 and 6.26), this study found that other healthcare services, especially the Chinese traditional medical clinic, were the most frequently alternative healthcare-seeking behaviour participants used (14.29%). Meanwhile, 2.53% of the weighted participants chose to use private hospital services when public hospital services were unavailable/inaccessible. Additionally, over 19.44% gave their own stories (see Figure 6.25). Figure 6.26 shows that the other alternatives they decided to use include "*waiting in the queue*," "*visiting the public hospital at a late date*," "*consulting with a GP*," "*consulting with a friend who was a doctor in China*," and "*taking self-medication.*"

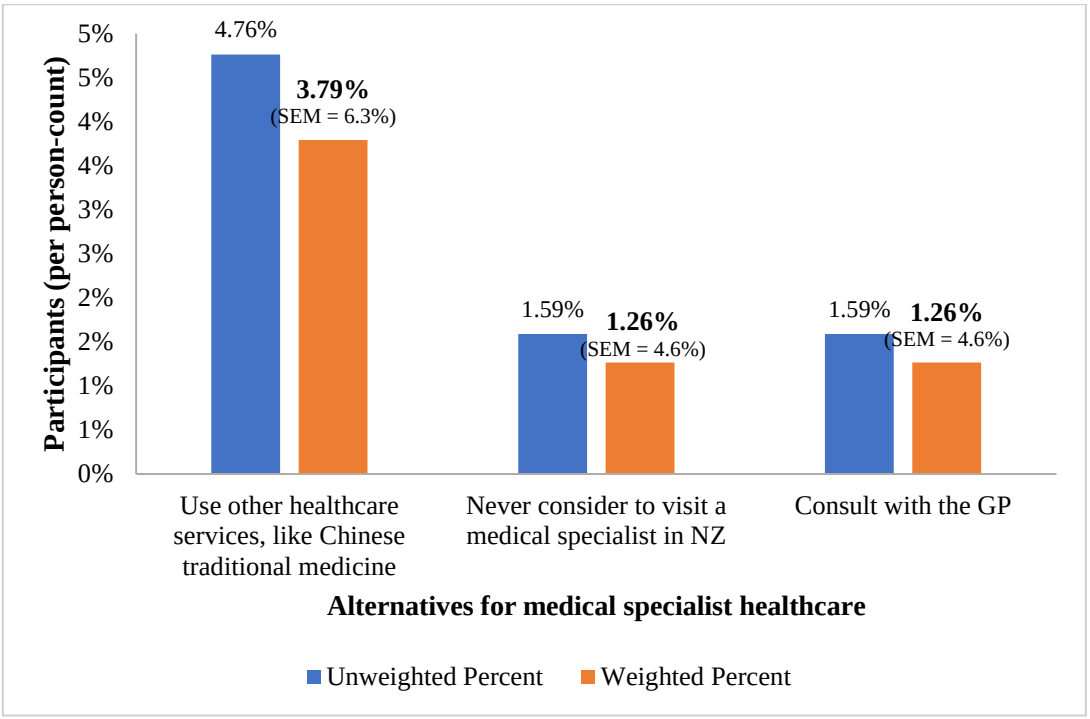
Figure 6.*26*: *Alternatives for Public Hospital Healthcare (Q5.3, Option - "Something Else (Specify)")*



A similar picture can be found in alternative healthcare-seeking behaviours for medical specialist services. When a medical specialist was unavailable/inaccessible, 14.77% of the weighted participants did nothing;

8.55% chose to see the specialist "*at a later date*" (see Figure 6.25); almost 4% used other healthcare providers; and 1.26% decided to "*consult with the GP*" (see Figure 6.26).

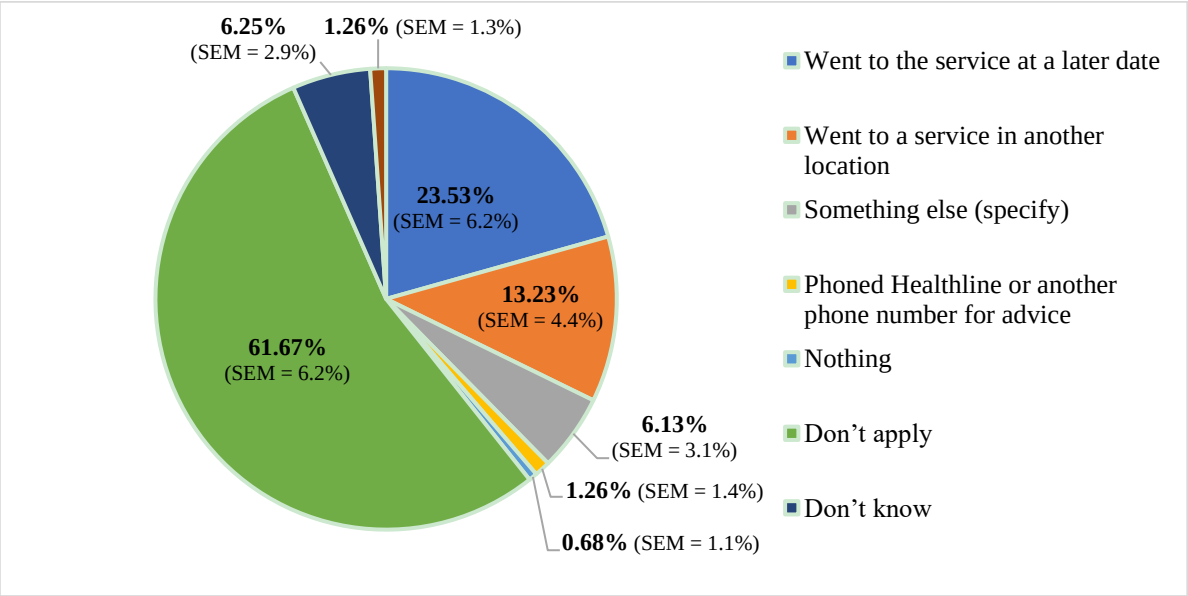
Figure 6.27: *Alternatives for Medical Specialist Healthcare (Q8.3, Option - "Something Else (Specify)")*



One interesting finding was that one participant indicated that they went back to China to use hospital healthcare services after "*waiting in the queue for more than three months*" in the public hospital system in Aotearoa NZ. The person stated, "*In China, I can see a doctor/specialist by going directly to the hospital without any waiting lists. Moreover, it is also easy to communicate with the doctor. Furthermore, I have medical insurance in China. So, it costs me very little money for the treatment.*"

When participants experienced difficulties accessing/utilising COVID-19-related services, nearly one-quarter chose to visit the same service "*later*" (see Figure 6.28). Over 13.23% used the same type of service "*in other locations*," while 1.26% phoned Healthline for advice. However, participants complained that it was hard to get through the Healthline. Additionally, 0.68% of the weighted participants did nothing when such services were unavailable/inaccessible, while 61.67% claimed they had not experienced any difficulties.

Figure 6.*28*: *Alternative Healthcare-seeking Behaviours for COVID-related Services (Q10.8)*



6.2.5 Unweighted vs. Weighted Outcomes

The numerical interpretation discussed above concentrates on the weighted findings. This section compares the differences between unweighted and weighted results to better understand this study's analysis method and survey findings.

The results are very similar, comparing the unweighted and weighted outcomes of the patterns of participants' healthcare utilisation (See Table 6-1 & 6-2) and the quality of care (see Figure 6.4 to 6.10, and Table 6-3 & 6-4). Most of the differences ranged between -6.29% and +7.94%. However, there are three exceptions, where the differences in the unweighted and weighted outcomes are over ±10% (See Table 6-1 & 6-2). The most significant gap is in utilising public hospital services (-13.69%). Followed by medical specialists (-13.24%) and physiotherapists (10.24%).

When looking into the unweighted and weighted outcomes of *barriers to interrupting* healthcare utilisation (see Table 6-5), most gaps ranged between -4.43% and 7.94%. Nevertheless, there are a few gaps in the unweighted and weighted outcomes, which are over ±10%. In "*barriers to using medical specialist services*" (Q8.4), the maximum gaps can be found in the barriers "*long waiting list*" (-14.29%), "*Chinese-speaking specialist was unavailable*" (-12.70%), and "*services were expensive/not affordable*" (-11.11%) (see Panel D

of Table 6-5). Meanwhile, Panel B of Table 6-5 shows that the difference between the unweighted and weighted outcomes of the barrier "*it was after-hours*" to stopping participants from visiting a GP clinic is over 12.34%. Furthermore, in *barriers to utilise primary healthcare services*" (Q1.3), the unweighted outcomes of the barrier "*there were not any appointments*" is 10.47% larger than the weighted outcomes (see Panel A of Table 6-5).

Overall, numerical outcomes in section 6.2 show that the differences between unweighted and weighted outcomes are minor. The most significant gap can be found in outcomes of the barrier to utilising medical specialists due to "*a long waiting list*." Followed by the patterns of using public hospital services and medical specialist services. The sample imbalance bias caused these differences between unweighted and weighted findings. Thus, the use of the weighting method in this study is necessary. By weighting the original survey data, the survey sample can be more in line with the population being studied.

6.2.6 Standard Error of Mean (SEM) and Missing Data

Standard error of the mean (SEM) is one of the most important statistics used to measure the accuracy of sample distribution in this survey study (phase two of the study). According to the numerical outcomes reported in section 6.2 (see Table 6-1 to 6-5, and Figure 6.1 to 6.28), most SEM for the weighted data is between 0.6% and 6.4%. The only exception is in Figures 6.21, 6.22, and 6.23 (*effect of the COVID-19 pandemic on healthcare utilisation*), where the SEM ranges between 8.9% and 20.2%. However, these estimates are still small. Little (2011) stated that a lower SEM has better precision and that the sample means are closely distributed around the population mean.

Meanwhile, the percentage of missing data in this dataset is small. It only occupies less than 2% of the dataset. The exceptions were found in the outcomes in Figure 6.19 (*quality of COVID-19-related care*), Figure 6.20 (*offer of COVID-19-related information*), Figure 6.21 to 6.23 (*effect of the COVID-19 pandemic on healthcare utilisation*), and Panel A of Table 6-5 (*barriers to utilising primary healthcare services*). The most significant proportion of missing data can be found in the answers to *the COVID-19 pandemic-affected medical specialist utilisation* (Q8.4, see Figure 6.22), which is 8.65%. Followed by the outcome of Q10.5 *Quality of COVID-19-*

related care (Q10.5, see Figure 6.19) and *the COVID-19 pandemic affected the nursing care utilisation* (Q3.3, see Figure 6.21), the missing data occupy 7.98% and 7.88%, respectively. Moreover, the missing data for *the COVID-19 pandemic affected after-hours services utilisation* (Q4.4, see Figure 6.21) is about 5.15%. However, the estimates are unlikely to be biased when less than 10% of data are missing (Bennett, 2001). The survey outcomes do not use any imputation method to fill in the missing data.

Analysis and interpretation of descriptive statistics in section 6.2 suggest the need for further exploration into the experiences of receiving healthcare services at different levels, which may, in turn, influence participants' healthcare-seeking behaviours. The following section describes and interprets the logistic regression findings that explore the effects of participants' predisposing and enabling factors on their healthcare utilisation of public hospitals and medical specialist services.

6.3 Binary Logistic Regression

In addition to the descriptive analysis, the binary logistic regression analysis was also employed to ascertain the association between participants' predisposing and enabling factors (Andersen's (1995) Behavioural Model) on their healthcare access and utilisation in Aotearoa NZ in the non-pandemic period and during the COVID-19 pandemic.

6.3.1 Determine Dependent Variables

Based on the outcomes from Table 6-1 in section 6.2.1, public hospital utilisation and medical specialist utilisation were the only two dependent variables with sufficient observations in each category that could be used to fit the binary logistic regression model. According to the outcomes of Table 6-1, 44.44% of unweighted participants have used public hospital services, while 53.97% have not. A similar picture can be found in visiting medical specialists. It is not valid to run a logistic regression on utilising GP care, nursing care, after-hours care, primary hospital care, ED, other healthcare, and COVID-related health/support services. This is because most participants reported using or not using such services. Specifically, over 80% of participants have used GP services, nursing services at a GP clinic, ED services at a public hospital, other health services

(other than formal healthcare), and COVID-related health/support services (see Table 6-1). Meanwhile, more than 74% of participants have yet to utilise after-hours care services and primary hospital services.

6.3.2 Determine Independent Variables

Following Andersen's Behavioural Model (Andersen et al., 2013) and current literature findings, this study used nine independent variables to conduct the binary logistic regression model. These independent variables were selected based on the socio-demographic characteristics collected by the pilot survey.

The independent variables that used in the logistic regression include survey participants' age group (X_1, which has 2 groups: age 65 - 74yrs, and age 75yrs and over), gender (X_2, which has 2 groups: male and female), civil status (X_3, which has 2 groups: married/partnered, and widowed), year-group lived in Aotearoa NZ (X_4, which has 3 groups: 10 -8yrs, 7 - 5yrs, and 4 - 2yrs), immigration status (X_5, which has 2 groups: citizen/PR and visit/work visa), highest qualification (X_6, which has 3 groups: primary school and middle school graduate certificate, high school graduate certificate, and college graduate certificate, college level adult tertiary education graduate certificate, and university degree), living with adult children (X_7, which has 3 groups: living alone, living with partner only, and living with adult children and/or grandchildren and/or partner), incomes (X_8, which has 2 groups: no income and have income), and health/medial insurances (X_9, which has 2 groups: no insurance and have insurances). According to Andersen's Behavioural Model (Andersen et al., 2013), independent variables X_1 to X_6 belong to predisposing factors, while X_7 to X_9 belong to enabling factors.

This study used SPSS software to run the simple logistic regression (see equation 9, section 3.5.5.4 in Chapter Three). Namely, it analysed the association between one independent variable and one dependent variable each time. It started with a logistic regression conducted using the original/unweighted data. It also tested the regression model using weighted data to reduce the sample bias. The weighting variable was identified and estimated in section 3.5.5.1. Using the "Weight Case" function in SPSS software, the original/unweighted data was weighted and then analysed. The regression analysis on weighted data (emerged weights with observations) provides results calibrated with the study population distributions and yields more representative

estimates. The regression outcomes are displayed in Tables 6-6 and 6-7. In this section, the interpretation focuses on the weighted outcomes.

6.3.3 Relationship between public hospital utilisation and individuals' predisposing and enabling factors

All tested predisposing factors from weighted data, except gender, have a statistically significant impact on participants' utilisation of public hospital service, with a few factors in the marginal range. In contrast, only one enabling factor, "*living with adult children*," was statistically significantly associated with their public hospital utilisation. Not all results were applied for multiple test corrections. The regression outcomes are displayed in Table 6-6. Panel A of Table 6-6 outlets the logistic regression analysis outcomes from unweighted data, while Panel B represents the weighted results.

Table 6-6: *Analysis of the Relationship between Public Hospital Utilisation and Predisposing/Enabling Factor*[15]

Panel A: Unweighted data

Logistic regression model: $\log\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_i(X_i)$

Variable	Nagelkerke R^2	Omnibus test		Overall Correct Classification	Variables in the Equation				
		Chi-square $X^2(4)$	P-value		β	p-value	Odd ratio EXP(β)	95% C.I. for EXP(β) lower	upper
Predisposing Factor									
Age group (X_1):	0.099	4.79	0.029 *	64.50%					
1) 65-74yrs ***(reference category)***									
2) 75yrs and over					1.165	0.032 *	3.205	1.106	9.288
Gender (X_2):	0.002	0.077	0.781	54.80%					
1) Male ***(reference category)***									
2) Female					-0.150	0.781	0.861	0.300	2.473
Civil/Marital status (X_3):	0.540	2.558	0.110	54.80%					
1) Married/Partnered ***(reference category)***									
2) Widowed					-1.099	0.129	0.333	0.081	1.378
Year-group lived in Aotearoa NZ (X_4):	0.217	10.951	0.004 *	69.40%					
1) 10-8yrs in Aotearoa NZ ***(reference category)***									
2) 7-5yrs in Aotearoa NZ					-1.476	0.014 *	0.229	0.070	0.746
3) 4-2yrs in Aotearoa NZ					-2.506	0.026 *	0.082	0.009	0.746

15 Notes: Table 6-6 shows the logistic functional relationship between individuals' predisposing and enabling factors and their healthcare utilisation of public hospital services in Aotearoa NZ, in the non-pandemic period and during the COVID-19 pandemic.

Nagelkerke R^2 illustrates the regression model's explanatory power. The Omnibus test evaluates the model's good-of-fitness. Correct classification examines the model's accuracy. Variability in Equation assesses the contribution of each independent variable in the model.

C.I. is a confidence interval, which means the estimate plus and minus the variation in that estimate. At a confidence level of 95% (95% C.I.), statistical significance is at a p-value of 0.05. The significance is indicated to the right of Chi-Square and Wald.

* Indicates significance at 5% level.

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Immigration status (X_5):	0.165	8.142	0.004 *	59.70%					
1) Citizen & PR ***(reference category)***									
2) Visitor Visa					-2.420	0.026*	0.089	0.011	0.746
Highest Qualification (X_6):	0.083	13.053	0.001 *	77.80%					
1) Primary School + middle school Graduate Certificate ***(reference category)***									
2) High School Graduate Certificate					-1.489	0.060	0.226	0.048	1.067
3) College Graduate Certificate +University Degree + College Level Adult Tertiary Education					-0.934	0.247	0.393	0.081	1.909
Enabling Factor									
Living with adult children (X_7):	0.182	9.042	0.011 *	67.70%					
1) Living with adult children and/or grandchildren and/or partner ***(reference category)***									
2) Living with a partner only					1.609	0.015 *	5.000	1.363	18.348
3) Living alone					-1.099	0.337	0.333	0.035	3.132
Income (X_8):	0.001	0.027	0.868	55.70%					
1) No income ***(reference category)***									
2) Have income					-0.238	0.868	0.788	0.047	13.206
Health/medical insurance (X_9):	0.095	3.639	0.056	77.00%					
1) No insurance ***(reference category)***									
2) Have insurance					1.399	0.071	4.052	0.887	18.513

Panel B: Weighted data (use SPSS "Weight Case" function to weight the original data)

Variable	Nagelkerke R^2	Omnibus test		Overall Correct Classification	Variables in the Equation				
		Chi-square $X^2(4)$	P-value		β	p-value	Odd ratio EXP(β)	95% C.I. for EXP(β) lower	upper
Predisposing Factor									
Age group (X_1):	0.106	4.885	0.027 *	72.30%					
1) 65-74yrs ***(reference category)***									
2) 75yrs and over					1.524	0.030 *	4.589	1.163	18.113
Gender (X_2):	0.063	2.863	0.091	68.50%					
1) Male ***(reference category)***									
2) Female					0.937	0.096	2.552	0.847	7.687
Civil/Marital status (X_3):	0.149	6.975	0.008 *	68.50%					
1) Married/Partnered ***(reference category)***									
2) Widowed					-2.237	0.040 *	0.107	0.013	0.902
Year-group lived in Aotearoa NZ (X_4):	0.192	9.151	0.01 *	68.50%					
1) 10-8yrs in Aotearoa NZ ***(reference category)***									
2) 7-5yrs in Aotearoa NZ					-1.535	0.022 *	0.216	0.058	0.801
3) 4-2yrs in Aotearoa NZ					-2.652	0.100	0.071	0.003	1.668
Immigration status (X_5):	0.169	7.967	0.005 *	68.50%					
1) Citizen & PR ***(reference category)***									
2) Visitor Visa					-2.486	0.037 *	0.083	0.008	0.856
Highest Qualification (X_6):	0.266	13.053	0.001 *	77.80%					
1) Primary School + middle school Graduate Certificate ***(reference category)***									
2) High School Graduate Certificate					-3.342	0.004 *	0.035	0.004	0.335
3) College Graduate Certificate +University Degree + College Level Adult Tertiary Education					-2.702	0.019 *	0.067	0.007	0.646

Enabling Factor									
Living with adult children (X_7):	0.277	13.696	0.001 *	77.60%					
1) Living with adult children and/or grandchildren and/or partner ***(reference category)***									
2) Living with a partner only					2.040	0.002 *	7.693	2.127	27.824
3) Living alone					-1.406	0.387	0.245	0.010	5.927
Income (X_8):	0.006	0.268	0.605	69.40%					
1) No income ***(reference category)***									
2) Have income					-0.844	0.600	0.430	0.018	10.081
Health/medical insurance (X_9):	0.087	3.639	0.056	77.00%					
1) No insurance **(reference category)**									
2) Have insurance					1.442	0.095	4.230	0.780	22.945

6.3.3.1 Effects of personal predisposing factors on public hospital utilisation

In the following summary, Xi represents the independent variable. The probability of the dependent variable is *public hospital utilisation.* β_0 represents the regression coefficient for intercept in the logistic regression. β_1, β_2, β_3, β_4, β_5, and β_6 represent the regression coefficient for age, gender, married/civil status, year-group lived in Aotearoa NZ, immigration status, highest qualification, respectively.

Age group (X_1)

This study performed the simple binary logistic regression model, $\log\left(\frac{p_1}{1-p_1}\right) = \beta_0 + \beta_1(X_1)$, to evaluate the impacts of participants' age group on the likelihood of using public hospital services in Aotearoa NZ, in the non-pandemic period and during the COVID-19 pandemic. Based on the analysis of weighted data, the logistic regression model was statistically significant, $X_1^2(4) = 4.885$, $p < 0.05$ (see Panel B of Table 6-6). Panel B of Table 6-6 also shows Nagelkerke R^2 equal to 0.106, which indicates the model can explain 10.60% of the variance in participants' public hospital utilisation. Furthermore, individuals 75 years old and over were 4.5 times more likely to use public hospital services than those between 65 and 74 years old. Namely, increasing age was associated with an increased likelihood of using public hospital services.

Gender (X_2)

According to the outcomes from Panel A and Panel B of Table 6-6, this study discovered no statistically significant relationship between individuals' gender and the use of public hospital services. The P-values for the Omnibus and Wald tests are more significant than 0.05, which is consistent with previous literature.

Civil/marital status (X_3)

When assessing the impacts of civil or marital status on the likelihood of using public hospital services, the simple logistic regression model ($\log\left(\frac{p_3}{1-p_3}\right) = \beta_0 + \beta_3(X_3)$) indicates a statistically significant association. The Chi-Square ($X_3^2(4)$) is 6.975, with a P-value of 0.008 (see Panel B of Table 6-6). Panel B of Table 6-6 also indicates that the model can interpret 14.90% (Nagelkerke R^2) of the variance in participants' public

hospital utilisation. Additionally, widowed individuals were 0.1 times less likely to utilise public hospital services than married/partnered ones.

Year-group lived in Aotearoa NZ (X_4)

According to the results in Table 6-6, the binary logistic regression model $\log\left(\frac{p_4}{1-p_4}\right) = \beta_0 + \beta_4(X_4)$ was statistically significant ($X_4^2(4) = 9.151$, $p < 0.05$). Nagelkerke R^2 indicates this model interpreted 19.20% of the variance in using public hospital services in Aotearoa NZ in non-pandemic and COVID-19 pandemic circumstances. Furthermore, increasing years lived in Aotearoa NZ was related to an increased likelihood of using public hospital services. When measuring the contribution of the independent/predictor variable in the model, the result from the model identified that participants who have lived in Aotearoa NZ between 5 and 7 years were 0.2 times less likely to utilise public hospitals than those who lived in Aotearoa NZ between 8 and 10 years.

Immigration status (X_5)

A simple binary logistic regression, $\log\left(\frac{p_5}{1-p_5}\right) = \beta_0 + \beta_5(X_5)$, was also applied to measure the impacts of participants' immigration status on the likelihood of utilising NZ public hospital services during the target period. Panel B of Table 6-6 shows the logistic regression model was statistically significant, $X_5^2(4) = 7.967$, $p < 0.05$. R^2 indicates that the model explained 16.90% of the variance in participants' public hospital utilisation. Moreover, the Wald test determined that individuals with a visitor visa were 0.1 times less likely to utilise public hospitals than those with an NZ citizenship or permanent resident visa.

Highest qualification (X_6)

The simple logistic regression ($\log\left(\frac{p_6}{1-p_6}\right) = \beta_0 + \beta_6(X_6)$) was then used to test whether individuals' highest qualification (X_6) affected their healthcare utilisation of public hospital services in Aotearoa NZ during the non-pandemic period and during the COVID-19 pandemic. According to the outcomes of Panel B of Table 6-6, the logistic regression model was statistically significant, $X_6^2(4) = 13.053$, $p < 0.05$. The model expounded

26.60% (Nagelkerke R^2) of participants' public hospital utilisation variance. It indicated that the higher qualification individuals got, the less likely they were to use public hospital services.

6.3.3.2 Effects of personal enabling factors - living with adult children (X_7) - on public hospital utilisation

This study applied the simple logistic regression model ($\log\left(\frac{p_7}{1-p_7}\right) = \beta_0 + \beta_7(X_7)$) to assess the relationship between individuals' accommodation status (whether living together with a support person) and public hospital utilisation. Where X_7 represents independent variable - *living with adult children*. p is the probability of the dependent variable - *public hospital utilisation*. β_0 represents the regression coefficient for intercept in the logistic regression. β_7 represents the regression coefficient for the independent variable.

Overall, the model was statistically significant, $X_7^2(4) = 13.696$, $p < 0.05$ (see Panel B of Table 6-6). This model interpreted 27.70% (Nagelkerke R^2) of the variance in participants' public hospital utilisation, which was the highest among all independent variables. Additionally, individuals who lived with a partner were 7.8 times more likely to use public hospital services than those living with adult children and/or grandchildren and/or a partner.

6.3.4 Relationship between medical specialist utilisation and individuals' predisposing and enabling factors

Following the statistical procedure discussed above, this study applied the simple binary logistic regression model to evaluate the influences of individuals' predisposing (*age group* (X_1), *gender* (X_2), *civil/marital status* (X_3), *years-group in Aotearoa NZ* (X_4), and *immigration status* (X_5)) and enabling factors (*living with adult children* (X_7) and *health/medical insurance* (X_9)) on visiting medical specialists. X_5 (*immigration status*) and X_8 (*income*) were not used as independent variables in this logistic regression model because they had a very minimal number of participants within their categories and did not provide valid results.

Overall, the weighted model identified one individual predisposing factor (X_6 *highest qualification*) and one enabling factor (X_7 *living with adult children*), significantly associated with medical specialist utilisation. The

regression outcomes were displayed in Table 6-7. Panel A of Table 6-7 represents the logistic regression analysis on unweighted data, while Panel B summarises the weighted data results. Where X_i represents independent variable. p is the probability of the dependent variable – *medical specialist utilisation*. β_0 represents the regression coefficient for intercept in the logistic regression. β_6 and β_7 represents the regression coefficient for *highest qualification* and *living with adult children*, respectively. In this section, the interpretation only focuses on the weighted outcomes.

According to the outcomes of Panel B of Table 6-7, X_6 (*highest qualification*) are significantly associated with the outcome variable, the Chi-Square for X_6 is 6.987 with a p-value of 0.03. The model, $\log\left(\frac{p_6}{1-p_6}\right) = \beta_0 + \beta_6(X_6)$, expounded 15.30% of the variance in participants' medical specialist utilisation. Like the association between X_6 and public hospital utilisation (see section 6.3.1.1), the higher qualification was associated with a reduction in the likelihood of visiting a medical specialist. Individuals who graduated from high school, college/university, or a college-level adult tertiary education school were 0.1 times less likely to utilise medical specialist services in Aotearoa NZ than those who only graduated from primary or middle school.

Meanwhile, X_7 (*living with adult children*) also shows a significant association with the likelihood of visiting medical specialists, $X_7^2(4) = 8.866$, $p < 0.05$ (see panel B of Table 6-7). Nagelkerke R^2 indicates the model can explain 19.10% of the variance in participants' medical specialist utilisation and correctly classified 75.00% of cases. Individuals who lived with a partner only were 6.7 times more likely to use public hospital services than those living with adult children and/or grandchildren and/or a partner.

Table 6-7: *Analysis of the Relationship between Predisposing/Enabling Factors and Medical Specialist Utilisation*[16]

Panel A: Unweighted data

Logistic regression model:

$$\log\left(\frac{p_i}{1-p_i}\right) = \beta_0 + \beta_i(X_i)$$

Variable	R^2	Omnibus test		Overall Correct Classification	Variables in the Equation				
		Chi-square $X^2(4)$	P-value		β	p-value	Odd ratio EXP(β)	95% C.I. for EXP(β) lower	upper
Predisposing Factor									
Age group (X_1):	0.079	3.679	0.055	63.90%					
1) 65-74yrs ***(reference category)***									
2) 75yrs and over					1.036	0.058	2.817	0.965	8.222
Gender (X_2):	0.000	0.012	0.913	59.00%					
1) Male ***(reference category)***									
2) Female					0.061	0.913	1.062	0.358	3.158
Civil/Marital status (X_3):	0.036	1.656	0.198	59.00%					
1) Married/Partnered ***(reference category)***									
2) Widowed					-0.894	0.218	0.409	0.099	1.697

16 Notes: Tables 6-7 show the logistic functional relationship between individuals' predisposing/enabling factor and their healthcare utilisation of medical specialist services in Aotearoa NZ during the non-pandemic period and during the COVID-19 pandemic.

R^2 (Nagelkerke R^2) illustrates the regression model's explanatory power. The Omnibus test evaluates the model's good-of-fitness. Correct classification examines the model's accuracy. Variability in Equation assesses the contribution of each independent variable in the model.

C.I. is a confidence interval, which means the estimate plus and minus the variation in that estimate. At a confidence level of 95% (95% C.I.), statistical significance at a p-value of 0.05. The significance is indicated to the right of Chi-Square and Wald.

* Indicates significance at 5% lever.

Year-group lived in Aotearoa NZ (X_4):	0.131	6.226	0.044 *	63.90%					
1) 10-8yrs in Aotearoa NZ ***(reference category)***									
2) 7-5yrs in Aotearoa NZ					-1.099	0.065	0.333	0.104	1.073
3) 4-2yrs in Aotearoa NZ					-1.974	0.082	0.139	0.015	1.285
Highest Qualification (X_6):	0.016	0.74	0.690	59.00%					
1) Primary School + middle school Graduate Certificate ***(reference category)***									
2) High School Graduate Certificate					-0.288	0.697	0.750	0.176	3.191
3) College Graduate Certificate +University Degree + College Level Adult Tertiary Education					-0.629	0.414	0.533	0.118	2.408
Enabling Factor									
Living with adult children (X_7):	0.105	4.937	0.085	66.30%					
1) Living with adult children and/or grandchildren and/or partner ***(reference category)***									
2) Living with a partner only					1.322	0.034 *	3.750	1.108	12.694
3) Living alone					0.811	0.361	2.250	0.395	12.803
Health/medical insurance (X_9)	0.008	0.378	0.539	60.00%					
1) No insurance ***(reference category)***									
2) Have insurance					0.470	0.538	1.600	0.359	7.130

Panel B: Weighted data (use SPSS "Weight Case" function to weight the original data)

Variable	R2	Omnibus test		Overall Correct Classification	Variables in the Equation (f)				
		Chi-square X2(4)	P-value		β	p-value	Odd ratio EXP(β)	95% C.I. for EXP(β)	
								lower	upper
Predisposing Factor									
Age group (X_1):	0.083	3.717	0.054	72.60%					
1) 65-74yrs ***(reference category)***									
2) 75yrs and over					1.354	0.054	3.871	0.978	15.315
Gender (X_2):	0.065	2.892	0.089	71.00%					
1) Male ***(reference category)***									
2) Female					0.969	0.095	2.635	0.845	8.221
Civil/Marital status (X_3):	0.101	4.536	0.033 *	71.00%					
1) Married/Partnered ***(reference category)***									
2) Widowed					-1.718	0.072	0.179	0.028	1.165
Year-group lived in Aotearoa NZ (X_4):	0.100	4.493	0.106	71.00%					
1) 10-8yrs in Aotearoa NZ ***(reference category)***									
2) 7-5yrs in Aotearoa NZ					-1.121	0.087	0.326	0.090	1.178
3) 4-2yrs in Aotearoa NZ					-1.622	0.193	0.198	0.017	2.266
Highest qualification (X_6):	0.153	6.987	0.03 *	76.40%					
1) Primary School + middle school Graduate Certificate ***(reference category)***									
2) High School Graduate Certificate					-2.124	0.017 *	0.120	0.021	0.688
3) College Graduate Certificate +University Degree + College Level Adult Tertiary Education					-2.120	0.024 *	0.120	0.019	0.761

Enabling Factor									
Living with adult children (X_7):	0.191	8.866	0.012 *	75.00%					
1) Living with adult children and/or grandchildren and/or partner ***(reference category)***									
2) Living with a partner only					1.901	0.004 *	6.693	1.839	24.366
3) Living alone					0.689	0.463	1.992	0.316	12.549
Health/medical insurance (X_9)	0.016	0.649	0.421	75.20%					
1) No insurance ***(reference category)***									
2) Have insurance					0.860	0.407	2.362	0.309	18.046

6.3.5 Unweighted vs. Weighted Regression Outcomes

Overall, most regression models had a few noticeable differences between unweighted and weighted outcomes (see Table 6-6 & 6-7).

Table 6-6 shows that the unweighted and weighted data produced similar outcomes for independent variables, which comprise *age group* (X_1), *year-group lived in Aotearoa NZ* (X_4), *immigration status* (X_5), and *living together with support person* (X_7). In these regression models, the most noticeable difference between unweighted and weighted outcomes was some of the upper values of 95% confidence interval (C.I.) for independent variables' odd ratio. The wider intervals (upper and lower values) could be caused by the induced uncertainties from those categories of much smaller participants compared to the study population. Moreover, Table 6-6 also reports that the *civil/marital status* (X_3) and *highest qualification* (X_6) of participants were significantly associated with the likelihood of public hospital utilisation from both the weighted data and the unweighted data. For the other variables, there was no statistical significance can be found in the effects of *gender* (X_2), *income* (X_8), and *health/medical insurance* (X_9) on public hospital utilisation from both unweighted and weighted results.

In contrast, Table 6-7 explores a different picture of the gap between unweighted and weighted outcomes. Comparing unweighted to weighted data results indicated an observable difference in X_6 (*highest qualification*) (see Table 6-7). The highest qualification of participants was significantly associated with the likelihood of medical specialist utilisation from the weighted data but not from the unweighted data. Additionally, other predisposing factors (*age group* (X_1), *gender*(X_2), *civil/marital status* (X_3), and *Year-group lived in Aotearoa NZ* (X_4)) and the enabling factor (*health/medical insurance* (X_9)) were not significantly associated with the likelihood of medical specialist utilisation from both unweighted and weighted results.

6.4 Summary

In summary, participants have utilised all levels of formal healthcare services (including primary, secondary, and tertiary healthcare services), other healthcare services, as well as COVID-related health and support services in Aotearoa NZ, in the non-pandemic period and during the COVID-19 pandemic circumstances.

Except for the healthcare at ED services, most participants were satisfied with the care they received. Many participants had experienced difficulties/barriers when they wanted to use healthcare services (especially ED services) in times of emergency. The common barriers to accessing participants' primary healthcare utilisation include unavailable/unsuitable appointments and personal preferences for a particular healthcare. On the other hand, the most common barriers to using secondary/tertiary, other informal care, and COVID-related services were unaffordable cost, prolonged waiting times/lists, lack of knowledge to access the services, language barriers, and transportation issues. Participants have used alternative official and/or informal healthcare services for their health conditions when experiencing difficulties in accessing/utilising primary healthcare (including GP clinics and after-hours medical centres).

The pilot survey findings show valuable information related to participants' behaviours and attitudes toward healthcare utilisation. Firstly, Section 6.2.1 (*Patterns of Participants' Healthcare Utilisation*) findings report a higher recognition rate of GP, ED, and COVID-19 vaccination services and a lower rate of utilisation of after-hours care and private hospitals. The most common reason for participants to use ED services is the time of the day. Secondary findings from Section 6.2.2 (*Quality of Healthcare*) indicate that many participants had a poor waiting experience at the ED. Several participants reported needing assistance when calling the clinic to book an appointment or request a repeat prescription. Thirdly, Section 6.2.3 (*Barriers to Healthcare Utilisation*) reports more exciting findings about the barriers to utilising healthcare services at different levels. 1) "*After-hours*," an unavailable/inaccessible barrier, is essential in preventing participants from visiting a GP clinic. 2) A long waiting list/time was the most essential sociocultural barrier interrupting participants using ED services at a public hospital. 3) A lack of knowledge of the availability and accessibility of the healthcare services in Aotearoa NZ, is another crucial barrier to utilising all formal and informal healthcare services. 4) The "*consideration of cost*" (affordability) does not seem to be an issue for participants who use GP services. However, cost needs to be improved to allow participants to utilise secondary/ tertiary and other healthcare services. 5) A few participants indicated that a poor previous experience had prevented them from using the same GP and ED services in future. 6) The ongoing pandemic became an unavailable/inaccessible barrier that prevented participants from visiting all types of healthcare services in Aotearoa NZ. Finally, Section 6.2.4

(*Alternative Healthcare-seeking Behaviours*) found that participants' everyday alternative actions were closely related to the barriers that prevented them from using such services.

Moreover, binary logistic regression was performed to evaluate the effect of predisposing and enabling factors on the likelihood of utilising public hospital and medical specialist services in Aotearoa NZ in the non-pandemic period and during the COVID-19 pandemic. Overall, participants' healthcare utilisation of public hospital services was more likely affected by their predisposing factors (including *highest qualification*, *immigration status*, *civil/marital status*, *year-group lived in Aotearoa NZ*, and *age group*) and the enabling factor (*living with adult children*). Meanwhile, the likelihood of visiting a medical specialist was only statistically significantly associated with participants' enabling factors (*living with adult children*) and predisposing factors (*highest qualification*). More context around these findings is critically discussed in depth in the Discussion Chapter.

CHAPTER 7: DISCUSSION AND CONCLUSION

7.1 Introduction

Healthcare access and utilisation among migrants, especially late-life migrants, continues to be a highly important consideration in the migrant health area. Obviously, there are expected difficulties in accessing and utilising healthcare services among migrants. Existing studies have identified various individual, interpersonal, community, and policy factors affecting migrants' health behaviour and healthcare utilisation.

This mixed-methods study delves into the healthcare experiences of Chinese late-life migrant participants, shedding light on their healthcare access and utilisation journey since their arrival in Aotearoa NZ, in both non-pandemic and COVID-19 pandemic environments. It uncovers crucial insights about the expectations or needs of healthcare among Chinese late-life migrants in the Aotearoa NZ context. The primary research objectives were:

1) to explore the possible factors that inform recently arrived Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ, in the face of non-pandemic and COVID-19 pandemic environments;

2) to modify and pilot a nationally administered survey on the health service access and utilisation and patient experiences of recently arrived Chinese late-life migrants in Aotearoa NZ, in the non-pandemic and COVID-19 pandemic circumstances; and

3) to propose actionable recommendations for enhancing health service access and utilisation for Chinese late-life migrants and their families in the face of non-pandemic and future pandemic environments.

This investigation encompasses access and use of primary, secondary, and tertiary care facilities, alternative/other healthcare services, and COVID-19-related healthcare/support services among recently arrived Chinese late-life migrants.

To effectively meet the research objectives, this chapter is structured into three main sections. First, it presents a comprehensive analysis of the first research objective by integrating the qualitative themes from phase one with the key quantitative results from phase two. It then compares and contrasts the integrated findings of this

study with existing global and national literature, and discusses the key insights of the findings within the Aotearoa NZ context. Second, to address the second research objective, this chapter summarises how the current study designed and developed a pilot survey for health service utilisation and patient experiences following an exploratory sequential mixed-methods framework. Third, this chapter outlines the current study's strengths and limitations and finally makes recommendations for healthcare education, practice, policy, and the design of population and methods of future studies (third research objective).

As previously discussed in Chapter Three (Research Methodology and Method), this chapter employed Andersen's Behavioural Model of Healthcare Service Utilisation (Andersen et al., 2013) as a theoretical framework to discuss and synthesise the findings from this study and existing literature. This framework helps to identify specific barriers and facilitators to healthcare access, providing insights for healthcare providers, educators, researchers, and policymakers to develop targeted interventions.

7.2 Integrating Phase One and Phase Two Findings to Identify Factors Affecting Healthcare Access and Utilisation

By taking a comprehensive approach by integrating qualitative themes (phase one findings) and the descriptive statistical analysis of participants' answers to survey questions (phase two findings), this study revealed that Chinese late-life participants encounter various barriers in accessing and utilising all levels of formal healthcare services, other healthcare services, as well as the COVID-related health and support services in Aotearoa NZ, in the face of non-pandemic and the COVID-19 pandemic circumstances. This section presents a comparison and contrast of the qualitative themes (phase one findings) with the statistical results (phase two findings). To address the first research objective, these integrated findings from this study were then incorporated within Andersen's Behavioural Model (Andersen et al., 2013), revealing the predisposing characteristics, enabling resources, and healthcare needs factors influencing healthcare access and utilisation among recently arrived Chinese late-life migrants in Aotearoa NZ, in the context of non-pandemic and COVID-19 pandemic circumstances.

7.2.1 Community Enabling Resources

Consistent with Theme One ("It is the Little Things that Matter the Most") in phase one, survey participants in phase two identified "Time Matters" (subtheme of Theme One, see Section 4.4 in Chapter Four) as a significant barrier to healthcare utilisation across all levels of healthcare services in Aotearoa NZ. Chapter Six (phase two findings) reported that many survey participants chose not to use GP services (primary healthcare services) due to "unavailable/unsuitable appointments" (75.53% of participants) and "after-hours" (48.85%). Additionally, "long waiting times/lists" emerged as a critical barrier for those using ED services at public hospitals (77.78%), public hospital care services (19.51%), specialists (8.55%), and COVID-related services (21.79%).

Moreover, the quantitative survey findings also supported the qualitative insights of Theme One ("It is the Little Things that Matter the Most") and its subthemes, such as Location of Healthcare Services, Availability of Chinese-speaking Healthcare Practitioners, and Difficulty in Getting Translations (see Section 4.4 in Chapter Four). Although lack of these community-enabling resource factors was not considered major barriers individually, they collectively increased the challenges in accessing and utilising local healthcare services among both interview and survey participants, particularly for secondary/tertiary healthcare and other informal care. According to the survey findings from Chapter Six, a substantial number of survey participants experienced difficulties in accessing and utilising ED care, other informal care, and public hospital care services due to "no transport to get there," with 41.18%, 39.37%, and 24.68% of participants reporting this issue, respectively. Additionally, the "lack of Chinese-speaking practitioners and/or translator services" was another common barrier, impacting 46.34% of survey participants accessing ED services, 26.23% using other informal care services (e.g., Chinese traditional medicine, Chinese acupuncture), 22.93% visiting public hospital services, and 10.30% utilising COVID-related healthcare and support services.

The combined effect of these barriers - time constraints, transportation issues, and language challenges - illustrates the complex and multifaceted nature of healthcare accessibility for this population. Understanding and addressing these unique needs is crucial, necessitating targeted interventions to improve their healthcare experiences and outcomes.

7.2.2 Predisposing Factors – Language and Communication Competences

Theme Two (Fractured Patient-Practitioner Relationships) from phase one (see Section 4.5 in Chapter Four) did not entirely align with the findings from the survey in phase two (see Chapter Six). These discrepancies between the two phases illuminate the diverse experiences across different levels of healthcare services, offering a nuanced understanding of the research process and its implications.

Unlike what described in the Theme Two, almost all survey participants in phase two expressed high satisfaction with their relationships with healthcare providers in primary healthcare services, such as GP services, and COVID-19-related healthcare and support services. Survey participants reported that their healthcare practitioners consistently "explained conditions/treatments in an understandable way," with 57.14% rating this as good and 27.21% rating it as very good. They also felt that their practitioners "gave enough information to help manage their health concerns," with 74.60% indicating they received some extent of enough information and 17.46% receiving sufficient information. Furthermore, participants noted that their healthcare providers "involved them in the decision-making process," with 59.87% rating this as good and 21.18% rating it as very good. The recently arrived Chinese late-life migrant participants also remarked that their healthcare practitioners "showed respect and dignity," with 59.97% rating this as good and 24.28% rating it as very good, and expressed a high level of trust in their healthcare practitioners, with over 96% indicating trust.

Consistent with phase one findings, survey participants in phase two were less satisfied with their experiences in secondary and tertiary healthcare services, especially in the ED care setting. Nearly 30% of survey participants reported a poor experience when visiting an ED service in Aotearoa NZ. They indicated they needed to be given a clear explanation about how long they would need to wait at the ED, the lack of which contributed to their dissatisfaction. This lack of communication regarding wait times is a significant issue in using ED services. It may point to broader challenges in the patient-practitioner relationships within secondary and tertiary care settings.

These findings underscore the importance of effective patient, in this study Chinese late-life migrants communicate with their health practitioners, involvement in decision-making, and being show respect in healthcare settings. Addressing the communication issues and ensuring patient-centred care within healthcare settings could significantly enhance the overall healthcare experience for recently arrived Chinese late-life migrants in Aotearoa NZ, ensuring that their needs and expectations are met across all levels of the healthcare system.

7.2.3 Predisposing Factors – Cultural Beliefs

In line with Theme Three (Cultural Beliefs and Attitudes Towards Healthcare Access and Utilisation) from phase one, phase two findings revealed that cultural beliefs significantly hindered survey participants' utilisation of secondary and tertiary healthcare services, particularly hospital care. Moreover, the survey (phase two) findings indicated that participants' cultural beliefs played a crucial role in their decisions to use alternative official and/or informal healthcare services. Specifically, over 14% of Chinese late-life participants often opted for Traditional Chinese Medicine (TCM) when they faced difficulties accessing or utilising secondary and tertiary healthcare services. This preference for TCM underscores the strong influence of cultural beliefs on healthcare choices within the Chinese community.

Interestingly, the survey (phase two) findings also highlighted certain cultural beliefs identified in phase one, such as "Don't Want to Be a Burden" and "Attitudes towards Financial Consideration" (subthemes of Theme Three, see section 4.6 in Chapter Four), did not appear to be barriers for survey participants when it came to using GP services and COVID-19-related services. This finding is inconsistent with Theme Three from phase one. This difference may relate to the cost across different levels of healthcare services in Aotearoa NZ. Financial considerations become more relevant in secondary and tertiary healthcare services, where costs and perceived burdens are typically higher. For many Chinese late-life migrants, financial constraints can significantly influence their healthcare decisions, making them more cautious about using expensive secondary and tertiary services. However, for GP and COVID-19-related services, which are often more accessible and affordable, these concerns may not be as prominent, allowing participants to seek necessary care without the same level of financial worry or fear of burdening others.

7.2.4 Personal Enabling Resources

Consistent with Theme Four from phase one (Desire for Healthcare Information), the survey (phase two) findings underscore a lack of familiarity with the healthcare services available in Aotearoa NZ, which is a significant barrier to utilising all levels of healthcare services. This is particularly relevant for healthcare policymakers, as it points to a need for improved information dissemination to address this gap. The findings reveal that recently arrived Chinese late-life migrants have a limited understanding of the availability and accessibility of various care services within the Aotearoa NZ health system. The pilot survey (phase two) found that recognition rates were higher for GP (97.48%), ED (86.20%), and COVID-vaccination services (95.83%). However, recognition rates were significantly lower for after-hours care (22.66%) and private hospital services (2.53%), indicating these areas as the most critical for immediate attention.

This lack of awareness signifies a substantial gap in the dissemination of public healthcare information of service available and suitability, which can lead to underutilisation of healthcare services and potentially exacerbate health issues due to delays in receiving appropriate care. The implications are significant-many Chinese late-life participants expressed a need for guidance about where to seek help during emergencies after hours or when requiring specialised medical attention not provided by public hospitals.

7.3 Factors Affecting Recently Arrived Chinese Late-life Migrants' Healthcare Access and Utilisation

The debate on strategies for protecting migrant health has taken shape in recent years around the crucial issue of accessing and utilising healthcare services. Migrants were described as a vulnerable group that often have limited access and utilisation to healthcare in host countries compared with non-immigrants in countries (Carruth et al., 2021; Savas et al., 2024; Spitzer et al., 2019). Many existing global studies argued that migrants' predisposing characteristics (including demographic characteristics, language competence, and cultural beliefs), personal enabling resources (such as family and social support, financial means and health/medical insurance, and knowledge to access healthcare services), community enabling resources (like location of the services and availability of healthcare providers), and health need related factors (Baglio et al., 2019; Hiam et

al., 2019) created health risks and impeded access to needed care among migrant groups (Baglio et al., 2019; Carruth et al., 2021; Hiam et al., 2019; Mao et al., 2020; Savas et al., 2024; Spitzer et al., 2019).

By integrating qualitative (phase one) and quantitative (phase two) findings, the previous section revealed the possible predisposing characteristics, enabling resources, and healthcare needs influencing healthcare access and utilisation among recently arrived Chinese late-life migrants since their first arrival in Aotearoa NZ. To fully address the first research objective, this section compares the study findings with existing national and global literature, highlighting similarities, disparities, and new insights.

7.3.1 Chinese Late-life Migrants' Predisposing Characteristics that Affect Healthcare Access and Utilisation

Individuals' predisposing factors are their socio-cultural characteristics that exist prior to their illness (Andersen et al., 2013). These predisposing characteristics encompass individuals' demographic characteristics (i.e., age, gender, time in the host country, etc.), social structure (i.e., language proficiency, cultural background, and social networks), and health beliefs towards healthcare. Based on the analysis and comparison of interview data and survey data, this study identified age group, time in the host country, language proficiency, and cultural beliefs as the primary predisposing factors that significantly hindered the utilisation of healthcare services, mainly secondary and tertiary services, among Chinese late-life migrants.

7.3.1.1 Demographic characteristics and healthcare access and utilisation

As previously discussed, the likelihood of visiting healthcare services in the Aotearoa NZ context is associated with the Chinese late-life participants' demographic characteristics, such as gender, age group, and time in the host country.

First, this study found that gender does not significantly determine healthcare access and utilisation among Chinese late-life migrants in Aotearoa NZ. This finding aligns with a Canada-based survey by Lai and Chau (2007), which similarly reported no significant differences between Chinese late-life migrant males and females in their utilisation of healthcare services. This consistency suggests that demographic characteristics

other than gender, such as age and time in the host country, may have a more pronounced influence on healthcare utilisation within the targeted population.

Second, compared to younger late-life participants (65-74 years old), this study disclosed that older late-life participants (75-84 years old and over 85 years older) are more likely to use healthcare services, which may relate to their health conditions. This finding aligns with existing global literature, which indicates that an increase in age group is associated with a higher likelihood of accessing and utilising healthcare services (UNFPA, n.d.; WHO, 2018; Zhang, 2023). However, this current study did not find direct evidence supporting the conception that increasing age negatively impacts healthcare access and utilisation among Chinese late-life migrant participants, which is inconsistent with previous global research (Hiam et al., 2019). The findings from both phases of the study indicate that Chinese late-life migrants' access and utilisation of healthcare services were more likely affected by their language proficiency, cultural background, familiarity with the local health system, as well as the availability of healthcare facilities and resources.

Third, this study found that the duration spent in the host country significantly influenced healthcare access and utilisation among recently arrived Chinese late-life migrants. Longer duration in the host country was associated with increased familiarity with local healthcare services among Chinese late-life participants. This finding is consistent with immigrant health research conducted in Australia (Heidenreich et al., 2014), Canada (Woltman & Newbold, 2007), and the U.S.A. (Carruth et al., 2021; Chung et al., 2018), which also indicated that the length of residence in the host country plays a crucial role in enhancing migrants' understanding and navigation of the healthcare system. The increased familiarity over time likely leads to better utilisation of available healthcare resources, highlighting the importance of integrating recently arrived migrants into the healthcare system as quickly as possible to improve access and usage.

7.3.1.2 The association between personal demographic characteristics and utilisation of public hospitals and medical specialists

To further explore the association between participants' demographic characteristics and their utilisation of public hospital care and medical specialist care services in Aotearoa NZ, this study employed the binary logistic regression analysis on survey data.

The outcomes of the binary logistic regression analysis (see section 6.3.3 in Chapter Six) highlighted that several predisposing characteristics, including highest qualification, immigration status, civil/marital status, year-group lived in Aotearoa NZ, and age group, significantly impact the utilisation of public hospital services among Chinese late-life participants. Specifically, an increase in age and years lived in Aotearoa NZ, were associated with a higher likelihood of using public hospital services. Additionally, participants who were married or partnered, held NZ citizenship or permanent residency and had lower qualifications were more likely to utilise public hospital services. These findings are similar to the qualitative studies conducted in the USA that examined factors affecting the health-seeking behaviours of Korean and Chinese late-life migrants (Chung et al., 2018; Mao et al., 2020). These previous studies discovered that immigration status, length of residency in the host country, education level, living circumstances, and health status affect the late-life migrants' utilisation of local healthcare services (Chung et al., 2018; Mao et al., 2020).

Furthermore, the logistic regression results of this study (phase two) indicated that the likelihood of visiting a medical specialist was only associated with participants' accommodation status (living with adult children) and highest qualification (see section 6.3.4 in Chapter Six). While no existing literature supports this finding, it is plausible given that this study did not include information on individual health conditions related to perceived need.

7.3.1.3 Language competences challenge healthcare access and utilisation

Language and communication are crucial in promoting Chinese late-life migrants accessing and utilising local healthcare services in Aotearoa NZ. Both phases of this study highlighted that language competency is a critical consideration that affects Chinese late-life participants' healthcare-seeking behaviours. Whether it involves

finding a regular GP for primary care or accessing translation services within secondary/tertiary healthcare, effective communication is essential.

These findings are consistent with several recent studies (Chung et al., 2018; Hiam et al., 2019; Mao et al., 2020), which suggested the significant impact of host country language proficiency on migrant health in English-speaking countries, especially for later-life migrants with limited language skills before migration (Park et al., 2019; Wright-St Clair et al., 2018). Many existing global research revealed that a large proportion of Chinese late-life migrants experience English competency issues and struggle to communicate effectively with English-speaking healthcare practitioners in the host country (Chung et al., 2018; Dastjerdi et al., 2012; Hiam et al., 2019; Mao et al., 2020; Portes et al., 2012).

English proficiency and healthcare access and utilisation

One significant finding of this study suggested that individuals' English proficiency may not be the main factor contributing to the decreased access and utilisation of primary healthcare among the Chinese late-life migrant population. This finding diverges from the existing literature (Dastjerdi et al., 2012; Meyer et al., 2013; Wang et al., 2008). A grounded theory study (Dastjerdi et al., 2012) and a mixed-method study (Wang et al., 2008) conducted in Canada emphasised that language barriers significantly hinder Chinese late-life migrants' ability to navigate the healthcare system, communicate effectively with healthcare providers, and understand medical information. Similarly, a population survey by Meyer et al. (2013) across six Asia-Pacific countries identified language skills as a significant determinant of healthcare utilisation, reinforcing that proficiency in the host country's language is essential for accessing and effectively using healthcare services. However, after carefully analysed the outcomes from both phase of the study, this study found that the reason behind this finding was due to a large number of the Chinese-speaking practitioners (i.e., GPs and nursers) working in the primary healthcare setting in Aotearoa NZ. Despite the absence of translation services provided by GPs in Aotearoa NZ primary care settings, most participants in both phases of this study successfully found alternative solutions to address potential language barriers when accessing and utilising primary healthcare services.

Despite the absence of translation services provided by GPs in Aotearoa NZ primary care settings, most participants in both phases of this study successfully found alternative solutions to address potential language barriers when accessing and utilising such services. Specifically, they actively sought out Chinese-speaking practitioners, leading to significant enhancements in the quality of healthcare services received, as widely recognised by the study participants in both phases. This phenomenon aligns with the current QD study indicating that English proficiency was not a significant predictor of primary healthcare utilisation in the U.S.A. because of the widespread availability of Chinese-speaking primary healthcare practitioners (Mao et al., 2020).

Other than the challenges encountered in accessing and utilising primary healthcare services, language difficulties were highlighted by engaging with services in secondary and tertiary healthcare settings. Chinese late-life participants of this study (both phase one and phase two) complained about the inflexibility in seeking Chinese-speaking practitioners within the secondary and tertiary healthcare settings. Meanwhile, they also expressed concerns regarding the quality and accessibility of translation services in utilising secondary and tertiary healthcare services in Aotearoa NZ, which is particularly notable in the subtheme "Difficulty in Getting Translated" (subtheme of Theme One, see Section 4.4 in Chapter Four). These observations are consistent closely with findings documented in prior global research studies (Dastjerdi et al., 2012; Lai & Chau, 2007; Mao et al., 2020; Meyer et al., 2013), indicating a consistent pattern of language-related difficulties experienced by migrant populations when navigating healthcare systems.

Furthermore, beyond the English proficiency issues faced by recently arrived Chinese late-life migrants in communicating with English-speaking healthcare practitioners, additional language-related concerns emerged when attempting to access and utilise local healthcare services. This study (both phases) found that the reliance on English-based information from local healthcare providers, mainstream publications, and media sources was perceived unfavourably by Chinese late-life participants, primarily due to their poor English proficiency. As a result, their access to vital healthcare information was limited, compelling them to rely heavily on their social networks for guidance. This reliance often extended to seeking healthcare assistance from friends, family members, or individuals within Chinese communities who shared their language and cultural background.

These challenges in accessing essential healthcare information mirror the findings of studies conducted by a qualitative descriptive approach (Mao et al., 2020), highlighting the persistent language-related barriers faced by migrant populations accessing and utilising healthcare systems in the United States. Similar issues were identified by a grounded theory study (Liu et al., 2017), which reported that older Chinese immigrants in the UK often depended on bilingual support people, such as family and friends, social workers, and staff from community-based Chinese organisations, to access and utilise healthcare services. Additionally, an ethnographic study (Tang et al., 2015) found that limited English proficiency among Chinese immigrants in Canada significantly restricted their ability to understand healthcare information and access services, leading to poorer health outcomes.

Ineffectively communicate leading to negative attitudes towards healthcare

Chinese late-life participants from both phase one and phase two of the study believed that effective communication with healthcare participants is essential in ensuring the accuracy and efficacy of diagnostic and treatment procedures. The outcomes of these interactions also influence the establishment of trust between Chinese late-life patients and local healthcare practitioners, thereby impacting recently arrived Chinese late-life migrants' healthcare-seeking behaviours. This study, especially phase one findings, revealed that one of the major obstacles hindering effective communication between Chinese late-life migrants and their NZ healthcare practitioners lies in the discrepancies in understanding the responsibilities of healthcare practitioners' responsibilities and the procedural norms they adhere to while they deliver medical care. This lack of alignment in understanding between patients and practitioners can lead to misunderstandings, misinterpretations, and, ultimately, inefficacy in communication in healthcare settings.

Although prior research has touched upon issues of effective communication in healthcare, studies from the United States, such as a qualitative study by Chung et al. (2018), a grounded theory study by Dong et al. (2011), and ethnographic and interview research conducted by Holmes (2012), frequently frame these challenges within the context of cultural differences. In these studies, researchers explored how cultural backgrounds influence communication dynamics between healthcare providers and patients, particularly among immigrant populations. They highlighted that language barriers and differing cultural interpretations of health and illness

can lead to ineffective communication between migrant patients and health practitioners, thereby affecting healthcare outcomes. Similarly, in Canada, Lum et al. (2016) conducted a qualitative study focusing on communication challenges experienced by immigrants in healthcare settings. Their findings underscored that cultural differences affect verbal communication, non-verbal cues, and the understanding of healthcare information.

This study highlighted that English proficiency alone does not solely determine participants' healthcare access and utilisation. The ability to effectively communicate concerns and expectations to healthcare professionals also significantly impacts the development of trust in patient-practitioner relationships, thereby influencing Chinese late-life participants' experiences in accessing and utilising healthcare services in Aotearoa NZ. Both phase one and phase two participants in this study often struggled to explain their needs and concerns to healthcare practitioners fully. This challenge was not solely due to English proficiency but also to Conflict in Health-related Concepts (subtheme of Theme Two) between patients and their health practitioners. These conflicts arise from differing perceptions of health status, medical standards, and treatment styles and outcome expectations between Chinese late-life migrants and Western-trained healthcare practitioners in Aotearoa NZ. Consequently, these disparities affected participants' Satisfaction and Security with Healthcare Practitioners (subtheme of Theme Two), as well as their Attitudes Towards Healthcare Access and Utilisation in Aotearoa NZ (Theme Three).

This study also identified that Chinese traditions and cultural beliefs, such as incorporating Traditional Chinese Medicine (TCM), could contribute to ineffective communication, resulting in negative attitudes towards healthcare access and utilisation among Chinese late-life migrants in Aotearoa NZ. Specifically, the preference for TCM for health maintenance and treatment may influence Chinese late-life migrants' acceptance and adherence to conventional medical treatments recommended by Western-trained healthcare providers. This finding aligns with the outcomes of qualitative research on Chinese migrants and health-seeking behaviours conducted in Canada by Lum et al. (2016).

Moreover, this research acknowledges that these difficulties endure not just in periods before the pandemic but also throughout the COVID-19 pandemic, where cultural beliefs might impact Chinese late-life migrants' choices regarding preventive measures, testing, and vaccination. This is consistent with the findings demonstrated in a recent study conducted in the United States (Mao et al., 2020), which highlighted the pandemic has exacerbated these challenges by underscoring inequalities in healthcare access and the spread of information, especially among migrant communities with limited proficiency in English and distinct cultural viewpoints.

Additionally, findings from both phases of this study revealed that Chinese late-life participants faced challenges accessing public healthcare information and receiving sufficient guidance from healthcare practitioners. Many participants felt they needed to be more adequately informed about their care/treatment options during their visits to various healthcare services in Aotearoa NZ. This lack of information often stemmed from healthcare practitioners' perceived reluctance or inability to provide detailed explanations, which could be attributed to time constraints and resource limitations within the healthcare system. Moreover, participants' cultural beliefs, as highlighted in subthemes of Theme Three ("As the Old Saying Goes" (chang yan dao), "Don't Want to Be a Burden," and Attitudes towards Financial Consideration), further compounded these challenges. These cultural factors influenced patient-practitioner interactions, potentially fracturing the patient-practitioner relationship as identified in Theme Two of this study. As discussed in Theme Three, such fractured relationships can significantly impact participants' attitudes towards healthcare access and utilisation. As discussed in this section, this aligns with previous research (Chung et al., 2018; Dong et al., 2011; Holmes, 2012; Lum et al., 2016; Spitzer et al., 2019), emphasising the impact of communication barriers and cultural beliefs on healthcare experiences among migrant populations.

7.3.1.4 Cultural conflicts and challenges to healthcare access and utilisation

Immigrant populations often maintain strong ties to their countries of origin and bring distinctive traditions when resettling in a new place (Choi et al., 2022; Hiam et al., 2019). These trends are particularly evident and significantly impact Chinese late-life participants' healthcare-seeking behaviours in this study.

The study's findings indicate that recently arrived Chinese late-life migrants' core values and beliefs about Chinese culture and tradition remained strong and unchanged. However, they then began adapting to NZ's cultural norms and practices. As a result, cultural conflicts emerged, negatively influencing these migrants' access to and utilisation of healthcare services in Aotearoa NZ. Indeed, these findings corroborated and extended the literature on cultural impacts on healthcare access. For example, Kim and Keefe's (2010) quantitative study and Mao et al.'s (2020) qualitative descriptive approach study both highlighted how traditional Chinese beliefs affect healthcare utilisation among Chinese migrants in the U.S.A., often leading to delays in seeking care. Similarly, Wong's (2015) NZ health report underscored the persistent cultural barriers Chinese migrants face in accessing healthcare services. However, Koh et al. (2022) in NZ further elucidated that while adaptation to local practices occurs, it does not necessarily mitigate the profound influence of traditional values, which can create significant friction between patients and healthcare providers.

Cultural conflicts fractured the patient-practitioner relationship

Both phases of this study have made a unique contribution to the existing body of research, revealing that a myriad of barriers to the patient-practitioner relationship are intricately linked to the cultural and traditional norms of Chinese late-life participants. For instance, the challenges of ineffective communication, a subtheme identified in Theme Two, were found to be influenced by the conservative nature of Chinese late-life participants, where questioning or challenging healthcare practitioners is seen as culturally inappropriate. Similarly, conflicts related to health-related concepts, explored in Theme Two, stem from differences in the traditional Chinese understanding of health status and treatment approaches compared to Western medical standards. These findings, which align with prior studies conducted in the U.S.A. (Chung et al., 2018; Dong et al., 2011; Holmes, 2012), Canada (Lum et al., 2016), and Europe (Savas et al., 2024), which often frame these challenges within the context of cultural differences, are unique in that both phases of this study discovered that the most apparent cultural and traditional influences were observed in participants' perceptions of "Satisfaction and Security with Healthcare Practitioners," a subtheme of Theme Two, and their "Cultural Beliefs and Attitudes Towards Healthcare Access and Utilisation," encompassed in Theme Three.

Regarding Chinese late-life participants' satisfaction and security with local healthcare practitioners, both phases of this study discovered that participants preferred primary healthcare providers of Chinese or Asian backgrounds, who were seen to be typically more sensitive to health-related cultural issues. However, a lack of cultural sensitivity among some NZ healthcare practitioners within secondary/tertiary healthcare settings was commonly noted by Chinese late-life participants. These differences were evident from both interview perceptions and survey findings on satisfaction levels with healthcare service delivery. The absence of appropriate recognition of cultural and traditional values in practice challenges the core health and wellness beliefs held by Chinese late-life migrants, which are fundamental to their healthcare-seeking behaviours. These cultural conflicts might undermine Chinese late-life participants' willingness to seek mainstream healthcare in Aotearoa NZ, even when they needed. Instead, they may shift away from mainstream healthcare to TCM.

Chinese philosophies affect Chinese late-life migrants' healthcare seeking behaviours

As previously discussed in Literature Review (Chapter Two), existing literature highlighted the roots of cultural and traditional conflicts stemming from two core Chinese philosophies: Taoism (Lin et al., 2022; Wang et al., 2008) and Confucianism (Ho, 2015; Mehta, 2012). Both philosophies are reflected in the study's findings concerning recently arrived Chinese late-life migrants' attitudes towards healthcare access and utilisation (Theme Three).

Taoism emphasises the balance of Yin and Yang to form the foundation of TCM practices (Lin et al., 2022). The findings of this study suggest that Chinese late-life migrants tended to resort to TCM or even self-medicated when their cultural beliefs conflicted with the treatments provided by local healthcare practitioners. Participants also reported that some Chinese-background GPs hold positive views towards TCM practice, consistent with previous findings (Mao et al., 2020). This encourages a diversity of healthcare service options and helps ease potential cultural and traditional conflicts and cultural congruence.

Confucian principles emphasise respect for authority, humility, and avoiding conflict (Ho, 2015; Mehta, 2012), which can hinder open communication between patients and healthcare providers. These cultural traits lead Chinese late-life migrants to be more passive in their medical practitioner encounters and less likely to question

or challenge medical advice due to Confucian hierarchical obedience, which can result in misunderstandings and dissatisfaction with healthcare in Aotearoa NZ. Reflected in the findings from this study, such instances are readily visible in the subthemes developed in phase one of the study. For instance, the subthemes of Theme Two identified in the study, such as ineffective communication and satisfaction and security with healthcare practitioners, highlight specific areas where cultural clashes are most evident. Chinese late-life migrants reported feeling that their concerns were not adequately addressed and that there was a lack of sensitivity to their cultural needs. This was particularly true in complex medical decisions, where patients could not fully express their preferences or concerns due to language barriers and cultural misunderstandings.

Moreover, Chinese late-life participants of this study often felt that their cultural and traditional health beliefs, which include core aspects of Confucianism, were disregarded or misunderstood by NZ healthcare practitioners. Specifically, both phases of this study found that the traditional Chinese value of "not wanting to be a burden" (a subtheme of Theme Three) often led patients to downplay their symptoms or avoid seeking care until necessary, which can complicate treatment outcomes. This cultural tendency can clash with the expectations of healthcare practitioners who rely on patient self-reporting to manage care effectively. A mixed-methods research in Canada suggested that culture and ethnicity are intertwined in a complex way to influence Chinese migrants' health management strategies in the host society (Wang, 2008). A QD study in the U.S.A. has suggested that solid maintenance of Chinese cultural values could influence various health behaviours among Chinese late-life migrants, including eating/diet, exercise, chronic disease, and mental health management (Mao et al., 2020).

Additionally, the financial considerations and attitudes towards spending on healthcare (subtheme of Theme Three) also play a significant role. Chinese late-life migrants often come from backgrounds where healthcare is seen as a communal responsibility, and out-of-pocket expenses can be a significant barrier. This contrasts with the NZ healthcare system, which, despite being publicly funded, still involves certain costs that may not be anticipated by recently arrived migrants. This phenomenon is not unique to Chinese migrants in NZ. For instance, Dastjerdi et al. (2012) found that financial status significantly affected elderly care access among Iranian migrants in Canada, highlighting the economic challenges faced by this group. Similarly, Holmes et al.

(2012) demonstrated how the socio-economic structure impacts the health of Mexican migrants in the USA, illustrating the broader implications of financial barriers on migrant health. Additionally, Funk and Lopez (2022) discussed the economic dynamics that contribute to disparate health outcomes for Hispanic Americans, further emphasising the role of financial considerations in healthcare access and utilisation.

Overall, this study highlighted and explored that the increasing tension resulting in cultural and traditional conflict, misunderstandings, and clashes within the NZ healthcare system underscores the necessity for enhanced cultural competence training among healthcare practitioners. These findings are consistent with conclusions from previous research. Wong's (2015) examination of challenges for Asian health in Aotearoa New Zealand, highlight the detrimental effects of insufficient cultural awareness and sensitivity on healthcare delivery and patient outcomes. Another New Zealand-based quantitative survey (Wiki et al., 2021) concluded that Asian New Zealanders, including Chinese late-life migrants, were structurally vulnerable during the pandemic. This vulnerability was exacerbated by the lack of culturally competent care and the barriers to effective communication and understanding of their beliefs within the healthcare system (Wiki et al., 2021). Therefore, addressing cultural incongruence conflicts between migrant patients and local healthcare practitioners and undertaking effective communication is crucial for improving the healthcare experiences and outcomes for Chinese late-life migrants in Aotearoa NZ.

7.3.2 Personal and Community Enabling Resources that Affect Chinese Late-life Migrants' Healthcare Access and Utilisation

Chinese late-life participants in this study reported that using a new healthcare system in a new environment was markedly different from what they had been previously accustomed to. These unsettling differences are evident in almost every aspect of healthcare service delivery. The stress and frustration experienced by the recently arrived Chinese late-life migrants in accessing and utilising healthcare who participated in this study support the existing proposition that the changes in the healthcare support system significantly affect the well-being of migrants (Chung et al., 2017). The findings of current study and relevant literature both suggest that personal enabling resources (like knowledge of the healthcare system) and community enabling resources (such as the location of the services, availability of Chinese-speaking practitioners, and availability of

translation services) were vital factors affecting late-life migrants' healthcare utilisation (Andersen et al., 2013; Koh et al., 2022; Meyer et al., 2013).

7.3.2.1 Lack of knowledge towards healthcare delivery

Both phase one and phase two findings emphasised that unfamiliarity with the NZ health system is one of the essential personal enabling factors that interrupt Chinese late-life participants' healthcare access and utilisation.

The healthcare systems of China and Aotearoa NZ differ considerably. China's healthcare system was mainly provided by hospitals, especially public hospitals, with over 80% of the total number of in-patient and out-patient medical services (Zhang, 2023; Zhang et al., 2024). Despite the proportion of private hospital having experienced rapid growth over the last two decades (Deng et al., 2018; Jiang & Pan, 2020; National Bureau of Statistics of China, 2024), private hospitals still have not matched the capacity level of health service utilisation seen among public hospitals likely because of a high medical cost and an overall lower number of personnel and beds (Jiang et al., 2020; Zhang et al., 2024; Zhao et al., 2022). Unlike China's healthcare system, NZ healthcare system employed a mixed public-private system for delivering healthcare (INZ, n.d.; Pegasus Health, 2014). As previously discussed in section 1.3.5 of Chapter One, Aotearoa NZ uses a hierarchical healthcare system, which includes two main sections - primary, secondary and tertiary care. Primary healthcare is community-based healthcare, while secondary and tertiary healthcare is a speciality service generally provided by hospitals (INZ, n.d.; MOH, 2018b).

In general, the unique structure of healthcare system in Aotearoa NZ contrasts sharply with the health system in China, which does not have clear distinction between primary and secondary care (Chen et al., 2019; Hiam et al., 2019). Namely, GP services in Aotearoa NZ represent an entirely new layer of the healthcare system for these migrants, which does not exist in China. The role of GPs and the referral process into the secondary and tertiary healthcare systems confused recently arrived Chinese late-life participants about the initial point of access to healthcare services. This confusion affected the underutilisation of secondary and tertiary healthcare services (such as hospital care and medical specialists) among the target population, reflecting a disconnect between their previous understanding of healthcare and the reality of the system in the host country (Hiam et al., 2019; Perez, 2012). To cope with such challenges, some participants sought various sources of public healthcare information (including publications and media, social networks, and health practitioners) to better understand the NZ healthcare system.

7.3.2.2 Lack of healthcare resources within public health system

Another major issue this study reported was the limited enabling resources provided by the NZ public healthcare system. With limited community-enabling resources, Chinese late-life participants in both phases of this study reported increased difficulties in accessing and utilising hospital care, ED care, and specialist care in Aotearoa NZ. These community-enabling resources usually involve the availability of Chinese-speaking healthcare practitioners, the location of the healthcare services, and limited translation services in public healthcare services. It is plausible that a lack of healthcare providers or professional translators who can speak the same language (Chung et al., 2018; Mao et al., 2020) and the need to travel longer distances on limited public transport (Diaz, 2002; Syed et al., 2013) could deter patients or influence their choice of healthcare providers. Moreover, the lack of healthcare resources could also delay treatment (Baglio et al., 2019; Savas et al., 2024), which can be seen from Chinese late-life participants' experiences of long waiting times/lists in accessing the public healthcare system.

7.3.2.3 Lack of personal enabling resources

This study (both phases) discovered that personal resources significantly influence Chinese late-life migrants' healthcare access and utilisation, particularly secondary and tertiary healthcare. The logistic regression analysis of survey data (phase two) found that the likelihood of visiting public hospitals and medical specialists was statistically significantly associated with participants' sources of family support (living with adult children). The regression results indicated that Chinese late-life participants who lived with children were less likely to use public hospitals and specialist care services. Consistent with the findings from this study, existing literature suggested that personal enabling resources, like family support from adult children, negatively affected late-life migrants' healthcare access and utilisation (Chung et al., 2018; Mao et al., 2020). Influenced by Confucian ethics, intergenerational relationships among Chinese families are characterised by two-way transfers and filial piety (Montayre et al., 2021; Smith & Hung, 2012). It is possible that some late-life migrants might deplete their resources by giving them to their children and relying on them in their old age.

In contrast, Chinese and other Asian adult children are expected to fulfil the filial responsibility of providing financial support and care for their parents in their old age (Hu, 2017). There is a considerable amount of

literature on the effect of intergenerational relationships on the health of late-life adults compared to that of healthcare behaviour. Similar to the idea proposed by Guo et al. (2018) and Tang (2021), this study indicates that financial support and care from adult children served as enabling resources and increased the possibility of seeking formal healthcare in Aotearoa NZ.

Additionally, the logistic regression results of this study (phase two findings) did not indicate a significant correlation between income and healthcare utilisation. However, the interview findings suggested that Financial Consideration (subtheme of Theme Three) were a barrier that resulted in recently arrived Chinese late-life migrants' health needs turning into healthcare demands. During the course of the survey, phase two of this study found that some Chinese late-life participants gave up seeking healthcare because "the cost is expensive," and they "don't want to be a burden." In contrast to the findings from this study, existing literature recognised that income is an essential predictor of healthcare use, whether positive or negative. Based on the data of Western European countries from the European Health, Ageing, and Retirement Survey (SHARE), an analysis of the relationship between income and healthcare for middle-aged and late-life people over 50 years old found that low-income groups are more likely to give up treatment (Mielck et al., 2009). Similarly, Meyer et al. (2013) found that low income and no formal job will become obstacles to utilising healthcare services through a survey of six countries or regions in the Asia Pacific region. The evidence from Hong Kong, China, shows that retired residents over 60 find it more difficult to get medical help due to lower income (Meyer et al., 2013).

7.3.3 Chinese Late-life Migrants' Healthcare Need Factors that Affect Healthcare and Utilisation

To ensure compliance with ethical standards and protect the sensitive data of participants, this study refrained from collecting personal information related to individuals' health status. Despite this limitation, the study's findings highlighted that all interview and survey participants had accessed and utilised certain healthcare services in Aotearoa NZ. This underscores the relevance of the study population and validates the findings related to healthcare access and utilisation patterns among Chinese late-life migrants. By focusing on the access and utilisation of services rather than personal health details, the study maintained a robust ethical framework while still providing valuable insights into the healthcare experiences of the participants. This methodological

decision safeguarded privacy and facilitated a broader understanding of healthcare access issues within this demographic group.

This study's interview and survey data reported that recently arrived Chinese late-life migrants with poor health status (either worse self-reported health or more chronic diseases) were more likely to use GP services in Aotearoa NZ, suggesting that poor health status leads to more healthcare needs. This finding is consistent with prior studies on healthcare utilisation among the oldest late-life (aged ≥80 years) Chinese (Zeng et al., 2017), as healthcare need factors were strong determinants of individuals' healthcare-seeking behaviour. The late-life migrants were found to use healthcare services more, possibly attributable to the more chronic and comorbidities health status and in part to the increased number of health problems as their lifespan extends (Zeng et al., 2017). Nevertheless, with limited information, the findings cannot confirm whether individuals' health status significantly impacts their choice of utilising different levels of healthcare.

Furthermore, this study indicated that Chinese late-life participants strongly preferred public and high-level healthcare providers when needing emergency care services. Previous studies have reported similar findings (Chatterjee et al., 2019; Li et al., 2017). Such a result may be due to the differences between the healthcare system in China and Aotearoa NZ. In China, ED services and hospital outpatient clinics are the first layer or contact point for healthcare access (Li et al., 2017). Namely, patients can access these services within the Chinese health system without restrictions.

Additionally, due to the cultural belief of "As the Old Saying Goes" (chang yan dao), Chinese late-life participants often perceive public and high-level (secondary and tertiary healthcare) providers as more competitive and reliable. This traditional view, deeply ingrained in Chinese culture, posits that institutions which serve a larger population and operate at higher levels of care offer superior quality and expertise. The NZ-based studies on Asian health and health promotion (Ho, 2015; Wong, 2015) support this observation, noting that such cultural beliefs significantly shape healthcare-seeking behaviours among Asian migrants, including Chinese late-life migrants, often preferring these high-level interventionist services over primary care options.

7.3.4 The Effect of the COVID-19 Pandemic on Healthcare Access and Utilisation

One significant finding from both phases of this study is that the ongoing COVID-19 pandemic significantly hindered Chinese late-life participants from accessing various healthcare services in Aotearoa NZ. The pandemic had a notable negative impact on the utilisation of GP and ED services, with over half of the survey participants reporting disruptions (62.11% and 51.27%, respectively). During the lockdown periods, when in-person care was limited, many interview and survey participants experienced challenges accessing timely healthcare. They often felt inadequately informed about the NZ government's healthcare provisions (lack of enabling resources), particularly due to a lack of Chinese language-based information in mainstream media channels (language barrier). Despite some complaints about "long wait times" for Healthline services (lack of enabling resources), most Chinese late-life participants from both phases of the study expressed a willingness to use COVID-19 testing, vaccination, and isolation services (health needs factor). Additionally, the pandemic's impact on after-hours care, public and private hospital services, and medical specialists was less pronounced, with lower reported disruptions in these areas.

The recent literature highlights the multifaceted impact of the COVID-19 pandemic on healthcare access among late-life adults, particularly those from migrant backgrounds. A qualitative study on older Chinese and Korean migrants' experiences of the first COVID-19 lockdown in Aotearoa NZ (Koh et al., 2022) highlighted similar outcomes as the current study. Koh and colleagues found that older Asian migrants experienced significant challenges due to social and linguistic exclusion, yet they also engaged resourcefully in ethnically specific pandemic initiatives. Another NZ-based nationwide cross-sectional study by Wiki et al. (2021) also identified significant disparities in healthcare access and outcomes based on socioeconomic and demographic factors, highlighting that specific populations, including late-life migrants, faced more significant challenges during the pandemic. Moreover, global literature reported similar findings (Vigezzi et al., 2022), which investigated older adults' access to care during the COVID-19 pandemic in Lombardy, Italy. Their study found a significant reduction in healthcare access during the pandemic, with many older adults decreasing their visits to GPs, outpatient services, and emergency departments. Factors such as age, gender, economic status, and mental health played a role in these access disparities.

7.4 Key Insights from the Study

This study has identified numerous factors affecting healthcare access and utilisation among recently arrived Chinese late-life migrants in Aotearoa NZ, during and beyond the COVID-19 pandemic. By placing the study findings within the context of existing literature, a nuanced picture emerges that both supports and challenges current understandings. This study introduces two key novel insights by critically discussing the predisposing characteristics, enabling resources, and health-related need factors influencing healthcare access and utilisation for Chinese late-life migrants.

Experiences from interview and survey participants of this study indicated that speaking the same language does not ensure effective communication between Chinese late-life patients and healthcare practitioners, thus having a limited impact on improving healthcare access and utilisation. The findings suggested that having English language proficiency is not the sole determinant of healthcare access and utilisation among recently arrived Chinese late-life migrants. Despite a significant proportion of Chinese-speaking doctors in Aotearoa NZ, this study highlighted that ineffective communication can still occur due to a lack of mutual understanding. Chinese late-life migrants' perspectives on health and well-being are deeply rooted in cultural beliefs and values from their upbringing. It can be challenging for practitioners trained in the Western health system to grasp fully, even if they speak the same language. Additionally, cultural differences among Chinese-speaking healthcare practitioners from diverse regions like Hong Kong, Singapore, and Taiwan further complicate communication and understanding.

Cultural differences are widely acknowledged as significant barriers to healthcare access and utilisation, especially among migrant populations. Studies on Chinese and Korean elderly populations in Aotearoa NZ have identified differing health beliefs, as critical factors hindering healthcare access (Koh et al., 2022; Montayre et al., 2021). The NZ government has implemented legislation to create an inclusive healthcare environment and improve health equity. However, cultural barriers persist in everyday practices. The study found a noticeable need for a deep understanding of Chinese cultural values and beliefs perceived by health practitioners, especially in secondary and tertiary healthcare settings. Many NZ healthcare practitioners may

not realise that Chinese cultural philosophies, such as Taoism and Confucianism, shape Chinese late-life migrant patients' health perspectives and decision-making processes. This lack of understanding can further lead to miscommunication.

Overall, improving effective communication and cultural understanding between Chinese late-life migrant patients and NZ healthcare practitioners could go a long way toward fostering trust in the patient-practitioner relationship and long-term health and well-being outcomes. Ultimately, it could enhance healthcare access and utilisation for recently arrived Chinese late-life migrants in Aotearoa NZ.

7.5 Modifying and Piloting a Nationally Administered Survey on Healthcare Access and Utilisation among Recently Arrived Chinese Late-life Migrants in Aotearoa NZ

To address the second research objective, which involves modifying and piloting a nationally administered survey on healthcare access and utilisation among recently arrived Chinese late-life migrants in Aotearoa NZ, this study employed an exploratory sequential mixed-methods framework. This approach started with QD research, followed by quantitative methods. The primary purpose of phase two was the development of a pilot survey for health service utilisation and patient experiences based on the key concerns and themes that emerged in phase one (qualitative phase).

Phase two of this study modified an existing validated questionnaire from MOH (the "Health Service Utilisation and Patient Experience" survey from the 2017/18 NZ Health Survey) and developed a pilot survey for health service utilisation and patient experiences. Adapting the existing MOH health survey provided a reliable and valid framework for gathering quantitative data (Drost, 2011). Incorporating the qualitative insights from phase one ensured the pilot survey better reflected the healthcare access and utilisation experiences among the target population (recently arrived Chinese late-life migrants) in the target situation (both non-pandemic and during the COVID-19 pandemic).

As previously discussed in the Chapter Five (Section 5.2), to better reflect the reality and cultural sensitivity of recently arrived Chinese late-life migrants, the thematic findings of phase one, particularly their cultural

beliefs and attitudes towards healthcare access, were integrated into the survey questions. For instance, "Don't Want to Be a Burden" was added as a response option to questions regarding barriers to accessing healthcare services. Another example included questions about specific barriers mentioned by interview participants, such as "the availability of Chinese-speaking healthcare practitioners" and "difficulties in obtaining translation services". Moreover, based on the qualitative findings, the pilot survey concentrated on primary healthcare, GP services, and emergency department (ED) services, as these were critical areas highlighted by the interview participants in phase one. Additionally, this pilot survey developed several pandemic-specific questions to address healthcare access and utilisation during the ongoing COVID-19 pandemic, including experiences with telehealth and COVID-19-related health services, such as testing and vaccination. The detailed steps of pilot survey development are discussed in Section 3.6.2 of Chapter Three.

The open-access online survey method was employed in phase two of the study to collect quantitative data. As discussed in section 7.2, the statistical results of the pilot survey (see Chapter Six) offered a broader understanding of the trends and patterns identified during phase one. By triangulating the findings from phase one and phase two, this study enhances the validity and credibility of the results and mitigates any research biases. Additionally, the evaluation of the pilot survey, using survey respondent burden assessment and CATPCA (see Chapter Five), can inform recommendations for the design of a formal survey in future studies.

7.6 Strengths and Limitations

The research process, including data collection and analysis, has highlighted the strengths and limitations inherent in the current study. Recognising these aspects highlights the direction for the future. This recognition can also help to determine methodological biases that affect the findings, ensuring future studies can build on the current work with greater precision and reliability.

7.6.1 Strengths of the current study

One of the unique strengths of this study lies in its innovative methodological framework, which delves into the realm of healthcare access and utilisation among late-life Chinese migrants. This topic remains largely unexplored in the existing literature. The exploratory sequential mixed-methods approach is a valuable tool,

harnessing the power of both qualitative and quantitative research to provide a comprehensive and holistic understanding of complex research objectives (Creswell & Clark, 2017). The qualitative phase laid the foundation by unveiling the intricate web of factors influencing healthcare access. In contrast, the quantitative phase furnished empirical evidence on the extent and impact of these factors. By quantifying the qualitative findings, this study validated and generalized the results to a broader population, ensuring the robustness and representativeness of the conclusions.

During the initial qualitative phase (phase one of the study), in-depth semi-structured interviews were conducted, capturing the rich, detailed data from participants (Sandelowski, 2000). This phase was crucial in identifying key issues, themes, and variables relevant to healthcare access and utilisation among recently arrived Chinese late-life migrants. It allowed for the exploration of participants' personal experiences, cultural beliefs, and perceived barriers affecting their healthcare access and utilisation, often overlooked in purely quantitative studies. The qualitative findings thus provided a nuanced understanding of the health seeking and engagement experiences of this population, highlighting specific areas that required further investigation. Following the qualitative phase (phase one), a quantitative survey (phase two) was conducted using a survey instrument based on the qualitative insights. The survey aimed to facilitate data collection from a larger sample, thereby providing a broader understanding of the trends and patterns identified during the qualitative phase (Creswell & Clark, 2017). The qualitative findings directly informed the development of the survey instrument, ensuring that the questions are relevant and grounded in the participants' lived experiences (Creswell, 2014). This enhances the validity and reliability of the quantitative data (Hastings, 2012; Venkatesh et al., 2013). By linking the two phases, the study identified and addressed gaps in the existing knowledge, proposed more informed hypotheses, and developed effective interventions.

Moreover, using an exploratory sequential mixed-methods framework enables contextualisation and integration, enhances the flexibility and adaptability of the research design, and strengthens the validity and robustness of the study's findings. First, the framework enables the contextualisation of quantitative results with the qualitative data, providing a comprehensive understanding of research objectives (Creswell, 2014). This integration facilitates explaining observed patterns or trends, bridging statistical data with real-world

experiences (Schoonenboom & Johnson, 2017). Second, the exploratory nature of this framework and the iterative nature of the qualitative components means that the research can adapt as new insights emerge (Creswell, 2014). The qualitative phase uncovered unexpected themes explored further in the quantitative phase, allowing for a more responsive and dynamic research process (Creswell & Clark, 2017). Third, using both qualitative and quantitative methods allows for triangulation, where findings from one method can be cross-verified with those from the other (Creswell, 2014; Creswell & Clark, 2017). This strengthens the overall validity and robustness of the research findings (Ashour, 2018).

Another primary strength of the current study is that it provides timely, focused, and context-specific insights that significantly contribute to the existing knowledge on healthcare access and utilisation among Chinese late-life migrants. First, the valid and significant findings from this study offer a deeper understanding of the needs and challenges faced by recently arrived Chinese late-life migrants in accessing and utilising healthcare services within the Aotearoa NZ healthcare system. These insights can help tailor interventions and policies to meet the needs of recently arrived Chinese late-life migrants, as well as other migrant populations in the Aotearoa NZ context, who face similar issues. Second, the inclusion of both non-pandemic and pandemic contexts is particularly valuable. It highlights how crises such as the COVID-19 pandemic can intensify pre-existing issues and introduce new obstacles for recently arrived Chinese late-life migrants. These insights are crucial for understanding the dynamic nature of healthcare access and utilisation challenges this population faces during different periods. By examining these two distinct contexts, the study provides a comprehensive overview of how external factors influence healthcare access and utilisation, making the findings more relevant and actionable for future pandemic planning as well as business as usual. This dual focus enhances the applicability of the findings to current and future healthcare scenarios.

While the study is specific to the Aotearoa NZ context, its findings have broader implications. The insights from this research can arguably be transferable to other late-life migrants in similar contexts, such as those in other OECD countries. Many of the challenges identified, such as language barriers, cultural misunderstandings, and difficulties in accessing healthcare, are not unique to Aotearoa NZ and may be prevalent in other countries with significant late-life migrant populations. Therefore, the study's findings can

contribute to a better understanding of healthcare access and utilisation challenges faced by late-life migrants globally, providing a foundation for developing interventions and policies that can be adapted to various contexts.

7.6.2 Limitations of the current study

The potential limitations of the current study relate to the study design, time, and resource constraints inherent in doctoral research. Factors such as the limitations of the theoretical framework (Andersen's Behavioural Model of health services utilisation) that used in this study, the impact of the COVID-19 pandemic, the data collection and analysis method used in the qualitative phase, and specific recruitment and survey methods for the quantitative phase may all introduce biases and restrict the generalisability of the findings.

7.6.2.1 Limitations of theoretical framework

This study used Andersen's behaviour model of health services utilisation as the theoretical framework to frame the possible factors that affect Chinese late-life migrants' healthcare access and utilisation in Aotearoa NZ, and interpret and discuss the findings. The application of the Andersen-model was very useful to this study. The model presents a rather complete set of variables important to the study of health services use by general population and/or (ethnic) minorities (Andersen, 1995; Andersen et al., 2013). Hence, the application of the model results in a better understanding of the health behaviour of the studied populations (recently arrived Chinese late-life migrants) for this study.

However, the Andersen-model was criticised in existing literature for several reasons. Some literature argued that Andersen-model did not incorporate the characteristics of decision-taking processes that lead to actual use of healthcare services (Alkhawaldeh et al., 2023; SoleimanvandiAzar et al., 2020). Other literature debated that the characteristics of the social-psychological processes involved in the perception, evaluation and response towards health were also missing in the model (Babitsch et al., 2012; SoleimanvandiAzar et al., 2020).

In our opinion, individual patient's point of view is quite robustly involved in the Andersen-model. However, the model has some limitations. First of all, the processing of the results into the Andersen-model did lead to

some difficulties. For example, some variables of 'community enabling resources' double up as some variables of the health care system components. Specifically, the availability of health professionals and facilities is stated to be a variable of 'community enabling resources' in this study, whereas it is also a component of the health care system resources. What is more, the way Andersen-model reports the results through the processing of variables, which does not render an account of the individuals' behaviour. It explains what is happening, not why the patient chooses to behave in the way he/she does. For instance, this study found that the likelihood of visiting a medical specialist was only associated with participants' accommodation status (living with adult children) and highest qualification (see section 6.3.4 in Chapter Six). Nevertheless, the study cannot explain the reasons behind it using the Andersen-model. Last but most important, the Andersen-model does not fully account for the structural, cultural, and systemic barriers faced by individuals, especially the elderly migrants. Therefore, this study also discussed how the Chinese philosophies (Taoism & Confucianism) affect Chinese late-life migrants' healthcare seeking behaviours (see section 7.3.1.4), to ensure this study provided a culturally targeted outcome.

7.6.2.2 Limitations due to the COVID-19 pandemic

Conducting the study during the COVID-19 pandemic in Aotearoa NZ posed significant challenges. The community outbreaks in the Auckland region between 2020 and 2022 negatively impacted this study's participant recruitment and data collection. This, in turn, introduced potential response biases and restricted the generalisability of the findings.

Significant social and public health disruptions marked the COVID-19 community outbreak period in the Auckland region. The fear of contracting COVID-19 influenced the willingness and ability of potential participants to engage in the study. Meanwhile, there is a high proportion of Chinese reported noticing or even experiencing racism and stigmatisation during the COVID-19 pandemic in Aotearoa NZ (Liu et al., 2023). The stigma associated with being from a region with reported cases of COVID-19 led to increased reluctance among Chinese late-life migrants to participate in face-to-face interviews or any in-person data collection methods.

Moreover, the social distancing measures and lockdowns implemented during this period significantly complicated recruitment efforts, underscoring the challenges faced. These restrictions limited the researchers' ability to reach potential participants through community events, social gatherings, or other traditional face-to-face recruitment methods. As a result, the study relied heavily on digital communication platforms and social media networks to recruit participants. While effective, this approach may have excluded those with limited digital literacy or access, particularly among older adults.

Furthermore, the ongoing stress and uncertainty associated with the pandemic might have influenced participants' responses, potentially introducing response bias. It's important to note this potential influence to ensure a comprehensive understanding of the study's limitations. Participants may have focused more on immediate, pandemic-related concerns, which could overshadow other essential aspects of their healthcare access and utilisation experiences. This heightened state of concern might lead to responses more reflective of the unique circumstances of the pandemic rather than typical, everyday experiences.

In addition to these challenges, the rapid shift to remote data collection methods required researchers to adapt quickly to new technologies for recruitment and interviews as well as methodologies. This sudden transition may have affected the consistency and quality of data collection. For example, the nuances of in-person interviews, such as body language and immediate follow-up questions, may not have been fully captured in virtual interviews. Technical difficulties, such as poor internet connections or unfamiliarity with digital tools, could also impact upon the depth, the level of comfort felt by participants, and as a result the quality of the data collected.

7.6.2.3 Limitations of qualitative phase of the study

Language barriers in the qualitative data collection phase (phase one) may present a limitation. All Chinese late-life participants were interviewed in Mandarin, necessitating transcription and translation into English before analysis. The nuances in language, semantics, and cultural expressions might have need to be better understood and integrated during the translation. To mitigate this issue, the current study conducted by utilised a bilingual Mandarin/English-speaking researcher (myself as the current PhD student), and employed bilingual

translation services. As previously discussed in the Methodology Chapter (see Section 3.5.7 in Chapter Three), bilingual researcher (myself) forward-translated the source text (interview record) from Chinese to English. After that, an independent bilingual translator was employed to translate the English interview records back to Chinese to check the accuracy of the forward translation from the original Chinese text to English. Using these forward-translation and back-translation methods was considered to enhance the reliability and validity of the qualitative data (Chen & Boore, 2009).

The potential for heightened subjectivity in data analysis is a crucial limitation of phase one, however, this was mitigated by outlining my positionality, as well as supervision team member checking of a theme development in a number of transcriptions. The process of transcribing and analysing interview scripts is time-consuming, and the subsequent data analysis can be influenced by researcher's opinions, introducing subjectivity (Crabtree & Miller, 2023; Creswell, 2014; Nardi, 2018). Despite efforts to maintain non-assumptive positions, the researchers' and the supervision team's initial assumptions and expectations could have influenced the early data collection and analysis stages. This bias could shape the direction of the study before more in-depth analysis corrected these initial impressions. However, the use of participants' own words verbatim to extract and form themes, sub-themes, and codes helped ensure that the phase one findings truly reflected participants' views and opinions. Furthermore, as discussed in the Methodology Chapter (see section 3.4.8 in Chapter Three), providing copies of interview transcripts to participants for review and receiving no reported inaccuracies or misinterpretations enhanced the neutrality of the findings.

7.6.2.4 Limitations of quantitative phase of the study

The recruitment method used in the quantitative phase (phase two) may impact the generalisability of the findings. This phase employed network sampling, recruiting participants through social networks (e.g., TANI, CNSST, Age Concern, CMDHB Asian Health Advisory Network, and local Chinese community networks) and social media networks (e.g., WeChat, Facebook, and Skykiwi blog). While this method allowed to reach a diverse group of participants, it also had limitations. Individuals not belonging to these networks or organisations may have yet not been be aware of the option of participating in the study, potentially skewing

the sample towards more connected or engaged individuals. These scope and resource constraints can impact the conclusions' robustness and applicability to broader populations (Creswell, 2014).

As discussed in Chapter Five, the online survey method posed significant challenges for some survey participants, particularly late-life adults who lacked computer literacy/skills. This barrier to access the study is a poignant reminder of the digital divide that exists in the society. Furthermore, the outcomes of CATPCA indicated poor internal consistency and weak construct validity in dimension three (alternative healthcare-seeking behaviours) and dimension four (sociocultural barriers) survey questions. This suggests potential deficiencies in section 2 of the survey ("GP Services Utilisation"). For instance, the response option "*the appointment was with a doctor I didn't want to see*" does not clarify why participants did not want to see the available doctor. This ambiguity could relate to the doctor's attitudes, previous poor experiences, or cultural beliefs, as well as a number of other factors. As a result, these items/questions in dimension three and four should be revised or even removed, and retested before apply as the formal survey.

Additionally, the statistical analysis methods used in phase two, such as weighting variables and the logistic regression model, may introduce limitations that could weaken the reliability and validity of the quantitative findings. First, phase two of this study only used gender and age group weighting variables in survey data analysis. This approach may introduce potential sample imbalance biases for phase two of the study and further restrict the generalisability of the findings to the broader migrant population (Creswell, 2014). Second, phase two of this study was designed only to use predisposing characteristics (i.e., age group, gender, civil status, years in host country, immigration status, and highest qualification) and enabling resources (i.e., living with adult children, incomes, and health/medical insurance) as the independent variables for the binary logistic regression model. However, the likelihood of visiting a medical specialist may not be associated with the predisposing and enabling factors from Andersen's Behavioural Model, which is designed for general health service utilisation (Andersen et al., 2013) and has not been widely used cross culturally. The utilisation of medical specialist care may reflect clinical need-related factors, especially the evaluated needs, which a healthcare provider assesses. As a result, this study did not find any significant outcomes regarding the factors associated with the likelihood of utilising medical specialist services.

7.7 Recommendations and Implications

The findings from this study highlight the challenges recently arrived Chinese late-life migrants faced in accessing and utilising healthcare services in Aotearoa NZ, both in non-pandemic and the COVID-19 pandemic environments. To address these challenges and answer the third research objective of the study, this study offers targeted recommendations that not only aim to overcome existing barriers but also to create a more inclusive and responsive healthcare system that can adapt to the evolving needs of this population. These recommendations, which are designed to be practical and actionable, ensure that healthcare practitioners, education providers, policymakers, and community organisations can play a significant role in their implementation. The recommendations can also guide the design of future studies in the late-life migrant health field.

7.7.1 Implications for Healthcare Practitioners and Education Providers

In non-pandemic environments, this study emphasises the urgent need for more comprehensive multilingual support within the healthcare system, particularly in secondary and tertiary healthcare settings where such support is currently lacking. By hiring more Chinese-speaking healthcare professionals and providing comprehensive language training for existing staff, Chinese late-life migrants' healthcare outcomes can be improved significantly. Moreover, healthcare facilities should expand the availability and accessibility of professional translation services across all levels of healthcare. Translators must be proficient in Mandarin or Cantonese and formally trained in medical terminology and ethical conduct through tertiary institutions to facilitate accurate communication, thereby ensuring the best possible healthcare for this population.

Tertiary institutions can significantly contribute to the implementation of these proposed changes. By incorporating cultural competency, safety, and congruence into medical and healthcare education, future professionals can better serve diverse patient populations. Additionally, including specific language and medical terminology training will help address linguistic needs. Furthermore, partnerships between healthcare institutions and tertiary education providers can ensure the continuous professional development of current healthcare workers, enhancing their cultural competency, cultural safety, and language skills.

Moreover, using technology, such as Apps and Artificial Intelligence (AI), can further enhance these efforts. Healthcare apps tailored for the Chinese migrant community, in Mandarin and/or Cantonese, can provide vital information on healthcare services, appointment scheduling, and health education. These apps can also include features for translation and interpretation to aid communication during medical visits. AI-driven tools can offer real-time translation services, ensuring accurate and efficient communication between patients and healthcare providers. Developing user-friendly, culturally relevant apps on popular platforms among Chinese migrants can significantly improve access to healthcare information and services.

Additionally, to address Chinese late-life migrants' desire for more healthcare education and information, all health-related and healthcare delivery-related materials, such as brochures and instructions, should be available in Chinese, both in print and digital formats, as well as located wherever late-life Chinese social circles gather – Tai chi, mahjong group centres and similar venues. These materials should use culturally relevant and easily understandable language. This is particularly important as the Chinese migrant population is one of the fastest-growing in Aotearoa NZ.

In future pandemic scenarios, the study underscores the importance of having robust communication strategies that are culturally and linguistically appropriate. This includes developing crisis communication plans that consider the unique needs of Chinese late-life migrants, ensuring they receive timely and accurate language appropriate information about healthcare services, preventive measures, and available support systems. For example, establishing dedicated support lines for migrants, providing clear and accessible information about healthcare services and pandemic-related measures, and ensuring that migrants have access to necessary healthcare resources and vaccinations during the pandemic.

Cultural differences play a crucial role in the healthcare experiences of recently arrived Chinese late-life migrants. Therefore, as previously outlined healthcare practitioners need to be equipped with cultural competency education and training. This training should focus on understanding the cultural beliefs and practices of Chinese late-life migrants, recognising the importance of their backgrounds and previous

experiences, and adapting healthcare delivery to meet their specific needs and expectations. By providing practical strategies for effective communication and culturally sensitive care practices, this training can empower practitioners to build stronger, more trusting relationships with their Chinese late-life migrant patients. Ultimately, this comprehensive approach to enhancing linguistic and cultural competence within the healthcare system can ensure that the needs of Chinese late-life migrants are met more effectively, leading to better healthcare access and utilisation and inspiring positive change in the current healthcare delivery services.

7.7.2 Implications for Policymakers

The healthcare system in Aotearoa NZ, along with associated legislations, policies, and standards of practice, has continued to evolve to meet societal changes. Nevertheless, the rapidly increasing migrant population, especially late-life migrants, coupled with their lack of representation in critical policy discussions and, until recently, in statistics that disaggregated different ethnic minorities, has led to challenges for the local healthcare system in Aotearoa NZ. The findings of this study have revealed evident shortcomings in the current policy frameworks and standards of practice, hindering the effective delivery of healthcare services to recently arrived Chinese late-life migrants. These challenges include language barriers, cultural differences in health beliefs and practices, and a lack of understanding of the local healthcare system, particularly within the secondary and tertiary healthcare settings, as well as the COVID-19-related healthcare and support services.

Policy changes must create a more supportive environment for recently arrived Chinese late-life migrants. This includes revising current healthcare policies and standards of practice to explicitly address the increasing needs of a rapidly diverse migrant population, including provisions for language support and culturally tailored services. For instance, new healthcare delivery policy could mandate an appropriate number of translators and translated materials in healthcare settings, ensuring that language barriers do not prevent migrants from accessing and utilising local healthcare services. Culturally tailored services should be funded to support integration. This includes new components for health care workers' ongoing education and undergraduate medical curriculums. These efforts will address the unique health beliefs and behaviours of Chinese late-life migrants and other older migrant populations. Policies that advocate for migrant patient data to include health history, Chinese cultural, medicine usage history, health and food beliefs, and cultural practices around ageing

and dying are important. This comprehensive approach to policy changes aims to address the specific needs and challenges faced by Chinese late-life migrants in the healthcare system.

Implementing these policies requires a concerted effort to ensure consistency across the healthcare system in Aotearoa NZ. This involves creating new policies and providing training and resources to healthcare providers and tertiary health educators to help apply these policies effectively. Healthcare providers play a crucial role in delivering culturally tailored services and overcoming language barriers, while health educators can help raise awareness about the unique health needs of Chinese late-life migrants. Furthermore, policy makers need to establish community navigator positions, similar to those used in Māori communities (Savage et al, 2017), to promote healthcare access and engagement for Chinese late-life migrants as a valuable health workforce addition. These navigators, as cultural liaisons and advocates drawn from the communities could empower migrants to navigate the healthcare system, understand their rights, and support access appropriate services. Community navigators, provided with formalised education could bridge the communication gap between healthcare providers and migrant communities, ensuring cultural nuances are respected and understood by health service providers. Policymakers should establish robust mechanisms for collecting, analysing, and evaluating data on the healthcare experiences of migrants, which will help identify in advance future trends, challenges, and areas where additional support is needed.

In addition to these measures, policymakers must actively and regularly engage with migrant communities. Establishing advisory boards or councils that include representatives from various migrant groups can provide invaluable insights into these communities' specific needs and challenges. This direct engagement not only ensures that the voices of migrants are heard and considered in the policy-making process but also encouraging migrant involvement in local and national political outcomes.

7.7.3 Implications for Community Engagement

Engaging with migrant communities is critical for improving healthcare access and utilisation for Chinese and other ethnic late-life migrants. Healthcare practitioners and policymakers need to be in collaborative partnerships with community organisations like TANI, CNSST, the recently established ethnic health

collective and local Chinese community groups. These organisations, with their established widespread networks and connections, can be the powerful catalysts for change, advocating for Chinese communities and providing invaluable insights into the health challenges and priorities of Chinese late-life migrants.

Moreover, employing co-design principles is essential in developing effective long-term healthcare initiatives tailored to the needs of Chinese late-life migrants. Co-design involves a collaborative process where community members, healthcare professionals, and policymakers work together to design and implement culturally appropriate and responsive services. This approach can be used to hold regular health workshops within Chinese communities to provide information on available healthcare services, health promotion strategies, and disease prevention measures. These workshops would be beneficial for Chinese late-life migrants themselves, their families, and caregivers, as well as community leaders and stakeholders involved in healthcare provision and policy. By engaging the community directly in discussions about their health needs and priorities, these workshops can empower individuals to take an active role in managing their health and navigating the healthcare system effectively. Furthermore, these workshops serve as platforms for facilitating community feedback and insights that can inform the development of healthcare policies and practices. By incorporating the voices and perspectives of Chinese late-life migrants into decision-making processes, policymakers can ensure that healthcare services are not only accessible but also culturally competent and responsive to the diverse needs of the population.

In conclusion, by fostering meaningful partnerships with community organisations, employing community navigators, and using co-design principles to facilitate health workshops, healthcare practitioners and policymakers and community groups together can bridge the gap between the healthcare system and Chinese late-life migrants. This collaborative approach promotes trust, improves healthcare access, and ultimately enhances health outcomes for migrant communities in Aotearoa NZ. This would go considerable way to addressing the language and cultural barriers, lack of health literacy, and limited awareness of available services that hindered healthcare access for this cohort of Chinese late-life migrants.

7.7.4 Future Research Directions

A considerable strength of this current study is that lays the ground for the design of future studies. As previously discussed, the current study was strengthened by employing a combination of qualitative and quantitative methods, known as mixed-methods approaches, with triangulation. Moreover, utilising forward-backwards translation processes in data transcription helps to address potential language biases. Additionally, this current study involved participants in the audit trail, enhancing the findings' relevance and validity. Therefore, future researchers can adopt these research methods and strategies to continue to advance the knowledge of other late-life migrant groups' health seeking and engagement experiences and inform more effective and culturally sensitive healthcare practices.

The limitations of the current study play an essential role in developing appropriate nationally and globally administered studies in the future. This would include larger more representative sampling frameworks, further refined survey methods, co-design approaches, and improved survey designs and analysis. This provides an opportunity to enhance the robustness and applicability of findings in future studies.

First, the current study's survey component small sample size, due to the ongoing COVID-19 pandemic, limits the generalisability of the findings. Future research should focus on more extensive and diverse samples to enhance the applicability of the findings. This can be achieved by recruiting participants from various demographic backgrounds, including age groups, genders, socio-economic statuses, and geographic locations. Furthermore, expanding the study to include other migrant groups in Aotearoa NZ and comparing their healthcare experiences across different healthcare systems globally will build a more comprehensive understanding of the challenges faced by migrant populations. This approach will also help develop more effective strategies for improving healthcare access and utilisation.

Second, using social networks and media as recruitment platforms for nationwide online surveys has proven efficient. Future studies should also consider traditional recruitment methods, such as community events and festivals, and local non-government organisations, to reach a broader potential participant. Combining online and offline recruitment strategies will help ensure a more diverse and representative sample.

Third, participant feedback indicated some areas for improvement in the current survey method, although many found the pilot survey acceptable and feasible. Future studies should improve the survey method by using multiple data collection methods, including online surveys, telephone surveys, electronic mails, and in-person surveys. This mixed-mode approach could accommodate participants with varying levels of digital literacy and access, particularly older adults who may find online surveys challenging.

Fourth, the outcomes of CATPCA indicated poor internal consistency and weak construct validity in some survey dimensions. Namely, these weak questions should be revised or removed. Moreover, the CATPCA should be applied to the entire questionnaire to test all survey questions' internal consistency and construct validity. Additionally, developing and validating new survey instruments that better capture the healthcare experiences and behaviours of migrant populations is essential. Incorporating feedback from pilot surveys and expert reviews can enhance the reliability and validity of the survey instruments. Some participants who participated in the current pilot survey indicated some areas for improvement in the current survey questionnaires. Therefore, the questionnaire content in future studies could be modified and merged to reduce the number of survey questions, making it more accessible and less time-consuming for participants. Simplifying the survey structure and focusing on the most critical questions will improve response rates and data quality.

Moreover, the design of the current pilot survey did not explore whether the healthcare-seeking behaviour among Chinese late-life migrants is reasonable. For instance, some participants mentioned that they had not visited medical specialists, but the reasons behind this behaviour must be investigated in depth. Future studies should consider incorporating individual and evaluated needs into their surveys to capture a more comprehensive picture of healthcare utilisation. This would involve including questions that address the specific clinical conditions and medical assessments that drive the need for specialist care. By doing so, researchers can better understand the direct health-related factors that influence the utilisation of medical specialists. This approach will provide a more nuanced understanding of healthcare needs and utilisation patterns, leading to more targeted and effective healthcare interventions for different populations.

The current study used gender and age group weighting variables in survey data analysis, which may introduce sample imbalance biases. Future studies should employ additional weighting variables, such as birthplace, time resident in the host country, and immigration status, to minimise sample imbalance and enhance the generalisability of the findings to the broader migrant population. Implementing stratified sampling techniques can also help ensure that subgroups within the migrant population are adequately represented, leading to more accurate and generalisable results.

Additionally, Andersen's behaviour model can effectively identify individual factors influencing healthcare utilisation. However, it has limitations in identifying variables, reporting results, as well as fully accounting the structural, cultural, and systemic barriers faced by elderly migrants. Therefore, critical reflecting the limitations of Andersen's model and developing a more culturally sensitive model to study late-life migrants' healthcare utilisation could be an area for future investigation.

7.8 Conclusion of the Study

This mixed-methods study explored recently arrived Chinese late-life migrants' healthcare access and utilisation experiences in the context of the NZ healthcare system in the face of non-pandemic and the COVID-19 pandemic circumstances. Phase one of the study (qualitative phase) conducted 12 in-depth semi-structured interviews to capture the lived experiences of the interview participants. Employing a QD approach, this phase identified potential predisposing characteristics, personal and community enabling resources, and healthcare need factors (barriers and enablers) in accessing and utilising local healthcare services among recently arrived Chinese late-life migrants. Following an exploratory sequential mixed-methods framework, the key themes from phase one were drawn to form guidelines for informing the pilot survey, using an established MOH survey, for phase two of the study. By collecting quantitative data from a reasonably large sample (63 survey participants), phase two of the study provided a broader understanding of the trends and patterns identified during phase one (qualitative phase).

Comparing and contrasting the qualitative themes from phase one with the survey outcomes from phase two, the factors that may affect recently arrived Chinese late-life migrants in accessing and utilising NZ healthcare services were framed by Andersen's Behavioural Model (Andersen et al., 2013), including 1) predisposing characteristics (i.e., language components and cultural beliefs), 2) personal enabling resources (i.e., lack of knowledge towards healthcare delivery), and 3) community enabling resources (i.e., limited health resources).

By conducting a comprehensive analysis that juxtaposed the study's findings with existing literature, this study has unearthed crucial and novel insights into the factors that shape the healthcare access and service utilisation for recently arrived Chinese late-life migrants in Aotearoa NZ. This study's findings hold significant implications for healthcare practitioners, policymakers, non-government organisations, researchers, and allied individuals interested in migrant healthcare experiences.

First, language competency and cultural conflicts between migrant patients and healthcare practitioners are significant predisposing factors that lead to ineffective communication and conflicts in health-related concepts between Chinese late-life migrants and NZ healthcare practitioners. These issues can be seen to result in a breakdown of patient-practitioner relationships, crucial for patient trust development, satisfaction and sustained health and wellbeing. Second, the lack of enabling resources poses a significant challenge for Chinese late-life migrants in accessing the new healthcare system. Their limited knowledge of the NZ healthcare system, coupled with the scarcity of information sources, often lead to confusion and delays in seeking appropriate healthcare services. These challenges, such as transportation issues and the unavailability of Chinese-speaking healthcare practitioners, significantly increased waiting times, particularly for secondary and tertiary care services. Additionally, one significant finding of this study is that the ongoing COVID-19 pandemic significantly hindered Chinese late-life participants from accessing various healthcare services in Aotearoa NZ. During lockdown periods, when in-person care was limited, many participants faced challenges accessing timely healthcare. They felt inadequately informed about the NZ government's COVID-related healthcare provisions due to a lack of Chinese language-based information in mainstream media channels.

The findings from the study illuminate critical aspects of what healthcare access and utilisation mean for recently arrived Chinese late-life migrants, offering two key insights that are particularly valuable. The first significant insight is the issue of ineffective communication as a profound barrier to accessing health services, which stems from disparities in language proficiency and conceptual understanding of Aotearoa NZ's healthcare system. It reveals that the problem is not solely about the lack of English proficiency among Chinese late-life migrants but also the complexities of patient-practitioner communications. The second significant finding is the need for more cultural recognition and sensitivity in healthcare practice. The study found that healthcare providers were seen by these participants to lack the necessary cultural competency to engage with Chinese late-life migrants effectively. This gap was seen to lead to cultural misunderstandings, perceived disrespect, and ultimately reduce effectiveness of healthcare interventions. This knowledge is especially crucial in pandemic circumstances, where healthcare needs and barriers are often exacerbated.

This study is significant for Chinese communities, healthcare providers, health education providers, non-government organisations, and policymakers as it provides timely and participant-based data. By collecting firsthand information about recently arrived Chinese late-life migrants' healthcare utilisation experiences in Aotearoa NZ during non-pandemic periods and the COVID-19 pandemic, this study offers a comprehensive and nuanced understanding of the factors that affect healthcare access and utilisation within this community. Additionally, the evaluations conducted on the pilot survey offer valuable insights for future research, providing a foundation for designing a nationally representative survey that can more accurately ascertain the factors affecting late-life migrants' experiences of accessing and utilising health services during and beyond pandemics. This potential future research could further refine the understanding and lead to more targeted and effective interventions to support the health and well-being of Chinese and other ethnic late-life migrants both in Aotearoa NZ and globally.

REFERENCE

Allen, M. (2017). Survey: Questionnaire. In M. Allen (Eds.), *The SAGE encyclopaedia of communication research methods* (pp. 1717–1718). https://doi.org/10.4135/9781483381411

Alkhawaldeh, A., ALBashtawy, M., Rayan, A., Abdalrahim, A., Musa, A., Eshah, N., Khait, A. A., Qaddumi, J., Khraisat, O., & ALBashtawy, A. (2023). Application and use of Andersen's behavioral model as theoretical framework: A systematic literature review from 2012-2021. *Iranian Journal of Public Health, 52*(7),1346–1354. https://doi.org/10.18502/ijph.v52i7.13236.

Altman, D. G. & Bland, J. M. (2005). Standard deviations and standard errors. *British Medical Journal, 331*(7521), 903. https://doi.org/10.1136/bmj.331.7521.903

Andersen, R. M. (1995). Revisiting the behavioural model and access to medical care: Does it matter? *Journal of Health and Social Behaviour, 36*(1), 1–10. https://www.jstor.org/stable/2137284

Andersen, R. M., Davidson, P. L., & Baumeister, S. E. (2013). Improving access to care. In G. F. Kominski (4th ed.), *Changing the U.S. health care system: Key issues in health services policy and management* (pp. 33–69). Jossey-Bass.

Armstrong, J. (2010). Naturalist inquiry. In N.J. Salk (Eds.), *Encyclopaedia of research design* (pp.880-885). SAGE Publications. http://web.utk.edu/~ewbrewer/pdf/encylopedia/Encyclopedia%20of%20Research%20Design_Volume%202.pdf

Arora, S., Bergland, A., Straiton, M., Rechel, B., & Debesay, J. (2018), Older migrants' access to healthcare: A thematic synthesis. *International Journal of Migration, Health and Social Care, 14*(4), 425–438. https://doi.org/10.1108/IJMHSC-05-2018-0032

Ashour, M. L. (2018). Triangulation as a powerful methodological research technique in technology-based services. *Business And Management Studies an International Journal, 6*(1), 193–208. http://dx.doi.org/10.15295/bmij.v6i1.209

Auckland University of Technology Ethics Committee. (2019). *Applying for ethics approval: Guidelines and procedures*. https://www.aut.ac.nz/research/researchethics/guidelines-and-procedures#2

Babitsch, B., Gohl, D., & von Lengerke, T. (2012). Re-revisiting Andersen's behavioural model of health services use: A systematic review of studies from 1998-2011. *Psychosomatic Medicine, 9*, Doc11. https://doi.org/10.3205/psm000089

Basson, D. (2011). Completion rate. In P. J. Lavrakas (Ed.), *Encyclopaedia of survey research methods* (pp. 113–114). SAGE Publications. https://doi.org/10.4135/9781412963947

Battegay, M., Kuehl, R., Tschudin-Sutter, S., Hirsch, H. H., Widmer, A. F., & Neher, R. A. (2020). 2019-Novel coronavirus (2019-nCoV): Estimating the case fatality rate – a word of caution. *Swiss Medical Weekly, 150*, w20203. http://doi.org/10.4414/smw.2020.20203

Bennett, D. A. (2001). How can I deal with missing data in my study? *Australian and New Zealand Journal of Public Health, 25*(5), 464–9. https://pubmed.ncbi.nlm.nih.gov/11688629/

Bethlehem, J. (2011). Weighting. In P. J. Lavrakas (Ed.), *Encyclopaedia of survey research methods* (Vols. 1–0). SAGE Publications. https://dx.doi.org/10.4135/9781412963947

Biesta, G. J. J. (2009). How to use pragmatism pragmatically? Suggestions for the twenty-first century. *Education and Culture, 25*(2). 34–45. http://doi.org/10.1353/eac.0.0038

Biesta, G. J. J. (2015). Pragmatism and the philosophical foundations of mixed method research1. In A. Tashakkori & C. Teddlie (Eds.), *SAGE handbook of mixed methods in social & behavioural research* (2nd ed., pp. 95–118). https://doi.org/10.4135/9781506335193

Bolarinwa, O. A. (2015). Principles and methods of validity and reliability testing of questionnaires used in social and health science researches. *Nigerian Postgraduate Medical Journal, 22*(4), 195–201. https://doi.org/10.4103/1117-1936.173959

Bowling, A. (2014). *Research methods in health: Investigating health and health services* (4th ed.). Open University Press. https://edisciplinas.usp.br/pluginfile.php/4374657/mod_resource/content/1/Research%20Methods%20in%20Health.pdf

Braun, V., & Clark, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*(2), 77–101. http://dx.doi.org/10.1191/1478088706qp063oa

Brick, J. M. (2013). Unit nonresponse and weighting adjustments: A critical review. *Journal of Official Statistics, 29*(3), 329–353. https://doi.org/10.2478/jos-2013-0026

Byles, J. E. (2007). Fit and well at eighty: Defying the stereotypes of age and illness. *Annals of the New York Academy of Sciences, 1114*,107–20. https://doi.org/10.1196/annals.1396.027

Byles, J. E., Vo, K., Forder, P. M., Thomas, L., Banks, E., Rodgers, B., & Bauman, A. (2016). Gender, mental health, physical health and retirement: A prospective study of 21,609 Australians aged 55–69 years. *Maturitas, 87*, 40–48. http://doi.org/10.1016/j.maturias.2016.02.011

Cabieses, B., Tunstall, H., Pickett, K. E., & Gideon, J. (2012). Understanding differences in access and use of healthcare between international immigrants to Chile and the Chilean-born: A repeated cross-sectional population-based study in Chile. *International Journal for Equity in Health, 11*, 68–83. https://doi.org/10.1186/1475-9276-11-68

Castillo-Montoya, M. (2016). Preparing for interview research: The interview protocol refinement framework. *The Qualitative Report, 21*(5), 811–831. https://nsuworks.nova.edu/tqr/vol21/iss5/2

Chatterjee, C., Nayak, N. C., Mahakud, J., & Chatterjee, S. C. (2019) Factors affecting the choice of health care utilisation between private and public services among the elderly population in India. *International Journal of Health Planning and Management, 34*(1), e736–e751. http://doi.org/10.1002/hpm.2686.

Chen, H., Chi, I., & Liu, R. (2019). Hospital utilisation among Chinese older adults: Patterns and predictors. *Journal of Aging and Health, 31*(8),1454–1478. https://doi.org/10.1177/0898264318780546

Chen, H. Y., & Boore, J. R. (2009). Translation and back-translation in qualitative nursing research: Methodological review. *Journal of Clinical Nursing, 19*(1–2), 234–9. https://doi.org/10.1111/j.1365-2702.2009.02896.x

Chew-Graham, C., & Ray, M. (2016). *Mental health and older people: A guide for primary care practitioners*. https://doi.org/10.1007/978-3-319-29492-6

Choi, L. L. S., Jung, P., & Zhang, K. (2022). What matters most to older Chinese adults. *Journal of Transcultural Nursing, 33*(2), 169–177. http://doi.org/10.1177/10436596211053655

Chung, J., Seo, J. Y., & Lee, J. W. (2018). Using the socioecological model to explore factors affecting health-seeking behaviours of older Korean immigrants. *International Journal of Older People Nursing, 13*(2), e12179. https://doi.org/10.1111/opn.12179

Collins English Dictionary. (2024). *Immigration*. https://www.collinsdictionary.com/dictionary/english/cap-immigration

Component loadings. (2022). SPSS Statistics. https://www.ibm.com/docs/en/spss-statistics/saas?topic=systems-component-loadings

Coolican, H. (2013). *Research methods and statistics in psychology* (5th ed.). Hodder & Stoughton. https://staffsites.sohag-univ.edu.eg/uploads/1331/1575373414%20-%20Research%20Methods%20and%20Statistics%20in%20Psychology.pdf

Costello, A. B., & Osborne, J. (2019). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation,10*(7), 1-9. https://doi.org/10.7275/jyj1-4868

Crabtree, B. F., & Miller, W. L. (2023). *Doing qualitative research* (3rd ed.). SAGE Publication.

Creamer, E. G. (2017). *An introduction to fully integrated mixed methods research*. SAGE Publication.

Creswell, J. W. (2014). *Research design: Qualitative, quantitative, and mixed methods approaches* (4th ed.). SAGE Publication.

Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting mixed methods research*. SAGE Publications. https://www.scirp.org

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Allen & Unwin. https://doi.org/10.4324/9781003115700

Dastjerdi, M., Olson, K., & Ogilvie, L. (2012). A study Iranian immigrants' experiences of accessing Canadian health care services: A grounded theory. *International Journal for Equity in Health, 11*(55), 1–15. https://doi.org/10.1186/1475-9276-11-55.

Davis, J. C. (2002). Statistics and data analysis in geology (3rd ed.). John Wiley & Sons.

Deng, C., Li, X., & Pan, J. (2018). Private hospital expansion in China: A global perspective. *Global Health Journal, 2*(2),33–46. http://doi.org/10.1016/S2414-6447(19)30138-1

Denton, P. B., Parke, S. J., Tao, T., Zhang, X. (2022). Eigenvectors from eigenvalues: A survey of a basic identity in linear algebra. *Bulletin of the American Mathematical Society, 59*(1), 31–58. https://doi.org/10.1090/bull/1722

DePoy, E., & Gitlin, L. N. (2005). *Introduction to research: Understanding and applying multiple strategies* (3rd ed.). Elsevier.

DeSouza, R., & Garrett, N. (2005). *Access issues for Chinese people in New Zealand* (Final report prepared for Accident Compensation Corporation). https://www.ecald.com/assets/Resources/Assets/Access-Issues-Chinese-People-NZ.pdf

Derose, K. P., Bahney, B. W., Lurie, N., & Escarce, J. J. (2009). Immigrants and health care access, quality, and cost. *Medical Care Research & Review, 66*(4), 355–408. https://doi.org/10.1177/1077558708330425

Devakumar, D., Shannon, G., Bhopal, S. S., & Abubakar, I. (2020). Racism and discrimination in COVID-19 responses. *The Lancet Journal, 395*(10231), 1194. https://doi.org/10.1016/S0140-6736(20)30792-3

Diaz, V. A. (2002). Cultural factors in preventive care: Latinos. *Primary Care: Clinics in Office Practice, 29*(3), 503–517. https://doi.org/10.1016/S0095-4543(02)00010-6

Denzin, N. K. (2009). *The research act: A theoretical introduction to sociological methods* (Eds.). Routledge. https://doi.org/10.4324/9781315134543

Denzin, N. K., & Lincoln, Y. S. (2008). *Strategies of qualitative inquiry* (3rd ed.). SAGE Publications.

Dicicco-Bloom, B., & Crabtree, B. F. (2006). The qualitative research interview. *Medical Education, 40*(4), 314–21. https://doi.org/10.1111/j.1365-2929.2006.02418.x

Dong, X. Q., Chang, E. S., Wong, E., Wong, B., & Simon, M. A. (2011). How do U.S. Chinese older adults view elder mistreatment? Findings from a community-based participatory research study. *Journal of Aging and Health, 23*(2), 289–312. http://doi.org/10.1177/0898264310385931

Doody, O., & Bailey, M. E. (2016). Setting a research question, aim and objective. *Nurse Researcher, 23*(4), 19–23. https://doi.org/10.7748/nr.23.4.19.s5

Doody, O., & Noonan, M. (2013). Preparing and conducting interviews to collect data. *Nurse Researcher, 20*(5), 28–32. https://doi.org/10.7748/nr2013.05.20.5.28.e327

Drost, E. A. (2011). Validity and reliability in social science research. *Education Research & Perspectives, 38*(1), 105–123. https://www3.nd.edu/~ggoertz/sgameth/Drost2011.pdf

Dunteman, G. H. (1989). *Principal components analysis*. SAGE. https://doi.org/10.4135/9781412985475

Edwards, A. L. (1976). The correlation coefficient. In A. L. Edwards (Eds.), *An introduction to linear regression and correlation* (pp. 33–46). W. H. Freeman.

European Centre for Disease Prevention and Control. (2020). *Rapid risk assessment. Novel coronavirus disease 2019 (COVID-19) pandemic: Increased transmission in the EU/EEA and the UK–sixth update.* https://www.ecdc.europa.eu/en/publications-data/rapid-risk-assessment-novel-coronavirus-disease-2019-covid-19-pandemic-increased

Eysenbach, G. (2004). Improving the quality of web surveys: The checklist for reporting results of internet E-surveys (CHERRIES). *Journal of Medical Internet Research, 6*(4), e34. https://doi.org/10.2196/jmir.6.3.e34

Fetters, Michael D., Leslie A. Curry, & John W. Creswell. (2013). Achieving integration in mixed methods designs - principles and practices. *Health Services Research, 48*(6 pt2), 2134–2156. http://www.dx.doi.org/10.1111/1475-6773.12117

Fink, A. (2010). Survey research methods. In P. Peterson, E, Baker, B. McGaw (Eds.), *International encyclopaedia of education* (3rd ed., pp.152–160). Elsevier. https://doi.org/10.1016/B978-0-08-044894-7.00296-7

Funk, C., & Lopez, M. H. (2022). Hispanic Americans' experiences with health care. In C. Frunk, M. H. Lopez & H. Nolan (Eds.), *Hispanic Americans' trust in and engagement with science*. Pew Research Centre (pp. 21–38). Pew Research Centre.

https://www.pewresearch.org/science/2022/06/14/hispanic-americans-experiences-with-health-care/

Geuens, M., & De Pelsmacker, P. (2017). Planning and conducting experimental advertising research and questionnaire design. *Journal of Advertising*, *46*(1), 83–100. https://doi.org/10.1080/00913367.2016.1225233

Gifi, A. (1990). *Nonlinear multivariate analysis*. John Wiley & Sons. https://www.wiley.com/en-us/Nonlinear+Multivariate+Analysis-p-9780471926207

Gill, J., & Adamson, B. (2011). The English language in mainland China: A sociolinguistic profile. In J. Gill & B. Adamson (Eds.), *English language education across greater China* (pp. 23–45). Multilingual Matters. https://doi.org/10.21832/9781847693518-004

Glaser, P. (2011). Response rate. In P. J. Lavrakas (Ed.), *Encyclopaedia of survey research methods* (pp. 759–763). SAGE Publications. https://doi.org/10.4135/9781412963947

Goldstone, J., Grinin, L., & Korotayev, A. (2015). *Research into global ageing and its consequences: Introduction.* https://hal-hprints.archives-ouvertes.fr/hprints-01831612/document

Green, J. (2020). *Covid-19 is becoming the disease that divides us: By race, class and age*. Bloomberg. https://www.bloomberg.com/news/articles/2020-03-21/covid-19-divides-u-s-society-by-race-class-and-age

Green, J., & Thorogood, N. (2018). *Qualitative methods for health research* (4th ed.). SAGE Publications.

Groves, R. M., Fowler, F. J., Couper, M. P., Lepkowski, J. M., Tourangeau, R., Singer, E., & Lepkowski, J. M. (2009). *Survey methodology* (2nd ed.). Wiley.

Guba, E. G. (1990). *The paradigm dialogs*. SAGE Publication.

Guo, M., Steinberg, N. S., Dong, X. Q., Tiwari, A. (2018). Is family relations related to health service utilisation among older immigrants: Evidence from Chinese elderly in the United States. *Health & Social Care in the Community*, *27*(1)., 215–225. https://doi.org/10.1111/hsc.12642

Hall, J. (2008). Cross-sectional survey design. In P. J. Lavrakas (Ed.), *Encyclopaedia of survey research methods* (pp. 173). https://doi.org/10.4135/9781412963947

Harper, D. A. T. (Ed.). (1999). Numerical palaeobiology: Computer based modelling and analysis of fossils and their distributions. John Wiley & Sons.

Harrell, F. E. (2015). Binary logistic regression. In F. E. Harrell (Eds), *Regression modelling strategies* (2nd ed., pp. 219–274). Springer Series in Statistics. https://doi.org/10.1007/978-3-319-19425-7_10

Hastie, T., Tibshirani, R., & Buja, A. (1994). Flexible discriminant analysis. *Journal of the American Statistical Association, 89*, 1255–1270. https://doi.org/10.1080/01621459.1994.10476866

Hastings, S. L. (2012). Triangulation. In N. J. Salkind (Ed.), *Encyclopaedia of research design* (pp. 1538–1540). https://doi.org/10.4135/9781412961288

Health and Disability Commissioner. (2023). *Code of Health and Disability Services Consumers' Rights*. https://www.hdc.org.nz/your-rights/about-the-code/code-of-health-and-disability-services-consumers-rights/

Heap, J., & Fors, S. (2015). Duration and accumulation of disadvantages in old age. *Social Indicators Research, 123*(2), 411–429. https://doi.org/10.1007/s11205-014-0744-1

Heidenreich, M. T., Koo, F. K., & White, K. (2014). The experience of Chinese immigrant women in caring for a terminally ill family member in Australia. *Collegian, 21*(4), 275–285. https://doi.org/10.1016/j.colegn.2013.06.002

Hiam, L., Gionakis, N., Holmes, S. M., & McKee, M. (2019). Overcoming the barriers migrants face in accessing health care. *Public Health, 172*, 89–92. https://doi.org/10.1016/j.puhe.2018.11.015

Ho, E. S. (2015). The changing face of Asian peoples in New Zealand. *New Zealand Population Review, 41*, 95–118. https://ecald.com/assets/Resources/Assets/Changing-Face-Asian-PP-NZ.pdf

Holmes, S. M. (2012). The clinical gaze in the practice of migrant health: Mexican migrants in the United States. *Social Science & Medicine, 7*4(6), 873–881. https://doi.org/10.1016/j.socscimed.2011.06.067

Hu, A. (2017). Providing more but receiving less: Daughters in intergenerational exchange in mainland China. *Journal of Marriage and Family, 79*(3), 739–757.

https://doi.org/10.1111/jomf.12391

Hudson, M. L., & Russell, K. (2009). The Treaty of Waitangi and research ethics in Aotearoa. *Journal of Bioethical Inquiry, 6*(1). 61–68. https://doi.org/10.1007/s11673-008-9127-0

Hui, D. S., I Azhar, E., Madani, T. A., Ntoumi, F., Kock, R., Dar, O., Ippolito, G., Mchugh, T. D., Memish, Z. A., Drosten, C., Zumla, A., & Petersen, E. (2020). The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health – The latest 2019 novel coronavirus outbreak in Wuhan, China. *International Journal of Infectious Diseases, 91*, 264–66. http://doi.org/10.1016/j.ijid.2020.01.009

Immigration New Zealand. (2019). *Resident applications accepted by financial year*. https://www.immigration.govt.nz/documents/statistics/statistics-residence-applications-accepted

Immigration New Zealand. (n.d.). *Healthcare services*. https://www.newzealandnow.govt.nz/living-in-nz/healthcare/healthcare-services

International Business Machines. (n.d.). IBM SPSS categories 28. https://www.ibm.com/docs/en/SSLVMB_28.0.0/pdf/IBM_SPSS_Categories.pdf

Jacob, S. A., & Ferguson, S. P. (2012). Writing interview protocols and conducting interviews: Tips for students new to the field of qualitative research. *The Qualitative Report, 17*(42), 1–10. https://nsuworks.nova.edu/tqr/vol17/iss42/3

Jacoby, W. G. (2011). Alternating least squares, optimal scaling. In W. G. Jacoby (Eds.), *Data theory and dimensional analysis*. SAGE. https://doi.org/10.4135/9781412983860

Jamshed, S. (2014). Qualitative research method-interviewing and observation. *Journal of Basic and Clinical Pharmacy, 5*(4), 87–88. https://doi.org/10.4103/0976-0105.141942

Janssen, K. J., Donders, A. R., Harrell, F. E. Jr., Vergouwe, Y., Chen, Q., Grobbee, D. E., & Moon, K. G. M. (2010). Missing covariate data in medical research: To impute is better than to ignore. *Journal of Clinical Epidemiology, 63*(7), 721–7. https://doi.org/10.1016/j.jclinepi.2009.12.008

Jensen, D. (2012a). Transferability. In L. M. Given (Ed.), *The SAGE encyclopaedia of qualitative research method* (pp. 886–887). https://doi.org/10.4135/9781412963909

Jensen, D. (2012b). Confirmability. In L. M. Given (Ed.), *The SAGE encyclopaedia of qualitative research method* (pp. 139). https://doi.org/10.4135/9781412963909

Jiang, M. Z., Fu, Q., Xiong, J. Y., Li, X. L., Jia, E. P., Peng, Y. Y., & Shen, X. (2020). Preferences heterogeneity of health care utilisation of community residents in China: A stated preference discrete choice experiment. *BMC Health Services Research, 20*(1),430. https://doi.org/10.1186/s12913-020-05134-4

Jiang, Q., & Pan, J. (2020). The evolving hospital market in China after the 2009 healthcare reform. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing, 57*, 1–11. http://doi.org/10.1177/0046958020968783

Jick, T. D. (1979). Mixing qualitative and quantitative methods: Triangulation in action. *Administrative Science Quarterly, 24*(4), 602–611. https://doi.org/10.2307/2392366

Johnson, B., & Gray, R. (2010). A history of philosophical and theoretical issues for mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *SAGE handbook of mixed methods in social and behavioural research* (2nd ed.), pp. 69–94). https://doi.org/10.4135/9781506335193.n3

Jolliffe, I. T. (2002). Principle component analysis for special types of data. In I. T. Jolliffe (Eds.), *Principal component analysis. Springer series in statistics* (2nd ed., pp. 338–372). Springer. https://doi.org/10.1007/0-387-22440-8_1

Kaiser, H. F. (1960). The application of electronic computers to factor analysis. *Educational and Psychological Measurement, 20*, 141–151. https://dx.doi.org/10.1177/001316446002000116

Kan, K. L., Connor, H., & Beddoe, L. (2020). Accessing social service support: Barriers experienced by Chinese migrants living in Auckland, Aotearoa New Zealand. *Aotearoa New Zealand Social Work, 32*(4), 131–144. http://doi.org/10.11157/anzswj-vol32iss4id800

Kim, J., & Frank-Miller, E. (2015). Poverty, Health Insurance Status, and Health Service Utilization Among the Elderly. *Journal of Poverty, 19*(4), 424–444. https://doi.org/10.1080/10875549.2015.1015070

Kim, J. H., & Silverstein, M. (2021). Are filial piety and ethnic community engagement associated with psychological wellbeing among older Chinese American immigrants? *A cultural resource perspective. Research on Aging, 43*(2), 63–73.

https://doi.org/10.1177/0164027520937477

Kim, W., & Keefe, R. H. (2010). Barriers to healthcare among Asian Americans. *Social Work in Public Health, 25*(3–4), 286–295. https://doi.org/10.1080/19371910903240704

Kirmayer, L. J., Narasiah, L., Munoz, M., Rashid, M., Ryder, A. G., Guzder, J., Hassan, G., Rousseau, C., & Pottie, K. (2011). Common mental health problems in immigrants and refugees: General approach in primary care. *Canadian Medical Association Journal,183*(12), E959–E967. https://doi.org/10.1503/cmaj.090292

Knapp, T. R. (1991). Coefficient alpha: Conceptualizations and anomalies. *Research in Nursing & Health, 14*(6), 457–480. https://doi.org/10.1002/nur.4770140610

Koh, A., Morgan, T., Wiles, T., Williams, L., Xu, J., & Gott, M. (2022). Older Chinese and Korean migrants' experiences of the first COVID-19 lockdown in Aotearoa New Zealand: A qualitative study. *Asia Pacific Viewpoint, 64*(1), 60–71. https://doi.org/10.1111/apv.12364

Koopman-Boyden, P. (2018). *Older people*. Te Ara - the Encyclopaedia of New Zealand. http://www.TeAra.govt.nz/en/older-people

Kothari, C. R. (2004). *Research methodology: Methods and techniques* (2nd ed.). New Age. https://www.scirp.org/reference/ReferencesPapers?ReferenceID=1285422

Krefting, L. (1991). Rigor in qualitative research: The assessment of trustworthiness. *American Journal of Occupational Therapy, 45*(3), 214–222. http://doi.org/10.5014/ajot.45.3.214

Kvale, S., & Brinkmann, S. (2009). *Interviews: Learning the craft of qualitative research interviewing*. SAGE Publication.

Lai, D. W., & Chau, S. B. (2007). Predictors of health service barriers for older Chinese immigrants in Canada. *Health Social Work, 32*(1), 57–65. https://doi.org/10.1016/10.1093/hsw/32.1.57

Lai, D. W. L., & Surood, S. (2009). Chinese health beliefs of older Chinese in Canada. *Journal of Aging and Health, 21*(1), 38–62. https://doi.org/10.1177/0898264308328636

Lambert, V. A., & Lambert, C. E. (2012). Qualitative descriptive research: An acceptable design. *Pacific Rim International Journal of Nursing Research, 16,* 255–256. https://www.tci-thaijo.org/index.php/PRIJNR/article/view/5805/5064

Lance, C., Butts, M. M., & Michels, & Michels, L. C. (2006). The sources of four commonly reported cutoff criteria: What did it really say? *Organisational Research Methods, 9*(2), 202–220. https://doi.org/10.1177/1094428105284919

Law of the People's Republic of China on the Protection of Rights and Interests of Elderly, No.73. (1996). http://www.china.org.cn/government/laws/node_1205794.htm

Lee, G. (2011). Network sampling. In G. Lee (Eds.), *Encyclopaedia of survey research methods* (pp. 507). https://dx.doi.org/10.4135/9781412963947

Leech, N. L. (2010). Interviews with the early developers of mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *SAGE handbook of mixed methods in social & behavioural research* (pp. 253–72). SAGE Publication.

Levesque, J. F., Harris, M. F., & Russell, G. (2013). Patient-centred access to health care: conceptualising access at the interface of health systems and populations. *International Journal for Equity in Health, 12*(18), 1–9. https://doi.org/10.1186/1475-9276-12-18

Li, X., Lu, J. P., Hu, S., Cheng, K. K., De Maeseneer, J., Meng, Q., Mossialos, E., Xu, D. R., Yip, W., Zhang, H. Z., Krumholz, H. M., Jiang, L. X., & Hu, S. S. (2017). *The primary health-care system in China. Lancet, 390*(10112), 2584–2594. https://doi.org/10.1016/S0140-6736(17)33109-4

Liamputtong, P. (2020). *Qualitative research methods* (5th ed.). Oxford University Press.

Lin, S. L., Yan, Y., & Hu, X. X. (2022). Influence of degree of Chinese cultural identity and performance expectation on consumption attitude for health care of traditional Chinese medicine. *Computational and Mathematical Methods in Medicine, 2022*(3), 1–9. https://doi.org/10.1155/2022/3342169

Lin, X., Bryant, C., Boldero, J., & Dow, B. (2015). Older Chinese immigrants' relationships with their children: A literature review from a solidarity conflict perspective. *The Gerontologist, 55*(6), 990–1005. http://doi.org/10.1093/geront/gnu004

Lincoln, Y., & Guba, E. G. (1985). *Naturalistic inquiry*. SAGE Publication.

Linting, M., Meulman, J. J., Groenen, P. J. & van der Koojj, A. J. (2007). Nonlinear principal components analysis: Introduction and application. *Psychological Methods, 12*(3), 336–358. https://doi.org/10.1037/1082-989X.12.3.336

Linting, M. & van der Kooij, A. (2012). Nonlinear principal components analysis with CATPCA: A tutorial. *Journal of Personality Assessment, 94*(1), 12–25. https://doi.org/10.1080/00223891.2011.627965

Little, J. S. (2011). Standard error. In P. J. Lavrakas (Ed.), *Encyclopaedia of survey research methods* (pp. 838–858). SAGE Publications. https://dx.doi.org/10.4135/9781412963947

Little, R. J., & Rubin, D. B. (2019). *Statistical analysis with missing data* (3rd ed.). John Wiley & Sons Inc. https://doi.org/10.1002/9781119482260

Liu, L. S., Jia, X., Zhu, A., Ran, G. J., Siegert, R., French, N., & Johnston, D. (2023). Stigmatising and racialising COVID-19: Asian people's experience in New Zealand. *Journal of Racial and Ethnic Health Disparities, 10*(6), 2704–2717. http://doi.org/10.1007/s40615-022-01448-7

Liu, X. Y., Cook, G. A., & Cattan, M. (2017). Support networks for Chinese older immigrants accessing English health and social care services: The concept of Bridge People. *Health & Social Care in the Community, 25*(2), 667–677. https://doi.org/10.1111/hsc.12357

Liu, Y. (2003). Ageing service needs and use among Chinese American seniors: Intragroup variations. *Journal of Cross-Cultural Gerontology, 18*(3), 273–301. http://doi.org/10.1023/B:JCCG.0000004899.74875.ef

Liu, Z., Beaver, K., & Speed, S. (2015). Chinese Elders' views on their interactions in general practice: A grounded theory study. *Ethnicity & Health, 20*(2), 129–144. https://doi.org/10.1080/13557858.2014.890176

Loyd, C., Markland, A. D., Zhang, Y., Fowler, M., Harper, S., Wright, N. C., Carter, C. S., Buford, T. W., Smith, C. H., Kennedy, R., & Brown, C, J. (2020). Prevalence of hospital-associated disability in older adults: A meta-analysis. *The Journal of Post-Acute and Long-Term Care Medicine, 21*(4),455-461.e5.

https://doi.org/10.1016/j.jamda.2019.09.015

Lum, I. D., Swartz, R. H., & Kwan, M. Y. W. (2016). Accessibility and use of primary healthcare for immigrants living in the Niagara Region. *Social Science & Medicine, 156*, 73–79. http://doi.org/10.1016/j.socscimed.2016.03.024

Lune, H., & Berg, B. L. (2017). *Qualitative research methods for the social sciences* (9th ed.). Pearson. http://law.gtu.ge/wp-content/uploads/2017/02/Berg-B.-Lune-H.-2012.-Qualitative-Research-Methods-for-the-Social-Sciences.pdf

Ma, G. X., Fang, C., Tan, Y., Feng, Z. D., Ge, S. K., & Nguyen, C. (2015). Increasing cervical cancer screening among Vietnamese Americans: a community-based intervention trial. *Journal of Health Care for the Poor Underserved, 26*(2 Suppl), 3 –52. https://doi.org/10.1353/hpu.2015.0064

Mao, W. Y., Li, J., Xu, L., & Chi, I. (2020). Acculturation and health behaviours among older Chinese immigrants in the United States: A qualitative descriptive study. *Nursing Health Science, 22*(3), 714–722. https://doi.org/10.1111/nhs.12718

Maroof, D.A. (2012). Binary logistic regression. In D. A. Maroof (Eds), *Statistical methods in neuropsychology* (pp. 67–75). Springer. https://doi.org/10.1007/978-1-4614-3417-7_8

McAuliffe, M., & Triandafyllidou, A. (2021) *World migration report 2022*. International Organization for Migration. https://publications.iom.int/books/world-migration-report-2022 https://doi.org/10.1016/j.socscimed.2004.02.004

Mehta, S. (2012). *Health needs assessment of Asian people living in the Auckland region.* https://www.countiesmanukau.health.nz/assets/About-CMH/Performance-and- planning/health-status/79875e5978/2012-health-needs-of-asian-people.pdf

Methley, A. M., Campbell, S., Chew-Graham, C., McNall, R., & Cheraghi, S. (2014). PICO, PICOS and SPIDR: A comparison study of specificity and sensitivity in three search tools for qualitative systematic reviews. *BMC Health Services Research, 14*, Article 579. https://doi.org/10.1186/s12913-014-0579-0

Mercer, A., Lau, A., & Kennedy, C. (2018). *For weighting online opt-in samples, what matters most?*

https://www.pewresearch.org/methods/2018/01/26/for-weighting-online-opt-in-samples-what-matters-most/

Meulman, J. J. (1998). Optimal scaling methods for multivariate categorical data analysis. SPSS White Paper. http://bayes.acs.unt.edu:8083/BayesContent/class/Jon/SPSS_SC/Module9/M9_CatReg/SWPOPT.pdf

Meulman, J. J., & Heiser, W. J. (2012). IBM SPSS categories 21. https://www.sussex.ac.uk/its/pdfs/SPSS_Categories_21.pdf

Meyer, S. B., Luong, T. C., Mamerow, L., & Ward, P. R. (2013). Inequities in access to healthcare: Analysis of national survey data across six Asia-Pacific countries. *BMC Health Services Research, 13*, 238–260. https://doi.org/10.1186/1472-6963-13-238

Mielck, A., Kiess, R., von dem Knesebeck, O., Stirbu, I., & Kunst, A. E. (2009). Association between forgone care and household income among the elderly in five Western European countries-analyses based on survey data from the SHARE-study. *BMC Health Services Research, 23*(9), 52–59. https://doi.org/10.1186/1472-6963-9-52

Miltiades, H. B., & Wu, B. (2008). Factors affecting physician visits in Chinese and Chinese immigrant samples. *Social Science & Medicine, 66*(3), 704–714. http://doi.org/0.1016/j.socscimed.2007.10.016

Ministry of Health. (2012). *Health needs assessment of Asian people living in the Auckland region*. https://www.countiesmanukau.health.nz/assets/About-CMH/Performance-and-planning/health-status/79875e5978/2012-health-needs-of-asian-people.pdf

Ministry of Health. (2016a). *New Zealand health strategy: Future Direction*. https://www.health.govt.nz/system/files/documents/publications/new-zealand-health-strategy-futuredirection-2016-apr16.pdf

Ministry of Health. (2016b). *Use of health services by older people*. https://www.health.govt.nz/nz-health-statistics/health-statistics-and-data-sets/older-peoples-health-data-and-stats/use-health-services-older-people

Ministry of Health. (2017). *New Zealand health research strategy 2017-2027*.

https://www.health.govt.nz/system/files/documents/publications/nz-health-research-strategy-jun17.pdf

Ministry of Health. (2018a). *Health Practitioners Competence Assurance Act*. https://www.health.govt.nz/our-work/regulation-health-and-disability-system/health-practitioners-competence-assurance-act

Ministry of Health. (2018b). *Ministry of Health output plan 2018/19*. https://www.health.govt.nz/system/files/documents/publications/ministry_of_health_output_plan_2018_19.pdf

Ministry of Health. (2020). *COVID-19 – current cases*. https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-current-situation/covid-19-current-cases#age

Ministry of Health. (2023). *Annual data explorer 2022/23: New Zealand Health Survey*. https://minhealthnz.shinyapps.io/nz-health-survey-2022-23-annual-data-explorer/

Ministry of Health (2024). *COVID-19 – current cases.* https://www.health.govt.nz/our-work/diseases-and-conditions/covid-19-novel-coronavirus/covid-19-current-situation/covid-19-current-cases#age

Moher, D., Liberati, A., Tetzlaff, J., Altman, D. G., & The PRISMA Group. (2009). Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *PLOS Medicine, 6*(7), Article e1000097. https://doi.org/10.1371/journal.pmed1000097

Montayre, J., Saravanakumar, P., Zhao, I., & Holroyd, E. (2021). Holding on and letting go: Views about filial piety among adult children living in New Zealand. *Journal of Clinical Nursing, 31*(19-20), 2797-2804. https://doi.org/10.1111/jocn.16098

Morgan, D. L. (2014). Pragmatism as a paradigm for mixed methods research. In D. L. Morgan (ed.), *Integrating qualitative and quantitative methods: A pragmatic approach* (pp. 25–44). SAGE Publication.

Morris, A. (2015). *A practical introduction to in-depth interviewing*. SAGE Publication.

Multiple Sclerosis Trust. (2022). *Care in the NHS*.

https://mstrust.org.uk/sites/default/files/care%20infographic2.jpg

Munn, Z., Peters, M.D.J., Stern, C., Tufanaru, C., McArthur, A., & Aromataris, E. (2018). Systematic review or scoping review? Guidance for authors when choosing between a systematic or scoping review approach. *BMC Medical Research Methodology,18*(1), 143. https://doi.org/10.1186/s12874-018-0611x

Nardi, P. M. (2018). *Doing survey research: A guide to quantitative methods* (4th ed.). Routledge.

National Bureau of Statistics of China. (2024). *China statistical yearbook.* https://www.stats.gov.cn/sj/ndsj/2024/indexeh.htm

Navarrete, M. L. V. (2009). Qualitative and quantitative methods in health research. *Intentional Journal of Integrated Care, 9*(5), Article e74. http://doi.org/10.5334/ijic.377

Neergaard, M. A., Oleson, F., Anderson, R., & Sondergaard, J. (2009). Qualitative description – The poor cousin of health research? *BMC Medical Research Methodology*, *9*(52), 1–5. https://doi.org/10.1186/1471-2288-9-52

Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods, 16*, 1–13. http://doi.org/10.1177/1609406917733847

Nyande, F. K., Ricks, E., Williams, M., & Jardien-Baboo, S. (2022). Socio-cultural barriers to the delivery and utilisation of child healthcare services in rural Ghana: A qualitative study. *BMC Health Services Research, 22*, 289–304, https://doi.org/10.1186/s12913-022-07660-9

Oke, J., & Heneghan, C. (2020). Global covid-19 case fatality rates. Centre for Evidence-Based Medicine. https://www.cebm.net/covid-19/global-covid-19-case-fatality-rates

Oxford Dictionaries. (2024). *Migration.* https://www.oxfordlearnersdictionaries.com/definition/english/migration

Palaganas, E. C., Caricativo, R. D., Sanchez, M. C., & Molintas, M. V. P. (2017). Reflexivity in qualitative research: A journey of learning. *The Qualitative Report, 22*(2), 426–438. http://nsuworks.nova.edu/tqr/vol22/iss2/5

Palinkas, L. A., Horwitz, S. M., Green, C. A., & Wisdom, J. P. (2015). Purposeful sampling for qualitative data collection and analysis in mixed method implementation research. *Administration and Policy in Mental Health and Mental Health Services Research, 42*(5), 533–544. http://doi.org/10.1007/s10488-013-0528-y

Pang, E. C., Jordan-Marsh, M., Silverstein, M., & Cody, M. (2003). Health-seeking behaviours of elderly Chinese Americans: Shifts in expectations. *Gerontologist, 43*(6), 864–874. http://doi.org/10.1093/geront/43.6.864

Parahoo, K. (2014). *Nursing research principles, process and issues* (3rd ed.). Palgrave Macmillan.

Park, H. J., Morgan, T., Wiles, J., & Gott, M. (2019). Lonely ageing in a foreign land: Social isolation and loneliness among older Asian migrants in New Zealand. *Health & Social Care in the Community, 27*(3), 740–747. https://doi.org/10.1111/hsc.12690

Patton, M. Q. (2015). *Qualitative research and evaluation methods* (4th ed.). SAGE Publications.

Pegasus Health. (2014). *New Zealand health care system*. https://www.pegasus.health.nz/wp-content/uploads/2018/03/NZ-Health-System-booklet-English.pdf

Perez, A. R. (2012). *Health and New Zealand health services: A Latin American perspective* [Master's thesis, Auckland University of Technology]. AUT Research Online https://openrepository.aut.ac.nz/server/api/core/bitstreams/f12732c3-a291-4277-8caa-ac88008462ac/content

Peters, G. J. Y (2014) The alpha and the omega of scale reliability and validity: Why and how to abandon Cronbach's alpha and the route towards more comprehensive assessment of scale quality. *European Health Psychologist, 16*(2), 56–69. https://doi.org/10.31234/osf.io/h47fv

Peters, M. D., Godfrey, C. M., Khalil, H., McInerney, P., Parker, D., & Soares, C. B. (2015). Guidance for conducting systematic scoping reviews. *JBI Evidence Implementation, 13*(3), 141–146. https://doi.org/10.1097/XEB.0000000000000050

Peters-Nehrenheim, V., Rommerskirch-Manietta, M., Purwins, D., Roes, M., & Tezcan-Güntekin, H. (2022). Care preferences of older migrants and minority ethnic groups with various care needs: a protocol for

a scoping review. *British Medical Journal, 12*(11), e061712. https://doi.org/10.1136/bmjopen-2022-061712

Phua, J., Wong, L., Ling, L., Egi, M., Lim, C., Divatia, J. V., Shrestha, B. R., Arabi, Y. M., Ng, J., Gomersall, C. D., Nishimura, M., Koh, Y., Du, B., & the Asian Critical Care Clinical Trials Group. (2020). Intensive care management of coronavirus disease 2019 (COVID-19): challenges and recommendations. *The Lancet Respiratory Medicine*. Advanced online publication. https://doi.org/10.1016/S2213-2600(20)30161-2

Polit, D. F., & Beck, C. T. (2014). *Essentials of nursing research: Appraising evidence for nursing practice* (8th ed.). Wolters Kluwer Health. https://www.google.co.nz/books/edition/Study_Guide_for_Essentials_of_Nursing_Re/vT8qAwAAQBAJ?hl=en&gbpv=1&dq=Essentials+of+nursing+research:+appraising+evidence+for+nursing+practice&printsec=frontcover

Portes, A., Fernandez-Kelly, P., & Light, D. (2012). Life on the edge: Immigrants confront the American health system. *Ethical & Racial Studies, 35*(1), 3–22. http://doi.org/10.1080/01419870.2011.594173

Rafighi, E., Poduval, S., Legido-Quigley, H., & Howard, N. (2016). National health service principles as experienced by vulnerable London migrants in "Austerity Britain": A qualitative study of rights, entitlements, and civil-society advocacy. *International Journal of Health Policy and Management, 5*(10), 589–597. https://doi.org/10.15171/ijhpm.2016.50

Rajgor, D. D., Lee, M. H., Archuleta, S., Bagdasarian, N., & Quek, S. C. (2020). The many estimates of the COVID-19 case fatality rate. *The Lancet Infectious Diseases*. Advanced online publication. https://doi.org/10.1016/S1473-3099(20)30244-9

Ritchie, N. A. (2003). Traces of the Past: Archaeological insights into the New Zealand Chinese experience in southern New Zealand. In M. Ip (Eds.), *Unfolding history, evolving history: The Chinese in New Zealand* (pp. 157). Auckland University Press.

Rodger, B. L. (2012). Audit trial. In L. M. Given (Ed.), *The SAGE Encyclopedia of Qualitative Research Method* (pp. 44). https://doi.org/10.4135/9781412963909

Rothbauer, P. M. (2012). Triangulation. In L. M. Given (Ed.), *The SAGE Encyclopedia of Qualitative Research Method* (pp. 893–894). https://doi.org/10.4135/9781412963909

Royal, K. D. (2019). Survey research methods: A guide for creating post-stratification weights to correct for sample bias. *Education in the Health Professions, 2*(1), 48–50. https://dx.doi.org/10.4103/EHP.EHP_8_19

Rubenstein, L. Z., Powers, C. M., & MacLean, C. H. (2001). Quality indicators for the management and prevention of falls and mobility problems in vulnerable elders. *Annals of Internal Medicine, 135*(8 Part 2), 686–693. http://doi.org/10.7326/0003-4819-135-8_part_2-200110161-00007.

Rural Health Information Hub. (2019). *Healthcare access in rural communities*. https://www.ruralhealthinfo.org/topics/healthcare-access

Ryan, D., Southwick, M., Teevale, T., & Kenealy, T. W. (2011). *Primary care for Pacific people: A Pacific and health systems view*. Pacific Perspectives. https://researchspace.auckland.ac.nz/bitstream/handle/2292/20841/3132%20Pacific%20Primary%20Care%20Literature%20Review%20FINAL.pdf;sequence=6

Sandelowski, M. (2000). What happened to qualitative description? *Research in Nursing & Health, 23*, 334–34. https://doi.org/10.1002/1098-240X(200008)23:4<334::AID-NUR9>3.0.CO;2-G

Sandelowski, M. (2010). What's in a name? Qualitative description revisited. *Research in Nursing & Health, 33*, 77–84. https://doi.org/10.1002/nur.20362

Savage, C., Dallas-Katoa, W., Leonard, J., Goldsmith, L., & Fraser, W. (2017). *Whānau ora navigators initial research for Te Pūtahitanga o Te Waipounamu*. Ihi Research. https://communityresearch.org.nz/wp-content/uploads/2020/11/6.-NavigatorReport.pdf

Saunders, M. N. K., Lewis, P., & Thornhill, A. (2019). *Research methods for business students* (8th ed.). Pearson.

Scragg, R. (2016). *Asian Health in Aotearoa in 2011-2013: Trends since 2002-2003 and 2006-2007*. https://www.ecald.com/assets/Resources/Assets/Asian-Health-Aotearoa-2011.pdf

Scheuren, F. (2011). Post-stratification. P. J. Lavrakas (Ed.), *Encyclopedia of survey research methods* (pp. 595–597). SAGE Publications. https://dx.doi.org/10.4135/9781412963947

Scheppers, E., van Dongen, E., Dekker, J., Geertzen, J., & Dekker, J. (2006). Potential barriers to the use of health services among ethnic minorities: A review. *Family Practice, 23*(3), 325–348. http://doi.org/10.1093/fampra/cmi113

Schoonenboom, J., & Johnson, R. B. (2017). How to construct a mixed methods research design. *Kölner Zeitschrift Fur Soziologie Und Sozialpsychologe, 69*(2), 107–131. https://doi.org/10.1007/s11577-017-0454-1

Schroyen, S., Marquet, M., Jerusalem, G., Dardenne, B., Van den Akker, M., Buntinx, F., Adam, S., & Missotten, P. (2017). The link between self-perceptions of ageing, cancer view and physical and mental health of older people with cancer: A cross-sectional study. *Journal of Geriatric Oncology, 8*(1), 64–68. https://doi.org/10.1016/j.jgo.2016.09.001

Separa, L. A. C. (2024). Cultural adaptation experiences of people in New Zealand. *Review of Communication, 24*(2), 97–113. https://doi.org/10.1080/15358593.2024.2313238

Shahid, M., Weiss, N. H., Stoner, G., & Dewsbury, B. (2021). Asian Americans' mental health help-seeking attitudes: The relative and unique roles of cultural values and ethnic identity. *Asian American Journal of Psychology, 12*(2), 138–146. https://doi.org/10.1037/aap0000230

Sheridan, N. F., Kenealy, T. W., Connolly, M. J., Mahony, F., Barber, P. A., Boyd, M. A., Carswell, P., Clinton, J., Devlin, G., Doughty, R., Dyall, L., Kerse, N., Kolbe, J., Lawrenson, R., & Moffitt, A. (2011). Health equity in the New Zealand health care system: a national survey. *International Journal Equity in Health, 10*(1), 45–58. https://doi.org/10.1186/1475-9276-10-45

Siddiqi, A., Zuberib, D., & Nguyena, Q. C. (2009). The role of health insurance in explaining immigrant versus non-immigrant disparities in access to health care: Comparing the United States to Canada. *Social Science & Medicine, 69*(10), 1452–1459. https://doi.org/10.1016/j.socscimed.2009.08.030

Smith, B. D., Smith, G. L., Hurria, A., Hortobagyi, G. N., & Buchholz, T. A. (2009). Future of cancer incidence in the United States: Burdens upon an ageing, changing nation. *Journal of Clinical Oncology, 27*(17), 2758–2765. https://doi.org/10.1200/JCO.2008.20.8983

Smith, C. S., & Hung, L. C. (2012). The influence of Eastern philosophy on elder care by Chinese Americans: Attitudes toward long-term care. *Journal of Transcultural Nursing, 23*(1), 100–105. https://doi.org/10.1177/1043659611423827

SoleimanvandiAzar, N., Mohaqeqi Kamal, S. H., Sajjadi, H., Ghaedamini Harouni, G., Karimi, S. E., Djalalinia, S., & Setareh Forouzan, A. (2020). Determinants of outpatient health service utilisation according to Andersen's behavioural model: A systematic scoping review. *Iranian Journal of Public Health, 45*(6), 405–424. https://doi.org/10.30476/ijms.2020.85028.1481

Spoonley, P., & Bedford, R. (2012). *Welcome to our world? Immigration and the reshaping of New Zealand*. Dunmore Publications.

Stanley, M. (2015). Qualitative description: A very good place to start. In S. Nayar & M. Stanley (Eds.), *Qualitative research methodologies for occupational science and therapy* (pp. 21–36). Routledge.

Statistics New Zealand (2017). *Population projections overview*. http://archive.stats.govt.nz/browse_for_stats/population/estimates_and_projections/projections-overview/subnat-pop-proj.aspx

Statistics New Zealand (2018). *2018 census population and dwelling counts amended.* https://www.stats.govt.nz/information-releases/2018-census-population-and-dwelling-counts

Steunenberg, B., van der Mast, R., Strijbos, M. J., Inouye, S. K., & Schuurmans, M. J. (2016). Feature Article: How trained volunteers can improve the quality of hospital care for older patients. A qualitative evaluation within the Hospital Elder Life Program (HELP). *Geriatric Nursing, 37*, 458–463. http://doi.org/10.1016/j.gerinurse.2016.06.014

Streiner, D. L. (2003). Starting at the beginning: an introduction to coefficient alpha and internal consistency. *Journal of Personality Assessment, 80*(1), 99–103.

https://doi.org/10.1207/S15327752JPA8001_18

Su, S. W., & Wang, D. (2019). Health-related quality of life and related factors among elderly persons under different aged care models in Guangzhou, China: A cross-sectional study. *Quality of Life Research, 28*, 1293–1303. https://doi.org/10.1007/s11136-019-02107-x

Subedi, M. (2023). Sampling and trustworthiness issues in qualitative research. *Dhaulagiri Journal of Sociology and Anthropology*, *17*, 61–64. https://doi.org/10.3126/dsaj.v17i01.61146

Syed, S. T., Gerber, B. S., & Sharp, L. K. (2013). Travelling towards disease: Transportation barriers to health care access. *Journal of Community Health, 38*(5), 976–993. https://doi.org/10.1007/s10900-013-9681-1

Tang, S., Browne, A. J., Mussell, B., Smye, V. L., & Rodney, P. (2015). 'Underclassism' and access to healthcare in urban centres. *Sociology of Health & Illness, 37*(5), 698–714. https://doi.org/10.1111/1467-9566.12236

Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioural sciences*. SAGE Publication.

Tolley, E. E., Ulin, P. R., Mack, N., Robinson, E. T., & Succop, S. M. (2016). *Qualitative methods in public health: A field guide for applied research* (2nd ed.). Wiley.

Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care, 19*(6), 349 –357. https://doi.org/10.1093/intqhc/mzm042

Tsang, S., Royse, C. F., & Terkawi, A. S. (2017). Guidelines for developing, translating, and validating a questionnaire in perioperative and pain medicine. *Saudi Journal of Anaesthesia, 11*(1), S80–S89. http://doi.org/10.4103/sja.SJA_203_17

Turney, S. (2022). *Pearson correlation coefficient (r) | guide & examples*. Scribbr. https://www.scribbr.com/statistics/pearson-correlation-coefficient

Tyupa, S. (2011). A theoretical framework for back-translation as a quality assessment tool. *New Voices in Translation Studies, 7*, 35–46.

https://core.ac.uk/download/pdf/53121361.pdf

United Nations Population Fund. (n.d.). *Ageing*. https://www.unfpa.org/ageing

Vaismoradi, M., Jones, J., Turunen, H., & Snelgrove, S. (2016). Theme development in qualitative content analysis and thematic analysis. *Journal of Nursing Education and Practice, 6*(5), 100–110. http://doi.org/10.5430/jnep.v6n5p100

Van Belle, G., Fisher, D., Heagerty, P. J., & Lumley, T. (2004). *Biostatistics: A methodology for the health sciences* (2nd. ed). Wiley-Interscience. https://rss.onlinelibrary.wiley.com/

van Manen, M. (2016). *Researching the lived experience: Human science for an action sensitive pedagogy* (2nd ed.). Routledge. https://doi.org/10.4324/9781315421056

Vaughn, L. M., Jacquez, F., & Baker, R. (2009). Cultural health attribution, belief, and practices: Effects on healthcare and medical education. *The Open Medical Education Journal, 2*, 64–94. https://benthamopen.com/contents/pdf/TOMEDEDUJ/TOMEDEDUJ-2-64.pdf

Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *MIS Quarterly, 37*(1), 21–54. http://doi.org/10.25300/MISQ/2013/37.1.02

Vigezzi, G.P., Bertuccio, P., Amerio, A., Bosetti, C., Gori, D., Cavalieri d'Oro, L., Iacoviello, L., Stuckler, D., Zucchi, A., Gallus, S., Odone, A., & Lost in Lombardia Project Investigators. (2022). Older adults' access to care during the COVID-19 pandemic: Results from the lockdown and lifestyles (LOST) in Lombardia project. *International Journal of Environmental Research and Public Health, 19*(18), 11271. https://doi.org/10.3390/ijerph191811271

von Elm, E., Altman, D. G., Egger, M., Pocock, S. J., Gøtzsche, P. C., Vandenbroucke, J. P., & STROBE Initiative. (2014). The strengthening the reporting of observational studies in epidemiology statement: Guidelines for reporting observational studies. *International Journal of Survey, 12*(12), 1495–1499. https://doi.org/10.1016/j.ijsu.2014.07.013

Wang, L., Rosenberg, M., & Lo, L. (2008). Ethnicity and utilisation of family physicians: A case study of Mainland Chinese immigrants in Toronto, Canada. *Social Science & Medicine, 67*(9), 1410–1422. http://doi.org/10.1016/j.socscimed.2008.06.012

Wagner, W. E., & Gillespie, B. J. (2019). Data frequencies and distributions. In W. E. Wagner & B. J. Gillespie (Eds.), *Using and interpreting statistics in the social, behavioural, and health sciences* (pp. 37–58). SAGE Publications. https://doi.org/10.4135/9781071814284

Whitehead, D., Ferguson, C., LoBiondo-Wood, G., & Haber, J. (2016). *Nursing and midwifery research: Methods and appraisal for evidence-based practice* (6th ed.). Elsevier.

Wiki, J., Marek, L., Hobbs, M., Kingham, S., & Campbell, M. (2021). Understanding vulnerability to COVID-19 in New Zealand: A nationwide cross-sectional study. *Journal of the Royal Society of New Zealand 51*(sup1), S179–S196. https://doi.org/10.1080/03036758.2021.1900294

Williamson, G. R. (2005). Illustrating triangulation in mixed-methods nursing research. *Nurse Research, 12*(4), 7–18. http://doi.org/10.7748/nr2005.04.12.4.7.c5955.

Woltman, K. J., &. Newbold, K. B. (2007). Immigrant women and cervical cancer screening uptake. *Canadian Journal of Public Health, 98*(6), 470–475. https://pdfs.semanticscholar.org/c7a1/d09102450d017a002888e2b4cfcba8370dce.pdf

Wong, A. (2015). *Challenges for Asian health and Asian health promotion in New Zealand*. https://www.ecald.com/assets/Resources/Assets/Challenges-for-Asian-health.pdf

Wong, K. L., Ong, S. F., & Kuek, T. Y. (2012). Constructing a survey questionnaire to collect data on service quality of business academics. *European Journal of Social Sciences, 29*(2), 209–221. http://eprints.utar.edu.my/860/1/6343.pdf

World Health Organisation. (2007). Everybody business*: Strengthening health systems to improve health outcomes*: *WHO's framework for action.* https://www.who.int/healthsystems/strategy/everybodys_business.pdf

World Health Organisation. (2017). *Integrated care for older people – guidelines on community-level interventions to manage declines in intrinsic capacity*. https://apps.who.int/iris/bitstream/handle/10665/258981/9789241550109-eng.pdf?sequence=1&isAllowed=y

World Health Organisation. (2018). *Aging and health*. https://www.who.int/news-room/fact-sheets/detail/ageing-and-health

World Health Organisation. (2019). *Primary health care in China*. https://www.who.int/china/health-topics/primary-health-care

World Health Organisation. (2020). *Coronavirus disease 2019 (COVID-19) situation report – 102.* https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200501-covid-19-sitrep.pdf?sfvrsn=742f4a18_2

World Health Organisation. (2024a). *Ageing and health in China.* https://www.who.int/china/health-topics/ageing

World Health Organisation. (2024b). *Number of COVID-19 cases reported to WHO.* https://data.who.int/dashboards/covid19/cases

Wright, R. E. (1995). Logistic regression. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics* (pp. 217–244). American Psychological Association. https://www.researchgate.net/publication/261028034_Reading_and_Understanding_Multivariate_Statistics

Wright-St Clair, V. A., Nayar, N., Kim, H., Wang, S. M., Sodhi, S. K., Chung, A., Suchdev, J., & Hu, C. B. (2018) Late-life Asian immigrants managing wellness through contributing to socially embedded networks. *Journal of Occupational Science, 25*(1), 51–64. https://doi.org/10.1080/14427591.2017.1370607

Wu, Z., & McGoogan, J. M. (2020). Characteristics of and important lessons from the coronavirus disease 2019 (COVID-19) outbreak in China. Summary of a report of 72 314 cases from the Chinese Centre for Disease Control and Prevention. *The Journal of the American Medical Association, 323*(13), 1239–1243. http://doi.org/10.1001/jama.2020.2648

Wu, Z., Penning, M. P., & Schimmele, C. M. (2005). Immigrant status and unmet health care needs. *Canadian Journal of Public Health, 96*(5), 369–373. https://doi.org/10.1007/BF03404035

Wurm, S., & Benyamini, Y. (2014). Optimism buffers the detrimental effect of negative self-perceptions of ageing on physical and mental health. *Psychology & Health, 29*(7), 832–848. https://doi.org/10.1080/08870446.2014.891737

Yang, N. P., Lee, Y. H., Chung, C. Y., Hsu, J. C., Yu, I. L., Chang, N. T., & Chan, C. L. (2013). Comparisons of medical utilisations and categorical diagnoses of emergency visits between the elderly with catastrophic illness certificates and those without. *BMC Health Services Research, 13*(1), 152. https://doi.org/10.1186/1472-6963-13-152

Yang, Y. M. (2011). Post-survey adjustments. In P. J. Lavrakas (Ed.), Encyclopedia of survey research methods (pp. 598–592). SAGE Publications. https://dx.doi.org/10.4135/9781412963947

Zeng, Y., Feng, Q., Hesketh, T., Christensen, K., Vaupel, J. W. (2017). Survival, disabilities in activities of daily living, and physical and cognitive functioning among the oldest-old in China: A cohort study. *Lancet, 389 (10079*), 1619–1629. https://doi.org/10.1016/S0140-6736(17)30548-2

Zhang, W. (2023). *Hospitals and healthcare facilities in China - statistics and facts. Statista.* https://www.statista.com/topics/10723/hospitals-and-healthcare-facilities-in-china/#topicOverview

Zhang, X. X., Zimmerman, A., Zhang, Y. Y., Ogbuoji, O., & Tang, S. L. (2024). Rapid growth of private hospitals in China: Emerging challenges and opportunities to health sector management. *The Lancet Regional Health - Western Pacific, 44*, 100991. https://doi.org/10. 1016/j.lanwpc.2023.100991

Zhao, X., Xiao, J., Chen, H., Lin, K., Li, X., Zeng, Z., Huang, S., Xie, Z., Du, J. (2022). Patient preferences and attitudes towards first choice medical services in Shenzhen, China: A cross-sectional study. *British Medical Journal,12*(5), e057280. https://doi.org/10.1136/bmjopen-2021-057280

Zhou, L. F. (2009). *Health Needs Assessment for Asian People in Waitemata*. Waitemata District Health Board. https://www.waitematadhb.govt.nz/assets/Documents/health-needs-assessments/AsianHNA270209.pdf

APPENDICES

Appendix A1: Ethical Approval for Phase One of the Study

Auckland University of Technology Ethics Committee (AUTEC)

24 August 2020
Priya Saravana-Kumar
Faculty of Health and Environmental Sciences

Dear Priya

Re Ethics Application: **20/234 Understanding recently arrived Chinese late-life migrants' experiences of healthcare access and utilisation in Aotearoa New Zealand during and beyond the COVID-19 pandemic: a mixed-methods study**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).
Your ethics application has been approved for three years until 24 August 2023.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.

AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries, please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)
The AUTEC Secretariat
Auckland University of Technology Ethics Committee
Cc: zx_sherry@hotmail.com; Eleanor Holroyd

Appendix A2: Ethical Approval for Phase Two of the Study

Auckland University of Technology Ethics Committee (AUTEC)

7 December 2021

Priya Saravana-Kumar

Faculty of Health and Environmental Sciences

Dear Priya

Re Ethics Application: **20/234 Understanding recently arrived Chinese late-life migrants' experiences of healthcare access and utilisation in Aotearoa New Zealand during and beyond the COVID-19 pandemic: a mixed-methods study**

Thank you for providing evidence as requested, which satisfies the points raised by the Auckland University of Technology Ethics Committee (AUTEC).

Your ethics application has been approved in stages (online survey) for three years until 7 December 2024.

Standard Conditions of Approval

1. The research is to be undertaken in accordance with the Auckland University of Technology Code of Conduct for Research and as approved by AUTEC in this application.
2. A progress report is due annually on the anniversary of the approval date, using the EA2 form.
3. A final report is due at the expiration of the approval period, or, upon completion of project, using the EA3 form.
4. Any amendments to the project must be approved by AUTEC prior to being implemented. Amendments can be requested using the EA2 form.
5. Any serious or unexpected adverse events must be reported to AUTEC Secretariat as a matter of priority.
6. Any unforeseen events that might affect continued ethical acceptability of the project should also be reported to the AUTEC Secretariat as a matter of priority.

7. It is your responsibility to ensure that the spelling and grammar of documents being provided to participants or external organisations is of a high standard and that all the dates on the documents are updated.
8. AUTEC grants ethical approval only. You are responsible for obtaining management approval for access for your research from any institution or organisation at which your research is being conducted and you need to meet all ethical, legal, public health, and locality obligations or requirements for the jurisdictions in which the research is being undertaken.

Please quote the application number and title on all future correspondence related to this project.

For any enquiries, please contact ethics@aut.ac.nz. The forms mentioned above are available online through http://www.aut.ac.nz/research/researchethics

(This is a computer-generated letter for which no signature is required)
The AUTEC Secretariat
Auckland University of Technology Ethics Committee
Cc: zx_sherry@hotmail.com; Eleanor Holroyd

Appendix B1: Smi-structured Interview Guide

Location & time

The face-to-face/online/telephone interviews take place at the time and place that suit participants' needs.

Gift

A $20 gift card is gifted to each participant.

Interview protocol

- **Welcome and tanks for attendance** (2 minutes)

- **Introduction** (3 minutes)

  Brief introduce myself (researcher/interviewer) and the research purpose. Acknowledge participants' time and efforts in taking part in this study and interview. Inform the participant of his/her role and rights in the research. The Information Sheet and Consent Form will be provided. Written consent must be obtained before the interview proceed is to question. Ask the participant to fill the participants' socio-demographic characteristics information sheet to collect his/her brief contextual information.

- **Questions** (1-1.5 hours) – indicative interview questions including:

  1) Please describe your experiences of accessing health services in NZ?

     a. If you have accessed and used healthcare services in NZ, what healthcare services have you accessed and used since you arrived in NZ?

     b. If not, can you tell me why?

  2) Have you used or thought to use any COVID-19 related services in NZ during the pandemic? If yes, what types of services? Can you please describe your experiences of accessing and using these services? If no, why not?

  3) What have you found to help access health care services in NZ, in general, and the COVID-19 pandemic circumstances?

  4) What has been not-so-helpful or challenge for you when accessing health care services in NZ, in general, and the COVID-19 pandemic circumstances?

5) What types of support do you receive (i.e., physical, emotional, and financial etc.)? Where and how do you seek for these supports? If not, why?

6) What are your understandings/beliefs in the health system, health services, traditional Chinese medicine, and COVID-19 related support services?

7) What advice do you have for improving the health services using in NZ, in general circumstances and future pandemics?

8) What else would you like to share with me about using health services in NZ, in general circumstances and future pandemics?

- **Conclusions and thank you** (5 minutes)

  Thank the participant for his/her time and help with the interview and research. Ask them to complete the Socioeconomic Characteristics Information Sheet. Advise participants of how his/her responses are processed. Ensure the participant has research contact details. Finally, ask the participant if he/she has any questions/concerns.

Approved by the Auckland University of Technology Ethics Committee on 24-08-2020
AUTEC Reference number 20/234

Appendix B2-1: Semi-structured Interview Participant Information Sheet (English Version)

Date Information Sheet Produced: 20-07-2020

Project Title

Understanding recently arrived Chinese late-life migrants' experiences of healthcare access and utilisation in Aotearoa New Zealand during and beyond the COVID-19 pandemic: a mixed-methods study.

An invitation

My name is Sherry (Xi) Zhu, and I am a Mandarin-speaking student completing my Ph.D. of Health at Auckland University of Technology. I am interested in learning more about recently arrived Chinese late-life migrants' healthcare access and use in NZ in general circumstances and during the COVID-19 crisis, and providing recommendations on the improvement of health services utilisation. I invite you to consider volunteering for the interview stage of this research. The interview will involve me asking questions about your experiences when accessing health services in New Zealand, in general and COVID-19 pandemic circumstances. No health information will be sought. Your participation in this research is voluntary, and you can withdraw at any time for any reason up to one month after the interview date. You will not be disadvantaged in any way if you do not choose to participate in this research.

This study is being conducted as part of my PhD thesis. The brief version of the study could present at a relevant conference (i.e. NZ Nursing conference) and submit for publication to appropriation academic health journals (i.e. Qualitative Health Research). The findings of the study could also introduce to the Chinese community at community group meetings and submit for publication to organisations' newsletters (i.e. TANI).

Taking part in this study is voluntary (your own choice). Please take the time to read this Participant Information Sheet and the Informed Consent Form, and decide whether to participate in this study. Please feel free to discuss any of your concerns about the project with the researcher.

What is the purpose of this research?

The core purpose of the study is to investigate

- How do recent arrival Chinese late-life migrants' access and use healthcare service in NZ, in general, and COVID-19 pandemic circumstances;

- What elements affect health care utilisation for this population, in general, and COVID-19 pandemic circumstances;
- What could do to enhance health service utilisation, in general circumstances and future pandemics; and
- The findings of this research may use for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?

You are invited to participate in this research if you are

- People who identify themselves as Chinese.
- 65 years of age and over.
- All genders.
- Mandarin speakers.
- Currently holding permanent residency or NZ citizenship.
- Have arrived in NZ less than ten years ago from the date of the interview.
- Reside within the Auckland region.

How do I agree to participate in this research?

Contact me, Sherry Zhu, if you are interested in participating in this study. My contact details are provided below. I will invite you to sign the consent form before the interview begins.

What will happen in this research?

The data collecting period of phase one of this research involves me interviewing you and up to 19 other Chinese late-life migrants. I will contact you to set a time for your interview if you agree to participate in the study. The interview will focus on your own experiences accessing healthcare services in New Zealand, in the face of general, and COVID-19 pandemic environments. No health information will be sought.

The interview will be held online, or through telephone. The face-to-face interview may be arranged in your home, once the state of Alert reduces to level 1 or remove altogether. You can choose the interview method that suits your needs. You are invited to bring a support person to the interview, if needed. I will audio-record the interviews with a digital device and take notes to help me remember what happened. I will also send you a summary of the experiences that you told me to check the accuracy of the transcript.

What are the discomforts and risks?

You might have emotional disturbance when you recall experiences during the interview. I hope the discomforts and risks caused to you will be minimal since the interview will be a form that is similar to a daily conversation and causes little pressure.

How will these discomforts and risks be alleviated?

You are encouraged to stop the interview process at any time and to resume it when you are ready. You can refuse to answer questions that you find too personal. I will use a fictitious name for you in the study, so your personal information will be kept private and confidential. If you feel any discomfort or risk, you can withdraw from the research up to one month after your interview date. You will not be disadvantaged in any way if you do not choose to participate in this research. Once you withdraw from the study, you will be offered the choice between having any data that is identifiable as belonging to you removed or allowing it to continue to be used. However, the removal of your data may not be possible if the data has been integrated into the research.

If you wish, free counselling sessions can be arranged through Healthline, Health Point, and Asian Family Service. The Mandarin speaking staffs in these counselling services are able to provide a free counselling service to Chinese late-life adults. More information about counsellors and the option of telephone/online counselling that is provided by these counselling services can be found here:

Healthline

FREEPHONE: 0800 611 116

Website: www.healthpoint.co.nz

Health Point

FREEPHONE: 0800 56 76 666

Website: www.cmh.org.nz/vagus-centre.aspx

Asian Family Service

FREEPHONE: 0800 862 342

Website: https://www.asianfamilyservices.nz

What are the benefits?

You may benefit from thinking and talking about your experiences of accessing health and support services. The information you obtained from this study might help you experience fewer barriers to

accessing health services in the future. Moreover, you will be provided with a $20 gift card in exchange for your time. In addition, your contribution may impact other Chinese late-life migrants in the future. The wider community may benefit as the researcher aims to improve the utilisation of health services in New Zealand.

As a researcher, I can also benefit from this research project. I can have a deeper understanding of the field, improve my expertise during the research, and complete my Ph.D. qualification.

How will my privacy be protected?

I will assign a code name for you, and only my supervisors and I will know your real identity. The research results may be published as a doctoral thesis, journal articles, or other academic publications. However, I will not use identifying details in my study or presentation or publication. The use, storage, and destruction of data collected from you will fully comply with the AUT Ethics Committee protocol.

What are the costs of participating in this research?

There will be no direct costs to you during the research. It will take up to 120 minutes of your time, which includes up to 90 minutes for your interview and 30 minutes to read the interview transcripts.

What opportunity do I have to consider this invitation?

Time will be given in the information session prior to data collection for you to read the information sheet and consent form. You can ask any questions regarding the study that may help your decision as to whether or not to participate. I will be available to answer any questions you may have. You have up to one month to consider whether to attend the interview. I will contact you after this time and check if you are interested in participating. Participating in this study is voluntary.

Will I receive feedback on the results of this research?

Yes, you will receive a copy of the summary of this study in Chinese (1-2 pages) if you are interested.

What do I do if I have concerns about this research?

Any concerns regarding the nature of this project should notify in the first instance to the Project Supervisors:

Doctor Priya Saravanakumar:

Mail: Priya.Saravanakumar@aut.ac.nz

Phone: (09)9219999 ext. 8173

Professor Eleanor Holroyd:

Email: eleanor.holroyd@aut.ac.nz

Phone: (09)9219999 ext. 6745

Concerns regarding the conduct of the research should notify to the Executive Secretary of AUTEC, ethics@aut.ac.nz, 921 9999 ext. 6038.

Whom do I contact for further information about this research?

Please keep this Information Sheet and a copy of the Consent Form for your future reference. You are also able to contact the research team as follows:

RESEARCHER CONTACT DETAILS:

Sherry (Xi) Zhu:

Email: nwq5278@autuni.ac.nz

Mobile: 0212370431

PROJECT SUPERVISOR CONTACT DETAILS:

Doctor Priya Saravanakumar:

Email: priya.Saravanakumar@aut.ac.nz

Phone: (09)9219999 ext. 8173

Professor Eleanor Holroyd:

Email: eleanor.holroyd@aut.ac.nz

Phone: (09)9219999 ext. 6745

Approved by the Auckland University of Technology Ethics Committee on 24-08-2020
AUTEC Reference number 20/234

Appendix B2-2: Semi-structured Interview Participant Information Sheet (Chinese Version)

受试者须知版本号: 2020-07-20

研究项目名称：了解在新型冠状肺炎(COVID-19)大流行期间以及流行前后，中国老年新移民在新西兰的医疗保健获取和利用的情况: 一项混合方法研究。

邀请函：

尊敬的受采访者：

我的名字是朱曦(Sherry)。我是一名就读于奥克兰理工大学的博士研究生。我希望您能考虑参加我的研究。我的这项研究旨在深入了解新近抵达新西兰的中国老年移民在新冠疫情期间以及疫情爆发前后的医疗保健获取和利用的情况。该项研究还将为改善新西兰医疗健康服务提供建议。在该研究的采访阶段，研究人员将只询问有关于您在新冠疫情期间以及疫情爆发前后在新西兰获得和使用健康卫生服务的经历, 并不涉及您的任何健康信息。您可以自主的选择是否参加这项研究。您有权拒绝参加本研究，也可以在参加后的一个月以内随时选择退出。拒绝参加或中途退出研究，都不会损害您应有的任何利益。

此项研究是我的博士论文的一部分。该研究将可能在相关的学术会议和社区会议上展示。研究成果也将可能在相关的学术杂志和期刊上发表。

参加这项研究完全是您自主的选择。请仔细阅读本知情同意书并慎重做出是否参加本项研究的决定。如果有看不明白的地方，您可以随时询问研究人员。

研究目的：

这项研究旨在调查：

- 新冠疫情期间以及疫情爆发前后，新近移民的中国老年人如何在新西兰获得和使用医疗服务；
- 新冠疫情期间以及疫情爆发前后，哪些因素会影响该人群使用新西兰的医疗保健服务；
- 在一般情况下以及未来的大流行中，可以采取哪些措施来提高卫生服务的利用率；
- 这项研究的结果可用于学术出版物和演讲。

参加条件：

- 华人/中国人；
- 65 岁及以上；
- 所有性别 (男, 女, 或 其他性别);
- 第一语言为普通话;
- 目前拥有在新西兰的永久居住权或新西兰公民身份；

- 在新西兰居住少于十年(从接受采访之日起)；
- 目前居住在奥克兰地区。

如何同意参加这项研究：

如果您对这项研究感兴趣，请与我(朱曦)联系。我的具体联系方式将附在须知后面。在正式采访前，您需要签署知情同意书。

研究过程：

在该项研究的第一阶段，我将采访您和其他 19 位志愿者。如果您同意参加此研究项目，我将与您联系并安排采访时间。在采访中，您将被问及有关您在新冠疫情期间以及疫情爆发前后获得医疗卫生服务的经历。我不会涉及您的任何健康信息。

采访方式包括网路连线采访，电话采访，或者在您家中进行面对面采访。如有需要您可以带一名支持者(家人/朋友)参加访谈。您可以选择适合您的采访方式。我将使用数字设备对采访经行录音。我也会做笔记来记录采访的过程中发生的事情。我还会在采访结束后邀请您对采访记录进行校对。

参加研究的风险与不适：

当您接受采访并叙述过往经历的时候，您可能会有情绪上的困扰。我将采用日常对话的方式来对您进行采访，以便将给您带来的可能的风险和不适降至最低。

如何缓解这些风险和不适：

您有权利随时暂停或终止采访。您有权拒绝回答您认为过于私人/敏感的问题。为了保护您的个人信息以及个人隐私，在此项研究中我将使用虚构的名字或者代号来称呼您。如果您感到任何风险或不适，您可以在采访完成后的一个月之内选择退出此项研究。拒绝参加研究不会损害您应有的任何利益。一旦退出此项研究, 您可以选择删除任何可识别数据，或者允许研究人员继续使用这些数据。但是需要注意的是，在您退出之前研究者对您的数据处理是合法的。您退出之前所收集的数据如果已经整合到研究项目中，在保护您隐私的前提下，仍可继续在本研究中使用。

您还可以选择通过 Healthline, Health Point 或 Asian Family Service 安排免费的心理咨询。这些咨询机构可以为华人朋友提供免费的普通话咨询服务。有关更多详细的咨询服务信息可以拨打免费电话或通过网站查询:

Healthline

免费电话: 0800 611 116

网站: www.healthpoint.co.nz

Health Point

免费电话: 0800 56 76 666

网站: www.cmh.org.nz/vagus-centre.aspx

Asian Family Service

免费电话: 0800 862 342

网站: https://www.asianfamilyservices.nz

参加研究的收益：

如果您同意参加本研究，您将有可能受益于研究人员讨论获得和使用医疗健康服务的经历。本项研究的成果，将能够帮助减少在获得使用医疗健康服务时遇到的障碍。如果参加采访，您还将获得一份$20 的礼品券。此外，您的参与也可以使得其他中国移民受益。您对改善新西兰医疗卫生系统使用的建议还将使得整个社区从中受益。

作为研究人员，我也可以从该研究项目中受益。我可以对该领域有更深入的了解，可以在研究过程中提高自己的专业知识。此项研究还将帮助我获得博士学位资格。

隐私及保密问题：

在研究期间您的隐私权会得到很好的保护。您的姓名、性别等个人信息将用代号或数字代替，并予以严格的保密，只有相关的研究人员和导师可以查阅这些信息。研究结果可能会在杂志或其他学术期刊上发表，但不会泄露您个人的任何可识别信息。所有数据的使用，存储和销毁将完全遵循奥克兰理工道德委员会的协议。

研究花费：

在您参加该项研究期间将不会产生任何直接费用。您最多需要花费 120 分钟的时间来参加整个采访阶段，其中接受采访的时间大约为 90 分钟，以及对采访记录进行校对大约为 30 分钟。

如何考虑此次邀请：

在收到受访者须知和知情同意书后，你将有充足的时间阅读这些信息。您可以提出有关于该项研究的任何疑问，我将随时回答您可能遇到的问题。您有一个月的时间考虑是否参加此项研究。在您收到知情同意书的一个月以后，我会通过电话与您联系一次，并确定您是否有意愿参加该研究。参加这项研究完全是您自主的选择。

有关这项研究结果的反馈：

如果您对这项研究的结果有兴趣，您将收到一份本研究摘要的中文副本（1-2 页）。

如何获得帮助：

如果您对本项目的研究性质有任何疑问，请联系本研究项目的指导老师:

Priya Saravanakumar 博士:

电子邮箱地址: Priya.Saravanakumar@aut.ac.nz,

电话: (09)9219999 ext. 8173

Eleanor Holroyd 教授:

电子邮箱地址: eleanor.holroyd@aut.ac.nz,

电话: (09)9219999 ext. 6745

如果您对本项目的研究行为有任何疑问，请联系奥克兰理工大学道德委员，电子邮箱：ethics@aut.ac.nz, 电话（09）921 9999 ext. 6038.

获取更多相关信息

请保留此信息表和同意书的副本，以备将来参考。 您可以随时了解本假按揭的相关信息资料和研究进展，如果您有于本研究相关的问题，请按照以下方式联系研究团队：

主要研究者联系方式:

朱曦 (Sherry Zhu):

电子邮箱地址： nwq5278@autuni.ac.nz

手机：0212370431

研究项目导师联系方式:

Priya Saravanakumar 博士:

电子邮箱地址： Priya.Saravanakumar@aut.ac.nz,

电话：（09）9219999 ext. 8173

Eleanor Holroyd 教授:

电子邮箱地址： eleanor.holroyd@aut.ac.nz,

电话：（09）9219999 ext. 6745

由奥克兰理工大学道德委员会批准，24-08-2020 AUTEC 参考编号 20/234

Appendix B3-1: Semi-structured Informed Consent Form (English Version)

Project title: ***Understanding recently arrived Chinese late-life migrants' experiences of healthcare access and utilisation in Aotearoa New Zealand during and beyond the COVID-19 pandemic: a mixed-methods study***

Project Supervisor: ***Doctor Priya Saravanakumar & Professor Eleanor Holroyd***
Researcher: ***Sherry (Xi) Zhu***

- ○ I have read and understood the information provided about this research project in the Information Sheet dated _____. The possible problems and solutions during the research process have been explained to me, and I have the opportunity to ask my own questions.
- ○ I understand that taking part in this study is voluntary (my choice) and that I may withdraw from the study up to one month after the interview date, without being disadvantaged in any way.
- ○ I understand that if I withdraw/partial withdraw from the study then I will be offered the choice between having any data that is identifiable as belonging to me removed or allowing it to continue to be used. However, if the data before my withdrawal has been integrated into the research, removal of my data may not be possible.
- ○ I understand that I may be asked questions including general personal and/or family information, experiences and opinions about accessing and using health services in NZ and that I have the opportunity to say no to this if so wished.
- ○ I understand that notes will be taken during the interviews and that they will also be audio-taped and transcribed.
- ○ I agree to take part in the interview stage of this research.
- ○ I wish to receive a summary of the research findings (please tick one):
  Yes ○ No ○

Participants signature :
Participants Name :
Participants Contact Details (if appropriates) :
Date :

Approved by the Auckland University of Technology Ethics Committee on 24-08-2020 AUTEC Reference number 20/234
Note: The Participant should retain a copy of this form.

Appendix B3-2: Semi-structured Informed Consent Form (Chinese Version)

知情同意书

研究项目名称: **在新型冠状肺炎(COVID-19)大流行期间以及流行前后，中国老年新移民在新西兰的医疗保健获取和利用的情况: 一项混合方法研究。**

研究项目导师: **Priya Saravanakumar 博士& Eleanor Holroyd 教授**

研究者: ***朱曦 (Sherry Zhu)***

同意声明:

- O 我确认已阅读并理解了日期为 …… 的此项研究的受访者须知。在研究过程中可能出现的问题及解决方法已经向我解释，并且我有机会提出自己的疑问。
- O 我已明确参加研究属于自愿行为，并且我可以在采访完成后的一个月以内随时退出研究。拒绝参加研究不会损害我应有的任何利益。
- O 我已得知如果我退出或部分退出本研究，我可以选择：删除任何有关于我的可识别数据/信息，或者允许继续使用部分数据/信息。 但是我已明确，一旦此研究完成了对数据的整合，我的数据/信息将不可能被从研究报告中删除。
- O 我已明确我有权利拒绝回答采访者提出的问题，包括有关于个人信息，家庭信息，以及在新西兰使用和使用卫生服务的经历/看法。
- O 我已明确采访过程将被记录，录音，和转录。
- O 我同意参加这项研究的面试阶段。
- O 我希望收到研究结果的摘要（请勾选一个）： 是 O 否 O

受访者签名:

受访者姓名:

参与者联系方式（如果可以）:

日期 :

由奥克兰理工大学道德委员会批准，24-08-2020 AUTEC 参考编号 20/234

备注: 如果您完全理解了这一研究项目的内容，并同意参加此项研究，您将签署此知情同意书，一式两份由研究者和受试者本人或受委托人各保留一份。

Appendix B4-1: Semi-structured Interview Participant Recruitment Advertisement (English Version)

RECRUITING PARTICIPANTS

Have you found it is difficult to access health services in NZ during the COVID-19 pandemic?

My name is Sherry (Xi) Zhu, and I am a Mandarin-speaking student completing my PhD of Health at Auckland University of Technology. I am interested in learning more about recently arrived older Chinese migrants' healthcare access and use in NZ in general circumstances and during the COVID-19 crisis.

I invite you to consider volunteering for this research. Your participation will help to improve of healthcare services access and utilization in NZ, especially during the future pandemic circumstances. I will contact you to set a time for your interview if you agree to participate in the study. The interview will focus on your own experiences accessing healthcare services in NZ, during and beyond the pandemic. No health information will be sought. I promise that all participants' privacy and identifiable information will be protected. The interview will be held online, or through telephone, or face-to-face in your home. You can choose the method that suits your needs. You are allowed to bring a support person to the interview.

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UNIVERSITY
AUCKLAND, NEW ZEALAND

You are invited to participate in this study if you are:

- People who identify themselves as Chinese.
- 65 years of age and over.
- All genders.
- Mandarin speakers.
- Currently holding permanent residency or NZ citizenship.
- Have arrived in NZ less than ten years ago.
- Reside within the Auckland region.

If you are interested in participating in this research, please contact Sherry Zhu:

nwq5278@autuni.ac.nz

021-2370431

We chat:

Approved by the Auckland University of Technology Ethics Committee on 24-08-2020 AUTEC Reference number 20/234

Appendix B4-2: Semi-structured Interview Participant Recruitment Advertisement (Chinese Version)

招募志愿者

在新冠疫情爆发期间，您是否发现使用医疗健康服务困难重重?

AUT 在读博士研究生 Sherry Zhu 正在开展一项深入了解新近抵达新西兰的中国老年移民在新冠疫情期间以及疫情爆发前后的医疗保健获取和利用的情况的研究。

您的参与将会为改善新西兰医疗健康服务，特别是提高新西兰医疗健康服务机构应对未来疾病大流行做出积极的贡献。我们热诚欢迎您的报名参与！一旦您同意参加研究,我将与您联系并安排采访。采访将着重于您在新冠疫情期间以及疫情爆发前后的医疗保健获取和利用的经历，并不涉及您的任何健康信息。我们承诺对您的个人信息严格保密。您可以选择适合您的采访方式，包括在线采访、电话采访、或在家访问。您可以带家人/朋友参加采访。

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UNIVERSITY
AUCKLAND, NEW ZEALAND

招募对象:

- 所有性别(男，女，或其他性别)的65岁及以上的华人;
- 第一语言为普通话;
- 拥有在新西兰的永久居住权或新西兰公民身份;
- 在新西兰居住少于十年;
- 居住在奥克兰地区。

如果您有兴趣，请联系 Sherry Zhu (朱曦):

nwq5278@autuni.ac.nz

021-2370431

微信:

由奥克兰理工大学道德委员会批准，24-08-2020 AUTEC 参考编号 20/234

Appendix B5-1: Semi-structured Interviewee's Socio-demographic Characteristics Information Sheet (English Version)

Thank you for your participation in this study.

Please could you take a few minutes to answer the following questions before the interview process:

1. **Date of Birth** ……

2. **Gender** Male ☐ Female☐ Gender Diverse, please state ……

3. **Marital status** Single ☐ Partnered ☐ Married ☐
Separate ☐ Divorced ☐ Widowed ☐

4. **Time of residence in NZ** ……

5. **First language** ……

6. **Other language** ……

7. **Language ability (English)** Excellent ☐ Good ☐ Fair ☐ Poor ☐

8. **Employment status** Full-time ☐ Part-time ☐ Retired ☐
Unemployed ☐
Other ……

9. **Health insurance** Private ☐ Medicare ☐ None ☐

10. **Family support** ……

11. **Highest Completed Qualification** …….

Approved by the Auckland University of Technology Ethics Committee on 24-08-2020 AUTEC Reference number 20/234

Appendix B5-2: Semi-structured Interviewee's Socio-demographic Characteristics Information Sheet (Chinese Version)

感谢您参与这项研究。
在开始访问之前，请花几分钟回答以下问题:

1. **出生日期**	……			
2. **性别**	男 ☐	女 ☐		
	多样性别, 请注明……			
3. **婚姻状况**	单身 ☐	有伴侣 ☐	已婚 ☐	
	分居☐	离婚 ☐	丧偶 ☐	
4. **在新西兰居住的时间**	……			
5. **母语**	……			
6. **其它语言能力**	……			
7. **英语语言能力**	优秀 ☐	良好 ☐	中等 ☐	较差 ☐
8. **就业状况**	全职 ☐	兼职 ☐	退休 ☐	待业 ☐
	其它, 请注明 ……			
9. **健康保险**	个人健康保险 ☐		医疗保险 ☐	无 ☐
10. **家庭支持状况**	……			
11. **最高学历**	……			

由奥克兰理工大学道德委员会批准，24-08-2020 AUTEC 参考编号 20/234

Appendix C1: Health Services Access and Utilisation Experience Pilot Survey (English Version)

Participant Information Sheet

My name is Sherry (Xi) Zhu, and I am a Mandarin-speaking student completing my PhD of Health at Auckland University of Technology. I am currently conducting research to learn more on recently arrived Chinese late-life immigrants' healthcare access and use in Aotearoa New Zealand (NZ) during and beyond the COVID-19 crisis, and providing recommendations on the improvement of health services utilisation. I invite you to take part the survey stage of this research. Your participation in this research is voluntary (your own choice). You will not be disadvantaged in any way if you do not choose to participate in this research.

This survey will be conducted as part of my PhD research. The survey results would be presented at a relevant conference (i.e., Migration, health and wellbeing conference) and submitted for publication to appropriation academic health journals (i.e., Quantitative Health Research). The results will also be shared with the Chinese community and made available for publication to organisations' newsletters (i.e., The Asian Network Incorporated (TANI))"

Acknowledgements

I would like to thank the Health Surveys, Ministry of Health for affording me the permission to use the New Zealand Health Survey (Adult Questionnaire) to develop my pilot survey for my doctoral study.

Project Title

Understanding recently arrived Chinese late-life migrants' experiences of healthcare access and utilisation in Aotearoa New Zealand during and beyond the COVID-19 pandemic: a mixed-methods study.

The purposes of the survey stage of the research

- To explore the healthcare access and utilisation for recently arrived Chinese late-life migrants in Aotearoa NZ, in pre-pandemic and COVID-19 pandemic circumstances.
- To investigate the factors that affect their healthcare access and utilisation.
- To explore their views regarding the improvement of healthcare utilisation.
- To inform the recommendations for the design of a nationally administered survey

The findings of this research may use for academic publications and presentations.

How was I identified and why am I being invited to participate in this research?

You are invited to participate in this research if you are

- People who identify themselves as Chinese.
- 65 years of age and over.
- All genders.
- Have arrived in Aotearoa NZ less than ten years ago from the date of the survey.
- Reside in Aotearoa NZ.

How do I agree to participate in this research?

The online pilot survey will be open for all potential respondents from 07 December 2021 to 31 May 2022. Once you start to sit the questionnaire, it implies your consent of participating in the pilot survey.

What will happen in this research?

In phase two of this research, I will invite eligible Chinese late-life migrants to participate in an anonymous online survey. The survey includes multiple choice and short answer questions that focus on your own experiences of accessing healthcare services in Aotearoa NZ in the face of general and COVID-19 pandemic environments. No health information will be sought. The survey will be held online. It will take up to 40 minutes to complete. You can choose to answer the questions in your preferred language (Chinese simple, Chinese traditional, or English).

What are the discomforts and risks?

The pilot survey may cause minimal emotional discomforts and risks to you.

How will these discomforts and risks be alleviated?

The questionnaire will not ask any questions that relate to your health information. It only focuses on your experiences of accessing and using health services in Aotearoa NZ. You can refuse to answer questions that make you feel uncomfortable. You are also encouraged to take a break at any time you need and to resume the questionnaire when you are ready. You also have rights to refuse

to attend the survey. You will not be disadvantaged in any way if you do not choose to participate in this research.

If you wish, free counselling sessions can be arranged through Healthline, Health Point, and Asian Family Service. The Mandarin speaking staffs in these counselling services are able to provide a free counselling service to Chinese late-life adults. More information about counsellors and the option of telephone/online counselling that is provided by these counselling services can be found here:

Healthline
FREEPHONE: 0800 611 116
Website: www.healthpoint.co.nz

Health Point
FREEPHONE: 0800 56 76 666
Website: www.cmh.org.nz/vagus-centre.aspx

Asian Family Service
FREEPHONE: 0800 862 342
Website: https://www.asianfamilyservices.nz

What are the benefits?

You may benefit from reflecting about their experiences of accessing health and support services. The information you obtained from this study might help you experience fewer barriers to accessing health services in the future. As a token of appreciation of participating in the survey, you will receive a $20 gift voucher. In addition, your contribution may impact other Chinese late-life migrants in the future. The wider community may benefit as the researcher aims to improve the utilisation of health services in Aotearoa New Zealand.

As a researcher, I can also benefit from this research project. I can have a deeper understanding of the field, improve my expertise during the research, and complete my Ph.D. qualification.

How will my privacy be protected?

This pilot survey is an anonymous survey. That is, only the respondent knows that he or she participated in the survey, and the survey researcher cannot identify the participant. Thus, your personal information is highly unlikely to be identified as the study is written up. Although you will be asked to provide possible identifying characteristics on the "Prize Draw" page, this information only used for send the gift to you. I would like to reassure you that all possible identifying

information you provide on the "Prize Draw" page will not be used to write up the study. Moreover, the use, storage, and destruction of data collected from you will fully comply with the AUT Ethics Committee protocol.

What are the costs of participating in this research?

There will be no direct costs to you during the research. It will take up to 40 minutes of your time to complete the online questionnaire.

What opportunity do I have to consider this invitation?

The online survey will be open for all potential respondents from 07 December 2021 to 31 May 2022. You can consider whether and when to attend the survey during this period of time. Participating in this study is voluntary. If you have any concerns regarding the pilot survey that may help your decision as to whether or not to participate. I will be available to answer any questions you may have. My contact details are available below.

Will I receive feedback on the results of this research?

Yes, you will receive a research summary (1-2 page) in written Chinese (simplified/traditional characters) and/or English, if you are interested.

What do I do if I have concerns about this research?

Any concern regarding the pilot survey, please contact primary researcher.

Researcher Contact Details:

Sherry Zhu:

Email: nwq5278@autuni.ac.nz

Mobile phone: 0212370431

Any concerns regarding the nature of this project should notify in the first instance to the Project Supervisors:

Professor Eleanor Holroyd:

Email: eleanor.holroyd@aut.ac.nz

Phone: (09)9219999 ext. 6745

Doctor Priya Saravanakumar:

Email:Priya.Saravanakumar@aut.ac.nz or Padmapriya.Saravanakumar@uts.edu.au

Phone: (09)9219999 ext. 8173

Doctor Irene Zeng:

Email: irene.zeng@aut.ac.nz

Concerns regarding the conduct of the research should notify to the Executive Secretary of AUTEC, **ethics@aut.ac.nz, 921 9999 ext. 6038.**

Ngā Mihi Nui
Sherry Zhu (AUT PhD candidate)

Approved by the Auckland University of Technology Ethics Committee on 24/08/2020 AUTEC Reference number 20/234

Start of Block: Participants' Socio-demographic Characteristics Information

Q1 Age

- 65-74 (1)
- 75-84 (2)
- 85 and over (3)

Q2 Gender

- Male (1)
- Female (2)
- Another gender (specify) (3) _____

Q3 Country/region of birth

- China (1)
- Hong Kong (2)
- Taiwan (3)
- Other (specify) (4) _____

Q4 Civil status

- Single (1)
- Married/partnered (2)
- Separate/Divorced (3)
- Widowed (4)

Q5 In which year did you arrive to live in New Zealand?

- ○ 2012 (1)
- ○ 2013 (2)
- ○ 2014 (3)
- ○ 2015 (4)
- ○ 2016 (5)
- ○ 2017 (6)
- ○ 2018 (7)
- ○ 2019 (8)
- ○ 2020 (9)
- ○ 2021 (10)
- ○ Other (specify) (11) _____

Q6 Which immigration status do you hold?

- ○ Citizen (1)
- ○ Permanent resident visa (2)
- ○ Work visa (3)
- ○ Other (specify) (4) _____

Q7 Where do you live in New Zealand? (e.g., Auckland)

_____

Q8 Who are you living with in New Zealand? (Multiple responses possible)

- ☐ Alone (1)

- [ ] Partner (2)
- [ ] Sister/brother (3)
- [ ] Son/daughter (4)
- [ ] Son-in-law/daughter-in-law (5)
- [ ] Grandson/granddaughter (6)
- [ ] Other relatives (7)
- [ ] Unrelated (8)

Q9 What are all the ways you got income? (Multiple responses possible)

- [ ] Wages, salaries, commissions, etc., paid by your employer (1)
- [ ] Self-employment or business you own (2)
- [ ] Investment, e.g., interest, dividends, or rent (3)
- [ ] Government benefit, e.g., unemployment benefit, sickness benefit, etc. (4)
- [ ] No source of income (6)
- [ ] Other sources (specify) (7) _____

Q10 What is your highest completed qualification?

- ○ None (1)
- ○ Primary school graduate certificate (2)
- ○ Middle school graduate certificate (3)

○ High school graduate certificate (4)

○ College graduate certificate (5)

○ University degree (6)

○ Other (specify) (7) _____

Q11 What type of health or medical insurance scheme do you have?

○ None (1)

○ Comprehensive, covering day-to-day costs such as GP fees and pharmacy charges, as well as private hospital care (2)

○ Hospital only (3)

○ Other (specify) (4) _____

End of Block: Participants' Socio-demographic Characteristics Information

Start of Block: Questionnaire Part 1

Instruction: The following questions are about your experiences of accessing and using health care services in Aotearoa New Zealand (NZ), in the face of general and COVID-19 pandemic environments. All these questions are about use of health services in Aotearoa NZ, for your own health. By health, I mean any support you have accessed (like physical, mental, and emotional health) to maintain your wellbeing.

Further information about questionnaire:

- When you choose the option of "Other", please give a specific explanation.
- Not all questions may apply to your situation/experience.
- If this is the case, please select "Don't apply".
- If you do not know how to answer the question, please select "Don't know".
- You have the right to refuse to answer the question you do not want to answer. If this is the case, please select "Refuse to answer".

Part 1 Primary health care services

The primary healthcare relates to the professional healthcare provided in the community, usually from a general practitioner (GP), practice nurse, pharmacist, or other health professional working within a general practice (Ministry of

Health [MOH], 2020c). In Aotearoa NZ, these are services you can access directly, and do not need to be referred there by another health provider.

1. Primary health care services

The following set of questions are about the primary healthcare services, such as GP clinic or medical centre, you go to when you are feeling unwell or are injured during pre-pandemic and COVID-19 pandemic circumstances.

Q1.1 Since you first arrived in Aotearoa NZ, have you visit a primary health service when you are feeling unwell or are injured?

- ○ Yes (1)
- ○ No (2)
- ○ Don't know (3)
- ○ Refuse to answer (4)

Q1.2 What sort of primary health care services is this? (Multiple response possible)

- ☐ A GP clinic, medical centre or family practice (include GP clinics located within a hospital, and air force / army / navy GPs) (1)
- ☐ A clinic that is after-hours only – not an Emergency Department at a public hospital. (2)
- ☐ Other (Specify, e.g., prison GPs, company GPs or rest home GPs) (3) _____
- ☐ Don't apply (5)
- ☐ Don’t know (8)
- ☐ Refuse to answer (9)

Q1.3 Since you first arrived in Aotearoa NZ, has there been a time when you wanted to see a GP, nurse, or other health care worker, within the next 24 hours, but they were unable to see you? If so, why? If not, please select the option "Don't apply" (Multiple responses possible)

** If the reason that the person could not see the GP was because it was a weekend, the response should be coded as ‘another reason.’*

- [ ] There weren't any appointments (1)
- [ ] The time offered didn't suit me (2)
- [ ] The appointment was with a doctor I didn't want to see (3)
- [ ] I could have seen a nurse but I wanted to see a doctor (4)
- [ ] I could have seen a doctor via telehealth/video but I wanted to see he/she in person (5)
- [ ] The GP clinic/medical centre that I usually go to was closed during the lockdown (due to COVID-19 outbreak) (6)
- [ ] Another reason (Specify) (7) _____
- [ ] Don't apply (8)
- [ ] Don't know (9)
- [ ] Refuse to answer (10)

Q1.4 Are the current opening hours of the clinic or medical centre convenient to you?

- ○ Yes (1)
- ○ No (2)
- ○ Don't know (4)
- ○ Refuse to answer (5)

Q1.5 Which of the following additional opening hours would make it easier for you to see or speak to someone at the clinic or medical centre? Please say all that apply. (Multiple responses possible)

- [ ] Earlier in the morning on weekdays (e.g., before 8am) (1)
- [ ] Later in the evening on weekdays (e.g., after 5pm) (2)

- [ ] On a Saturday, or longer hours on a Saturday (3)
- [ ] On a Sunday (4)
- [ ] Others (Specify) (5) _____
- [ ] Don’t know (6)
- [ ] Refuse to answer (7)

Q1.6 When you tried to contact the clinic or medical centre about your own health, how did you do it? This includes contacting them to book an appointment, ask a medical question or request a repeat prescription. (Multiple responses possible)

- [ ] Over the phone (1)
- [ ] Email (2)
- [ ] In person (e.g. going into the medical centre) (3)
- [ ] TXT or SMS (4)
- [ ] Online service or patient portal (e.g. ManageMyHealth, Health 365) (5)
- [ ] Other (Specify) (6) _____
- [ ] Don’t apply (7)
- [ ] Don’t know (8)
- [ ] Refuse to answer (9)

Q1.7 How helpful have you found the receptionists at the clinic or medical centre?

- ○ Very helpful (1)

- Helpful (2)
- Neither helpful nor unhelpful (3)
- Unhelpful (4)
- Very unhelpful (5)
- Don’t apply (6)
- Don’t know (7)
- Refuse to answer (8)

Q1.8 Have staff at your usual medical centre given you enough information to help you manage your health concerns?

- If respondent has not had any health concerns or required any information, code as "Don't apply".

- Yes, definitely (1)
- Yes, to some extent (2)
- No, not at all (3)
- Don’t apply (6)
- Don’t know (7)
- Refuse to answer (8)

Q1.9 Overall, how satisfied are you with the care you got at the clinic or medical centre? This includes all staff, not just the GP.

- If you haven't visited any GP clinics or medical centres since you first arrived in Aotearoa NZ, please select the option "Don't apply"

- Very satisfied (1)
- Satisfied (2)

- ○ Neither satisfied nor dissatisfied (3)
- ○ Dissatisfied (4)
- ○ Very dissatisfied (5)
- ○ Don’t apply (6)
- ○ Don’t know (7)
- ○ Refuse to answer (8)

Q1.10 Does the COVID-19 pandemic prevented you from visiting primary health services (e.g. a GP clinic or medical centre) when you had a health problem?

- ○ Yes (Specify how) (1) _____
- ○ No (2)
- ○ Don’t know (3)
- ○ Refuse to answer (4)

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2. General practitioners

These next set of questions is about seeing or talking to general practitioners (GPs) or family doctors during pre-pandemic and COVID-19 pandemic in Aotearoa New Zealand. This can be at your usual medical centre or somewhere else.

Q2.1 Since you first arrived in Aotearoa NZ, have you seen a GP, or been visited by a GP, about your own health? By health, I mean your mental and emotional health as well as your physical health.

- ○ Yes (1)
- ○ No (2)
- ○ Don’t know (3)
- ○ Refuse to answer (4)

Q2.2 Thinking back to the last time you saw a GP about your own health, how long after your scheduled appointment time did you wait to be seen?

- ○ I didn’t have an appointment time (1)
- ○ I was seen at my appointment time (2)
- ○ 5 to 15 minutes (3)
- ○ 15 to 30 minutes (4)
- ○ more than 30 minutes (5)
- ○ Don’t apply (6)
- ○ Don’t know (7)
- ○ Refuse to answer (8)

Q2.3 How did you feel about how long you had to wait?

- ○ I didn’t mind the wait (1)
- ○ I had to wait (2)

- ○ Don’t know (3)
- ○ Refuse to answer (4)

Q2.4 Thinking back to the last time you saw a GP. How good was the doctor at explaining your health conditions and treatments in a way that you could understand?

- ○ Very good (1)
- ○ Good (2)
- ○ Neither good nor bad (3)
- ○ Poor (4)
- ○ Very poor (5)
- ○ Don’t apply (6)
- ○ Don’t know (7)
- ○ Refuse to answer (8)

Q2.5 Thinking back to the last time you saw a GP. How good was the doctor at involving you in decisions about your care, such as discussing different treatment options?

- ○ Very good (1)
- ○ Good (2)
- ○ Neither good nor bad (3)
- ○ Poor (4)
- ○ Very poor (5)
- ○ Don’t apply (6)
- ○ Don’t know (7)
- ○ Refuse to answer (8)

Q2.6 Thinking back to the last time you saw a GP. How good was the doctor at treating you with respect and dignity?

- ○ Very good (1)
- ○ Good (2)
- ○ Neither good nor bad (3)
- ○ Poor (4)
- ○ Very poor (5)
- ○ Don’t apply (6)
- ○ Don’t know (7)
- ○ Refuse to answer (8)

Q2.7 Did you have confidence and trust in the GP you saw?

- ○ Yes, definitely (1)
- ○ Yes, to some extent (2)
- ○ No, not at all (3)
- ○ Don’t apply (4)
- ○ Don’t know (5)
- ○ Refuse to answer (6)

Q2.8 Has there been any time when you need to see a GP about your own health, but didn’t get to see any doctor at all? If so, why? If not, please select the option "Don't apply".
(Multiple responses possible)

*Chinese-speaking GP means the GP who can speak Mandarin, Cantonese, and/or Hakka.

** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.

- [ ] Chinese-speaking GP was unavailable* (1)
- [ ] Services were expensive/ not affordable (2)
- [ ] Had no transport to get there (3)
- [ ] Couldn’t spare the time (4)
- [ ] Lack of support person** (include support person was difficult to take time off work) (5)
- [ ] Didn’t want to be a burden (6)
- [ ] Unfamiliar with the GP services in NZ (7)
- [ ] Couldn’t get an appointment soon enough/at a suitable time (8)
- [ ] It was after-hours (9)
- [ ] I could have seen a doctor via telehealth but I wanted to see he/she in person (10)
- [ ] Couldn’t get in touch with the doctor (11)
- [ ] The GP service in the area was closed during the lockdown (12)
- [ ] Other (specify) (13) _____
- [ ] Don’t apply (14)
- [ ] Don’t know (15)
- [ ] Refuse to answer (16)

Q2.9 When you were not able to see a GP, what did you do instead? (Multiple responses possible)

☐ Nothing (1)

☐ Went to see the GP at a later date (2)

☐ Went to an Emergency Department at public hospital (3)

☐ Went to an after-hours or Accident and Medical centre (4)

☐ Phoned an ambulance (5)

☐ Went to other/alternative medical services (e.g., Chinese Traditional Medicine, Chinese Acupuncture, Chinese Massage, etc.) (6)

☐ Phoned Healthline or another hotline for advice (7)

☐ Something else (specify) (8)

_____

☐ Don't apply (9)

☐ Don't know (10)

☐ Refuse to answer (11)

Q2.10 Does the COVID-19 pandemic prevented you from visiting or talking to a GP when you had a health problem?

○ Yes (specify) (1) _____

○ No (2)

○ Don't know (3)

○ Refuse to answer (4)

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3. Nurses at GP clinics and medical centres

The next set of questions is about your experiences of visit nurses who work at GP clinics and medical centres during pre-pandemic and COVID-19 pandemic in Aotearoa New Zealand. You may have seen them as part of a consultation with your GP or you may have had an appointment with a nurse without seeing a GP at the same time. Please do not include nurses who may have visited you at home or seen you in a hospital. Also, do not include midwives or dental nurses.

Q3.1 Since you first arrived in Aotearoa NZ, have you seen a nurse at a GP clinic or medical centre, about your own health? By health, I mean your mental and emotional health as well as your physical health.

- ○ Yes, I see a nurse as part of a GP consultation (This includes seeing the nurse before or after seeing the GP). (1)
- ○ Yes, I see a nurse without seeing a GP at the same visit. (2)
- ○ No (3)
- ○ Don't know (4)
- ○ Refuse to answer (5)

Q3.2 Overall, how satisfied are you with the care you got from a nurse at the PG clinic or medical centre?

- ○ Very satisfied (1)
- ○ Satisfied (2)
- ○ Neither satisfied nor dissatisfied (3)
- ○ Dissatisfied (4)
- ○ Very dissatisfied (5)
- ○ Don't apply (6)
- ○ Don't know (7)
- ○ Refuse to answer (8)

Q3.3 Does the COVID-19 pandemic prevented you from visiting or talking to a nurse at a GP clinic or medical centre?

○ Yes (specify) (1) _____

○ No (2)

○ Don’t know (3)

○ Refuse to answer (4)

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4. After-hours medical care

The next set of questions is about your experience of visiting after-hours medical care during pre-pandemic and COVID-19 pandemic in Aotearoa New Zealand. An after-hour medical care centre provides healthcare during evenings, weekends, or holidays when most GP clinics or medical centres are closed.

Q4.1 Since you first arrived in Aotearoa NZ, have you visit an after-hour medical centre when you had a health problem? Do not include visits to an emergency department at a public hospital.

○ Yes (1)

○ No (2)

○ Don’t know (3)

○ Refuse to answer (4)

Q4.2 When you needed support for a health problem outside regular office hours, what was the reason you did not visit an after-hour medical centre? (Multiple responses possible)

** Chinese-speaking caregiver means the caregiver who can speak Mandarin, Cantonese, and/or Hakka.*
*** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*

☐ Chinese-speaking caregiver was unavailable* (1)

☐ Services were expensive/ not affordable (2)

☐ Had no transport to get there (3)

☐ Couldn’t spare the time (4)

- [ ] Lack of support person** (include support person was difficult to take time off work) (5)
- [ ] Didn’t want to be a burden (6)
- [ ] Unfamiliar with the after-hour care services in NZ (7)
- [ ] The after-hour medical centre in the area was closed during the lockdown (due to COVID-19 outbreak) (8)
- [ ] Other (specify) (9) _____
- [ ] Don’t apply (10)
- [ ] Don’t know (11)
- [ ] Refuse to answer (12)

Q4.3 When you were not able to visit an after-hour medical centre, what did you do instead? (Multiple responses possible)

- [ ] Nothing (1)
- [ ] Went to an Emergency Department at public hospital (2)
- [ ] Phoned an ambulance (3)
- [ ] Phoned Healthline or another phone number for advice (4)
- [ ] Something else (specify) (5) _____
- [ ] Don’t apply (6)
- [ ] Don’t know (7)
- [ ] Refuse to answer (8)

Q4.4 Does the COVID-19 pandemic prevented you from visiting an after-hour medical centre when you had a health problem?

- ○ Yes (specify) (1) _____
- ○ No (2)
- ○ Don’t know (3)
- ○ Refuse to answer (4)

End of Block: Questionnaire Part 1

Start of Block: Questionnaire Part 2

Part 2 Secondary & tertiary health care services
According to MOH (2020b), secondary and tertiary healthcare service refers to more specialist level care, and is often based in a hospital setting. In Aotearoa NZ, these services include public hospital services, private hospital health services, an Emergency Department (ED) at a public hospital, and medical specialists.

5. Public hospital
The next set of questions is about your experiences of accessing and using public hospital services during pre-pandemic and COVID-19 pandemic in Aotearoa New Zealand.

Q5.1 Since you first arrived in Aotearoa NZ, have you yourself used a service at, or been admitted to, a public hospital as a patient? This could have been for a physical or a mental health condition.

- ○ Yes (1)
- ○ No (2)
- ○ Don’t know (3)
- ○ Refuse to answer (4)

Q5.2 Since you first arrived in Aotearoa NZ, was there a time when you had a medical problem but did not use a service at, or been admitted to, a public hospital as a patient? If so, why? If not, please select the option "Don't apply" (Multiple responses possible)

** Chinese-speaking practitioners mean the practitioners who can speak Mandarin, Cantonese, and/or Hakka.*

*** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*

- [ ] Lack of Chinese-speaking practitioners and/or translators in hospital services* (1)
- [ ] Services were expensive/ not affordable (2)
- [ ] Had no transport to get there (3)
- [ ] Couldn’t spare the time (4)
- [ ] Lack of support person** (include support person was difficult to take time off work) (5)
- [ ] Didn’t want to be a burden (6)
- [ ] Unfamiliar with the public hospital services in NZ (7)
- [ ] Couldn’t get an appointment soon enough/at a suitable time (8)
- [ ] Long waiting list (9)
- [ ] Lack of available hospital services in the area (10)
- [ ] Concerned about the risk of contracting COVID (11)
- [ ] Other (specify) (12) _____
- [ ] Don’t apply (13)
- [ ] Don’t know (14)
- [ ] Refuse to answer (15)

Q5.3 When you were not able to use a service at, or been admitted to, a public hospital, what did you do instead? (Multiple responses possible)

- [ ] Nothing (1)
- [ ] Went to private hospital (2)

☐ Went to hospital in your original country (specify, e.g., How long did you wait before you decide back to your original country to seek medical help/treatment? & Why you choose to go to your original country to seek medical help/treatment?) (3) _____

☐ Something else (specify) (4) _____

☐ Don't apply (5)

☐ Don't know (6)

☐ Refuse to answer (7)

Q5.4 Does the COVID-19 pandemic prevented you from accessing and using public hospital services when you had a health problem?

○ Yes (specify how) (1) _____

○ No (2)

○ Don't know (3)

○ Refuse to answer (4)

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6. Private hospital

The next set of questions is about your experiences of accessing and using private hospital services in Aotearoa NZ.

Q6.1 Since you first arrived in Aotearoa NZ, have you yourself used a service at, or been admitted to, a private hospital as a patient?

☐ Yes (1)

☐ No (2)

☐ Don't know (3)

☐ Refuse to answer (4)

Q6.2 Since you first arrived in Aotearoa NZ, was there a time when you had a health problem but did not use a service at, or been admitted to, a private hospital as a patient? If so, why? If not, please select the option "Don't apply". (Multiple responses possible)

* Chinese-speaking practitioners mean the practitioners who can speak Mandarin, Cantonese, and/or Hakka.

** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.

- [ ] Lack of Chinese-speaking practitioners and/or translators in hospital services* (1)
- [ ] Services were expensive/not affordable (2)
- [ ] Had no transport to get there (3)
- [ ] Couldn’t spare the time (4)
- [ ] Lack of support person** (include support person was difficult to take time off work) (5)
- [ ] Didn’t want to be a burden (6)
- [ ] Unfamiliar with the private hospital services in NZ (7)
- [ ] Couldn’t get an appointment soon enough/at a suitable time (8)
- [ ] Long waiting list (9)
- [ ] Lack of available hospital services in the area (10)
- [ ] Concerned about the risk of contracting COVID (11)
- [ ] Other (specify) (12) _____
- [ ] Don’t apply (13)
- [ ] Don’t know (14)

☐ Refuse to answer (15)

Q6.3 Does the COVID-19 pandemic prevented you from accessing and using private hospital services when you had a health problem?

○ Yes (specify how) (1) _____

○ No (2)

○ Don’t know (3)

○ Refuse to answer (4)

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7. Emergency department

The next questions are about your use and experience of emergency departments (ED) at public hospitals for your own health, during pre-pandemic and COVID-19 pandemic in Aotearoa New Zealand.

Q7.1 Since you first arrived in Aotearoa NZ, have you visited to an emergency department at a public hospital about your own health?

- ○ Yes (1)
- ○ No (2)
- ○ Don't know (3)
- ○ Refuse to answer (4)

Q7.2 What were all the reasons you went to a hospital emergency department? (Multiple responses possible)

- ☐ Thought the condition was serious / life threatening (1)
- ☐ Time of day / day of week (e.g., after-hours) (2)
- ☐ Sent by GP (3)
- ☐ Sent by Healthline (or another telephone helpline) (4)
- ☐ Taken by ambulance or helicopter (5)
- ☐ Cheaper (15)
- ☐ More confident about hospital than GP (7)
- ☐ ED recommended by someone else (8)
- ☐ Waiting time at GP too long (9)
- ☐ Do not have regular GP (10)

☐ Another reason (specify) (11)

_____

☐ Don’t apply (12)

☐ Don’t know (13)

☐ Refuse to answer (14)

☐

Q7.3 Thinking about your last visit to a hospital emergency department for your own health, how long did you wait before being treated?

○ Less than 30 minutes (1)

○ 30 minutes to less than 1 hour (2)

○ 1 hour to less than 2 hours (3)

○ 2 hours to less than 3 hours (4)

○ 3 hours or more (5)

○ Don’t apply (9)

○ Don’t know (10)

○ Refuse to answer (11)

Q7.4 How good were staff at telling you how long you could expect to wait, or if there would be a delay?

○ Very good (1)

○ Good (2)

○ Neither good nor bad (3)

○ Poor (4)

- ○ Very poor (5)
- ○ Don’t apply (6)
- ○ Don’t know (7)
- ○ Refuse to answer (8)

Q7.5 How did you feel about how long you had to wait?

- ○ I didn’t mind the wait (1)
- ○ I had to wait (2)
- ○ Don’t apply (3)
- ○ Don’t know (4)
- ○ Refuse to answer (5)

Q7.6 Since you first arrived in Aotearoa NZ, was there a time when you had a medical problem but did not visit a hospital emergency department (ED)? If so, why? If not, please select the option "Don't apply". (Multiple responses possible)

** Chinese-speaking caregiver means the caregiver who can speak Mandarin, Cantonese, and/or Hakka.*

*** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*

- ☐ Chinese-speaking caregiver was unavailable* (1)
- ☐ Services were expensive/ not affordable (2)
- ☐ Had no transport to get there (3)
- ☐ Couldn’t spare the time (4)
- ☐ Lack of support person** (include support person was difficult to take time off work) (5)
- ☐ Didn’t want to be a burden (6)

- [ ] Unfamiliar with the ED services in NZ (7)
- [ ] Long waiting time (8)
- [ ] Lack of available ED services in the area (9)
- [ ] Concerned about the risk of contracting COVID (10)
- [ ] Other (specify) (11) _____
- [ ] Don’t apply (12)
- [ ] Don’t know (13)
- [ ] Refuse to answer (14)

Q7.7 Does the COVID-19 pandemic prevented you from accessing and using ED when you had a health problem?

- ○ Yes (specify) (1) _____
- ○ No (2)
- ○ Don’t know (3)
- ○ Refuse to answer (4)

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8. Medical specialists

The next few questions are about the use of medical specialists during pre-pandemic and COVID-19 pandemic in Aotearoa New Zealand. By medical specialist I mean the kind of doctor that people go to for a particular health condition, problem, or service, not a GP. You may have seen the medical specialist as an outpatient in a hospital or at their private rooms or clinic. Please do not include medical specialists you may have seen if you were admitted to hospital overnight.

Q8.1 Since you first arrived in Aotearoa NZ, have you seen any of the following medical specialists about your own health? (Multiple responses possible)

- Only code as 'Other' if respondent has seen a specialist in this list, otherwise code 'None'.

- [ ] Dermatologist (1)
- [ ] Neurologist (2)
- [ ] Cardiologist (3)
- [ ] Haematologist (4)
- [ ] Endocrinologist (5)
- [ ] Respiratory Physician (6)
- [ ] Immunologist (allergy specialist) (7)
- [ ] Oncologist (8)
- [ ] General surgeon (9)
- [ ] Orthopaedic surgeon (10)
- [ ] Ophthalmologist (eye specialist) (11)
- [ ] Ear, nose, and throat specialist (12)
- [ ] Urologist (13)
- [ ] Gynaecologist (14)
- [ ] Geriatrician (15)
- [ ] General or Internal Medical specialist (16)

- [ ] Psychiatrist (17)
- [ ] Other (specify) (18) _____
- [ ] None (19)
- [ ] Don’t know (20)
- [ ] Refuse to answer (21)

Q8.2 Since you first arrived in Aotearoa NZ, have you avoided going to a specialist when you need to? If so, why? If not please select the option "Don't apply". (Multiple responses possible)

**Chinese-speaking specialist means the specialist who can speak Mandarin, Cantonese, and/or Hakka.*

*** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*

- [ ] Chinese-speaking specialist was unavailable* (1)
- [ ] Services were expensive/ not affordable (2)
- [ ] Had no transport to get there (3)
- [ ] Couldn’t spare the time (4)
- [ ] Lack of support person** (include support person was difficult to take time off work) (5)
- [ ] Didn’t want to be a burden (6)
- [ ] Unfamiliar with the medical specialist referral system in NZ (7)
- [ ] Couldn’t get an appointment soon enough/at a suitable time (8)
- [ ] Long waiting list (9)

☐ Lack of specialist care services in the area (10)

☐ Concerned about the risk of contracting COVID (11)

☐ Other (specify) (12) _____

☐ Don’t apply (13)

☐ Don’t know (14)

☐ Refuse to answer (15)

Q8.3 When you were not able to see a specialist, what did you do instead? (Multiple responses possible)

☐ Nothing (1)

☐ Went to see the specialist at a later date (2)

☐ Back to your original country to see a specialist [specify, how long did you wait before you decide to go to your original country to seek medical help/treatment? And why you choose to go to your original country to seek medical help/treatment?] (3) _____

☐ Something else (specify) (4) _____

☐ Don’t apply (5)

☐ Don’t know (6)

☐ Refuse to answer (7)

Q8.4 Does the COVID-19 pandemic prevented you from accessing and using medical specialist services when you had a health problem?

○ Yes (specify how) (1) _____

- ○ No (2)
- ○ Don’t know (3)
- ○ Refuse to answer (4)

End of Block: Questionnaire Part 2

Start of Block: Questionnaire Part 3

Part 3 Other health care services
Other health services are health services other than formal primary, secondary and tertiary healthcare services (MOH, 2020b).

9. Other health care workers
The next set of questions is about other health care workers you may have seen in Aotearoa NZ during pre-pandemic and COVID-19 pandemic circumstances. Do not include anyone that you may have seen if you were admitted to hospital overnight. Please do not include any health care workers that we have already talked about.

Q9.1 Since you first arrived in Aotearoa NZ, have you seen any of the following health care workers about your own health? (Multiple responses possible)

- Only code as 'Other' if respondent has seen a specialist in this list, otherwise code 'None'.

- ☐ Pharmacist (1)
- ☐ Physiotherapist (2)
- ☐ Chiropractor (3)
- ☐ Osteopath (4)
- ☐ Dietitian (5)
- ☐ Optician or optometrist (6)
- ☐ Occupational therapist (7)

- [ ] Social worker (8)
- [ ] Psychologist or counsellor (9)
- [ ] Chinese traditional medical doctor (10)
- [ ] Chinese acupuncturist (11)
- [ ] Chinese massage therapist (12)
- [ ] Dentist (13)
- [ ] Other (specify) (14) _____
- [ ] None (15)
- [ ] Don’t know (16)
- [ ] Refuse to answer (17)

Q9.2 Since you first arrived in Aotearoa NZ, you were not able to use the other health services when you needed to? If so, why? If not, please select the option "Don't apply". (Multiple responses possible)

* *Chinese-speaking caregiver means the caregiver who can speak Mandarin, Cantonese, and/or Hakka.*

*** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*
Chinese-speaking caregiver was unavailable*

- [ ] Services were expensive/ not affordable (1)
- [ ] Had no transport to get there (2)
- [ ] Couldn’t spare the time (3)
- [ ] Lack of support person** (include support person was difficult to take time off work) (4)

- [ ] Didn’t want to be a burden (5)
- [ ] Unfamiliar with these services in NZ (6)
- [ ] Couldn’t get an appointment soon enough/at a suitable time (7)
- [ ] It was after-hours (8)
- [ ] Lack of other health services in the area (9)
- [ ] Concerned about the risk of contracting COVID (10)
- [ ] Other (specify) (11) _____
- [ ] Don’t apply (12)
- [ ] Don’t know (13)
- [ ] Refuse to answer (14)

Q9.3 Does the COVID-19 pandemic prevented you from accessing and using other healthcare service when you need to?

- ○ Yes (specify how) (1) _____
- ○ No (2)
- ○ Don’t know (3)
- ○ Refused to answer (4)

End of Block: Questionnaire Part 3

Start of Block: Questionnaire Part4

Part 4 COVID-19 related health care & support services
The examples for COVID-19 related healthcare services are COVID-19 testing, vaccination, isolation services, and so on.

10. COVID-19 related health care & support services

The following set of questions are about COVID-19 related healthcare and/or support services you go to when you are feeling unwell or are injured during the COVID-19 pandemic.

Q10.1 Have you been to COVID-19 related healthcare and/or support services, for your own health, during the COVID-19 pandemic (2020-current)?

- ○ Yes (1)
- ○ No (2)
- ○ Don't know (3)
- ○ Refuse to answer (4)

Q10.2 What sort of COVID-19 related healthcare and/or support services is this? (Multiple responses possible)

- ☐ COVID-19 testing (1)
- ☐ COVID-19 isolation service (2)
- ☐ COVID-19 vaccination (3)
- ☐ Phoned Healthline or another phone number for COVID-19 related advice (4)
- ☐ Other (specify) (5) _____
- ☐ None (7)
- ☐ Don't know (8)
- ☐ Refuse to answer (9)

Q10.3 How long after your scheduled appointment time did you wait to access/use COVID-19 related healthcare and/or support services?

- ○ I didn't have an appointment time (1)

- I was seen at my appointment time (2)
- 5 to 15 minutes (3)
- 15 to 30 minutes (4)
- more than 30 minutes (5)
- Don’t apply (6)
- Don’t know (7)
- Refuse to answer (8)

Q10.4 How did you feel about how long you had to wait?

- I didn’t mind the wait (1)
- I had to wait (2)
- Don’t apply (3)
- Don’t know (4)
- Refuse to answer (5)

Q10.5 How do you rate the quality of care you received?

- Very good (1)
- Good (2)
- Neither good nor bad (3)
- Poor (4)
- Very poor (5)
- Don’t apply (6)

- ○ Don’t know (7)
- ○ Refuse to answer (8)

Q10.6 Have staff given you enough information to help you manage your health concerns during the pandemic?

- ○ Yes, definitely (1)
- ○ Yes, to some extent (2)
- ○ No, not at all (3)
- ○ Don’t apply (4)
- ○ Don’t know (5)
- ○ Refuse to answer (6)

Q10.7 When you needed to use these COVID-19 related health and/or support services during the pandemic, what was the reason you were not able to access/use them? (Multiple responses possible)

**Chinese-speaking caregiver mean the caregiver who can speak Mandarin, Cantonese, and/or Hakka.*

*** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*

- ☐ Concerned about the risk of contracting COVID (1)
- ☐ Chinese-speaking caregiver was unavailable* (2)
- ☐ Services were expensive/ not affordable (3)
- ☐ Had no transport to get there (4)
- ☐ Lack of support person** (include support person was difficult to take time off work) (5)

- [ ] Didn’t want to be a burner (6)
- [ ] Unfamiliar with the procedure of using COVID-19 related healthcare services (7)
- [ ] Couldn’t spare the time (8)
- [ ] Long waiting time (9)
- [ ] It was after-hours (10)
- [ ] Lack of COVID-19 related healthcare services in the area (11)
- [ ] Other (specify) (12) _____
- [ ] Don’t apply (13)
- [ ] Don’t know (14)
- [ ] Refuse to answer (15)

Q10.8 When you were not able to access/use the COVID-19 related services, what did you do instead? (Multiple responses possible)

- [ ] Nothing (1)
- [ ] Went to the service at a later date (2)
- [ ] Went to a service in other location (3)
- [ ] Phoned Healthline or another phone number for advice (4)
- [ ] Something else (specify) (5)

_____

- [ ] Don’t apply (6)
- [ ] Don’t know (7)
- [ ] Refuse to answer (8)

Q10.9 How do you get the information about the available COVID-19 related health and support services in the area? (Multiple responses possible)

- [ ] Television, radio, internet, social media (e.g. WeChat, QQ, Facebook) (1)
- [ ] GP (2)
- [ ] Family members and friends (3)
- [ ] Other (specify) (4) _____
- [ ] Don’t know (5)
- [ ] Refuse to answer (6)

Q10.10 Does the COVID-19 pandemic prevented you from accessing and using COVID=19 related health and/or support services when you need to?

- ○ Yes (specify how) (1) _____
- ○ No (2)
- ○ Don’t know (3)
- ○ Refused to answer (4)

End of Block: Questionnaire Part4

Start of Block: Pilot survey evaluation

Evaluation Respondent burden assessment

Please could you take a few minutes to answer the following questions, which will ask you about your experience of the survey process.

Q1 Respondent burden assessment

	Absolutely not acceptable (21)	Not acceptable (22)	Neither acceptable nor not acceptable (23)	Acceptable (24)	Highly acceptable (25)
How do you rate the time you spent on completing the survey? (6)	○	○	○	○	○
How do you rate the number of questions? (7)	○	○	○	○	○
How do you rate the complexity of questions? (8)	○	○	○	○	○

Q2 Are there any other comments you would like to make about taking part in the pilot survey? What do you think we need to do to improve the survey?

_____

Q3 Did you hear the study from the following social groups?

- ○ The Asian Network Incorporated (TANI) (1)
- ○ Chinese New Settlers Services Trust (CNSST) (2)
- ○ New Zealand Chinese Association (NZCA) (3)
- ○ Asian Family Services (4)
- ○ Age Concern New Zealand (5)
- ○ Local Chinese Community (6)

- ○ Facebook group (7)
- ○ WeChat group (8)
- ○ Others (please specify) (9) _____
- ○ None of all (10)

Q4 Are you or your family member/ friend who referred the study to you belonging to the social group?

- ○ Yes (1)
- ○ No (2)

Q5 Did you hear about the study from the following media?

- ○ Facebook Ads/post (1)
- ○ WeChat Ads/post (2)
- ○ Other social media (please specify) (3) _____
- ○ Email (4)
- ○ Radio (5)
- ○ TV (6)
- ○ Skykiwi Ads (7)
- ○ Local community (8)
- ○ Local library (9)
- ○ Word of mouth (10)
- ○ Others (please specify) (11) _____
- ○ None of all (12)

End of Block: Pilot survey evaluation

Approved by the Auckland University of Technology Ethics Committee on 24/08/2020 AUTEC Reference number 20/234

Appendix C2: Health Services Access and Utilisation Experience Pilot Survey (Chinese Version)

知情须知

我是 Sherry Zhu, 是一名就读于奥克兰理工大学的博士研究生。我正在开展一项研究, 旨在深入了解新近抵达新西兰的中国老年移民在新冠疫情期间以及疫情爆发前后的医疗保健获取和利用的情况。该项研究还将为改善新西兰医疗健康服务提供建议。我诚邀您参与此项研究的调查问卷阶段。您可以自主的选择是否参加这项研究。拒绝参加此项研究，不会损害您的任何利益。

此项研究是我的博士论文的一部分。该研究将可能在相关的学术会议(如移民健康会议)和社区会议上展示。研究成果也将可能在相关的学术杂志(如定性健康研究)和期刊(如 TANI) 上发表。

特别鸣谢:

在此, 我要感谢新西兰卫生部健康调查组允许我使用新西兰健康调查（成人问卷）来开发我的调查问卷。

研究项目名称：

了解在新型冠状肺炎 (COVID-19) 大流行期间以及流行前后，中国老年新移民在新西兰的医疗保健获取和利用的情况: 一项混合方法研究。

试点调查问卷旨在：

- 探索新冠疫情期间以及疫情爆发前后，新近移民的中国老年人在新西兰获得和使用医疗卫生服务的情况；
- 调查影响该人群获得使用新西兰医疗卫生服务的因素;
- 调查该人群对改善新西兰医疗卫生服务利用率的看法;
- 为设计正式的全国性调研问卷提供建议；

这项研究的结果, 还有可能用于学术出版物和演讲。

参加条件：

- 华人/中国人；
- 65 岁及以上；
- 所有性别 (男, 女, 或 其他性别);
- 在新西兰居住少于十年(从接受调研之日起)；
- 目前居住在新西兰。

如何同意参加这项研究：

此项试点调查问卷将在网上面向所有潜在受访者, 开放时间自 2021 年 12 月 07 日起截至到 2022 年 5 月 31 日。一旦您开始填写调查问卷，即表示您同意参与试点调查。

研究过程中会发生：

在该项研究第二阶段的数据收集包括, 邀请您和其他符合参加调研条件的志愿者参与在线问卷调查。试点问卷将以选择题和简答题的形式, 调查有关于您在新冠疫情期间以及疫情爆发前后在新西兰获得和使用健康卫生服务的经历。 调查问卷将在线上进行。完成问卷将需要 40 分钟左右。您可以选择使惯用的语言（简体中文、繁体中文或英文）回答问题。

参加研究的风险与不适：

本项试点调查将对您, 造成很小的不适和风险。

如何缓解这些风险和不适：

本项试点调查不会涉及任何关于您的健康信息。问卷只关注您在新西兰获得和使用医疗服务的经历。您有权拒绝回答让您产生不适的问题。您可以在任何需要的时候选择暂停回答问卷, 并在您休息好以后继续进行问卷调

查。您也有权拒绝参加调查, 这不会损害您应有的任何利益。

如有需要, 您也可以选择通过 Healthline, Health Point 或 Asian Family Service 安排免费的心理咨询。这些咨询 机构可以为华人朋友提供免费的普通话咨询服务。有关更多详细的咨询服务信息可以拨打免费电话或 通过网站查询:

Healthline
免费电话: 0800 611 116
网站: www.healthpoint.co.nz

Health Point
免费电话: 0800 56 76 666
网站: www.cmh.org.nz/vagus-centre.aspx

Asian Family Service
免费电话: 0800 862 342
网站: https://www.asianfamilyservices.nz

参加研究的收益：
如果您同意参加本研究，您将有可能受益于研究人员讨论获得和使用医疗健康服务的经历。本项研究的成果，将能够帮助减少在获得使用医疗健康服务时遇到的障碍。作为对参与者的感谢，您将获得 20 纽元的礼金券。此外，您的参与也可以使得其他中国移民受益。您对改善新西兰医疗卫生系统使用的建议还将使得整个社区从中受益。

作为研究人员，我也可以从该研究项目中受益。我可以对该领域有更深入的了解，可以在研究过程中提高自己的专业知识。此项研究还将帮助我获得博士学位资格。

隐私及保密问题：
本次试点调查为匿名调查。 也就是,只有受访者知道自己参与了问卷调查,调查研究人员无法识别任何受访者。因此，在撰写研究报告时，您的个人信息都不可能被识别。尽管您会被要求在 “抽奖” 页面上提供个人联系方式, 但这些信息仅用于接收礼券, 并不会用于撰写研究报告。 我想向您保证, 您在 “抽奖” 页面上提供的所有可能的个人识别信息都将被严格保密。此外, 所有数据的使用、存储和销毁将完全遵循奥克兰理工道德委员会的规定。

研究花费：
参加该项研究的试点调查将不会产生任何直接费用。您最多需要花费 40 分钟的时间来参加在线问卷调查。

如何考虑是否接受此次邀请：
此项试点调查问卷将在网上面向所有潜在受访者, 开放时间自 2021 年 12 月 07 日起截至到 2022 年 5 月 31 日。您可以在此期间考虑是否, 以及何时参加调查。参加这项研究完全是您自主的选择。如果您对参加本次的试点调查有任何疑问, 请随时与我联系。我的联系方式见如下。

有关这项研究结果的反馈：
如果您对这项研究的结果有兴趣，您可以要求并获得一份本研究摘要 (1-2 页) 的中文（简体/繁体）和/或英文副本。

任何获取相关信息：

如果您对本项研究有任何疑问, 请联系研究负责人:

Sherry Zhu:

电子邮箱地址： nwq5278@autuni.ac.nz

手机：0212370431

如果您对本项目的研究性质有任何疑问，请联系本研究项目的指导老师:

Eleanor Holroyd 教授:

电子邮箱地址: eleanor.holroyd@aut.ac.nz,

电话: (09)9219999 ext. 6745

Priya Saravanakumar 博士:

电子邮箱地址: Priya.Saravanakumar@aut.ac.nz, 或 Padmapriya.Saravanakumar@uts.edu.au

电话: (09)9219999 ext. 8173

Irene Zeng 博士:

电子邮箱地址: Irene.zeng@aut.ac.nz

如果您对本项目的研究行为有任何疑问，请联系奥克兰理工大学道德委员，电子邮箱：ethics@aut.ac.nz, 电话（09）921 9999 ext. 6038.

Ngā Mihi Nui

Sherry Zhu (AUT 在读博士生)

此调查由奥克兰理工大学道德委员会于 2021-12-07 批准，AUTEC 参考编号 20/234。

End of Block: Participant Information Sheet

Start of Block: Participants' Socio-demographic Characteristics Information

Q1 年龄

- 65-74 岁 (1)
- 75-84 岁 (2)
- 85 岁及以上 (3)

Q2 性别

- 男 (1)
- 女 (2)
- 其他性别 (请注明) (3) _____

Q3 出生国家/地区

- 中国 (1)
- 香港 (2)
- 台湾 (3)
- 其他 (请注明) (4) _____

Q4 婚姻状况

- 单身 (1)
- 已婚/有伴侣 (2)
- 分居/离婚 (3)
- 丧偶 (4)

Q5 您是在哪一年来新西兰定居的?

- 2012 (1)

- ○ 2013 (2)
- ○ 2014 (3)
- ○ 2015 (4)
- ○ 2016 (5)
- ○ 2017 (6)
- ○ 2018 (7)
- ○ 2019 (8)
- ○ 2020 (9)
- ○ 2021 (10)
- ○ 其他 (请注明) (11) _____

Q6 您持有哪种移民签证?

- ○ 新西兰公民 (1)
- ○ 永久居民 (2)
- ○ 工作签证 (3)
- ○ 其他 (请注明) (4) _____

Q7 您在新西兰的居住地区？如奥克兰 (Auckland)

_____

Q8 在新西兰与您同住的是……？ (可多选)

- ☐ 独居 (1)
- ☐ 伴侣 (2)
- ☐ 兄弟/姐妹 (3)

- [ ] 儿子/女儿 (4)
- [ ] 儿媳/女婿 (5)
- [ ] 孙子/孙女/外孙/外孙女 (6)
- [ ] 其他亲戚 (7)
- [ ] 其他人 (非亲戚) (8)

Q9 您的收入来源? (可多选)

- [ ] 工资, 佣金, 退休金 (1)
- [ ] 自雇 (2)
- [ ] 投资收入, 如利息, 股息, 资金等 (3)
- [ ] 政府福利, 如失业补助, 疾病补助, 其他政府福利 (4)
- [ ] 无收入来源 (6)
- [ ] 其他 (请注明) (7) _____

Q10 您接受的教育程度

- ○ 无 (1)
- ○ 小学学历 (2)
- ○ 初中学历 (3)
- ○ 高中学历 (4)
- ○ 技术院校 (5)
- ○ 大学学历 (6)
- ○ 其他 (请注明) (7) _____

Q11 您在新西兰有什么类型的健康医疗保险?

- ○ 没有任何形式的健康医疗保险 (1)
- ○ 全面的健康医疗保险，涵盖日常医疗护理费用(如看家庭医生的费用, 药房费用，以及私人医院治疗费用) (2)
- ○ 健康医疗保险仅涵盖住院治疗的费用 (3)
- ○ 其他 (请注明) (4) _____

End of Block: Participants' Socio-demographic Characteristics Information

Start of Block: Questionnaire Part 1

说明: 以下的问题涉及, 您在新冠疫情期间以及疫情前后, 访问、使用新西兰的医疗卫生服务机构的经历。问卷中的所有问题都只针对, 出于自身健康考虑而使用医疗卫生机构的经历。这里的健康是指您的心理和生理健康。

回答问题时的注意事项:

- 当您选择 “其他” 选项的时候, 请给出具体说明;
- 并非所有的提问都适用于您的情况/经历，如果遇到这类问题，请选择 “我没有此类经历”;
- 如果您不知道如何回答该如何回答问卷中的问题, 请选择 “不知道如何回答”;
- 您有权拒绝回答问题, 这种情况下, 请选择 “拒绝回答” 。

Part 1 初级(基层)医疗卫生服务机构

在新西兰, 初级医疗卫生服务是指由家庭医生、注册护士、药剂师以及其他卫生保健工作者提供的社区医疗卫生服务(新西兰卫生部, 2020c) 。在新西兰, 您可以直接访问这些初级医疗卫生服务，无需其他医护人员的转诊推荐。

1. 初级(基层)医疗卫生服务机构

以下的一组问题将涉及, 在新冠疫情期间以及疫情前后, 当您感到不适或受伤的时候, 访问、使用初级(基层)医疗卫生服务机构 (例如家庭医生诊所或医疗中心) 的经历。

Q1.1 自从您第一次抵达新西兰以来，当您感到不适或者受伤的时候, 您是否访问、使用过当地的初级(基层)医疗卫生机构?

- ○ 是 (1)
- ○ 否 (2)
- ○ 不知道如何回答 (3)

○ 拒绝回答 (4)

Q1.2 您访问、使用过哪些初级医疗卫生机构? (可多选)

☐ 家庭医生诊所或医疗中心 (包括位于医院内的家庭医生诊所、以及空军/陆军/海军的全科医生) (1)

☐ 急诊/夜诊医疗中心– 非公立医院的急诊室, 此类诊所在大多数诊所营业时间以外 (晚上、 周末、或公共假日) 提供医疗卫生服务 (2)

☐ 其他 (请具体说明, 例如监狱中的诊所、公司/单位的卫生室、或者疗养院中的医疗卫生设施) (3)
_____

☐ 我没有此类经历 (5)

☐ 不知道如何回答 (8)

☐ 拒绝回答 (9)

Q1.3 自从您第一次抵达新西兰以来，您是否有过这样的经历? 当您有需要的时候却无法在接下来的 24 小时之内访问、使用初级医疗卫生保健机构。如果您有这样的经历, 请列出所有的理由。如果您没有这样的经历, 请选择 “我没有此类经历” 。(可多选)

- 如果是因为需要就诊的时间是在周末而导致无法访问、使用家医诊所和医疗中心，请选择 ‘其他’。

☐ 所有预约已经被预定一空，无法获得预约 (1)

☐ 可供选择的就医时间不适合我的需求 (2)

☐ 可预约到的医生/其他工作人员, 并不是我希望去看的医生/工作人员 (3)

☐ 我本可以选择护士提供的服务，但是我想看医生 (4)

☐ 我本可以选择电话或视频会诊，但是我想去诊所就医 (5)

☐ 居住地周围的诊所/医疗中心在新冠疫情封城期间暂停服务 (6)

☐ 其他 (请说明具体原因, 例如需要就诊的时间是在周末) (7)
_____

- [ ] 我没有此类经历 (8)
- [ ] 不知道如何回答 (9)
- [ ] 拒绝回答 (10)

Q1.4 您是否觉得, 诊所或医疗中心的营业时间, 适应您的需求?

- ○ 是 (1)
- ○ 否 (2)
- ○ 不知道如何回答 (4)
- ○ 拒绝回答 (5)

Q1.5 以下哪个额外的开放时间, 会更便于您访问、联系诊所/医疗中心的工作人员？请列出所有的适用时间段。(可多选)

- [ ] 工作日早上的早些时候（例如早上 8 点之前） (1)
- [ ] 工作日晚上的晚些时候（例如下午 5 点之后） (2)
- [ ] 星期六，或星期六晚上 (3)
- [ ] 在星期天 (4)
- [ ] 其他 (请具体说明) (5) _____
- [ ] 不知道如何回答 (6)
- [ ] 拒绝回答 (7)

Q1.6 您如何联系诊所或医疗中心? 这包括进行预约、询问健康/医疗相关问题、或者要求开具处方。(可多选)

- [ ] 通过电话 (1)
- [ ] 邮件 (2)
- [ ] 亲自前往问询 (例如进入家医诊所、医疗中心、或夜診诊所) (3)
- [ ] 手机短信或 SMS 信息 (4)
- [ ] 在线服务 (例如 ManageMyHealth, Health 365) (5)
- [ ] 其他 (请具体说明) (6) _____
- [ ] 我没有此类经历 (7)
- [ ] 不知道如何回答 (8)
- [ ] 拒绝回答 (9)

Q1.7 如何评估诊所或医疗中心的前台工作人员对您的帮助?

- ○ 非常有用 (1)
- ○ 有用 (2)
- ○ 一般 (3)
- ○ 没有用 (4)
- ○ 非常没有用 (5)
- ○ 我没有此类经历 (6)
- ○ 不知道如何回答 (7)
- ○ 拒绝回答 (8)

Q1.8 总体而言，您常去的诊所/医疗中心的工作人员是否为您提供了足够的信息来帮助您处理健康问题？

- 如果您没有任何健康问题或者需要诊所/医疗中心提供任何健康/医疗信息, 请选择 “我没有此类经历”

- ○ 是的，提供了足够的信息 (1)
- ○ 是，提供了一定程度的信息 (2)
- ○ 没有提供任何有用信息 (3)
- ○ 我没有此类经历 (6)
- ○ 不知道如何回答 (7)
- ○ 拒绝回答 (8)

Q1.9 总体而言，如何评价您在诊所或医疗中心获得的服务？这包括所有在初级(基层)医疗卫生机构工作的人员，不仅仅是家庭医生。

- ○ 非常满意 (1)
- ○ 满意 (2)
- ○ 一般 (3)
- ○ 不满意 (4)
- ○ 非常不满意 (5)
- ○ 我没有此类经历 (6)
- ○ 不知道如何回答 (7)
- ○ 拒绝回答 (8)

Q1.10 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用初级医疗卫生机构 (如家医自身和医疗中心)?

- ○ 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1)
  _____
- ○ 否 (2)

○ 不知道如何回答 (3)

○ 拒绝回答 (4)

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2. 家庭医生

以下的一组问题涉及，在新冠疫情期间以及疫情前后, 您在新西兰访问、使用家庭医生(家医)的情况/经历。这指您在所有的医疗中心看家医的经历, 这包括常去/注册的诊所和临时起意去的医疗中心。

Q2.1 自从您第一次抵达新西兰以来，您是否因为自身健康/疾病的原因,去看过家庭医生? 这里的健康是指您的心理和生理健康。

○ 是 (1)

○ 否 (2)

○ 不知道如何回答 (3)

○ 拒绝回答 (4)

Q2.2 请回想一下您上一次去看家医的情况。在您预约的就诊时间到了之后, 您等待了多久才最终见到了医生?

○ 我没有预约 (1)

○ 我在预约时间就诊 (2)

○ 等了 5 到 15 分钟 (3)

○ 等了 15 到 30 分钟 (4)

○ 等了超过 30 分钟 (5)

○ 我没有此类经历 (6)

○ 不知道如何回答 (7)

○ 拒绝回答 (8)

Q2.3 您对候诊时间的长短有何看法?

○ 我不介意等待 (1)

- 我不得不等待 (2)
- 不知道如何回答 (3)
- 拒绝回答 (4)

Q2.4 请回想一下您上一次去看家医的情况。家庭医生是否以您可以理解的方式, 对您的健康状况和治疗方案做出解释说明? 请做出评价?

- 非常好 (1)
- 好 (2)
- 一般 (3)
- 差 (4)
- 非常差 (5)
- 我没有此类经历 (6)
- 不知道如何回答 (7)
- 拒绝回答 (8)

Q2.5 请回想一下您上一次去看家医的情况。家庭医生是否让您参与有关的治疗、护理的决策过程? 比如讨论不同的治疗方案等。请做出评价?

- 非常好 (1)
- 好 (2)
- 一般 (3)
- 差 (4)
- 非常差 (5)
- 我没有此类经历 (6)
- 不知道如何回答 (7)
- 拒绝回答 (8)

Q2.6 请回想一下您上一次去看家医的情况, 整个过程中家庭医生是否表现出对您的尊重? 请做出评价?

- ○ 非常好 (1)
- ○ 好 (2)
- ○ 一般 (3)
- ○ 差 (4)
- ○ 非常差 (5)
- ○ 我没有此类经历 (6)
- ○ 不知道任何回答 (7)
- ○ 拒绝回答 (8)

Q2.7 您是否信任、信赖您见所过的家医？

- ○ 是的，绝对信任 (1)
- ○ 是，在某种程度上信任 (2)
- ○ 不信任 (3)
- ○ 我没有此类经历 (4)
- ○ 不知道如何回答 (5)
- ○ 拒绝回答 (6)

Q2.8 您是否有过这样的经历? 您有需求, 却没有选择使用家庭医生的服务。如果是这样，请给出理由？如果您没有过此类经历, 请选择 “我没有此类经历” 。(可多选)

**会说中文是指会说普通话、粤语、和/或客家话。*
***陪护人员可以是您的伴侣、儿子/女儿、儿媳/女婿、孙子/孙女、其他亲戚、家人朋友或邻居。*

- ☐ 没有会说中文的家庭医生* (1)
- ☐ 费用过于昂贵/负担不起 (2)

- [ ] 交通不便, 无法去家医诊所 (3)
- [ ] 无法抽出时间去看家医 (4)
- [ ] 没有陪护人员**（包括由于陪护人员很难向工作单位请假, 而无法进行陪护） (5)
- [ ] 不想成为孩子们的负担 (6)
- [ ] 不熟悉在新西兰使用访问家庭医生的流程 (7)
- [ ] 无法尽快获得预约, 或无法获得适当时段的预约 (8)
- [ ] 诊所/医疗中心的营业时间已经结束 (9)
- [ ] 我本可以选择电话或视频会诊，但是我想去诊所就医 (10)
- [ ] 无法与医生获得联系 (11)
- [ ] 居住地周围的家庭医生在新冠疫情封城期间暂停服务 (12)
- [ ] 其他 (请具体说明) (13) _____
- [ ] 我没有此类经历 (14)
- [ ] 不知道如何回答 (15)
- [ ] 拒绝回答 (16)

Q2.9 当您有需求却无法访问、使用家医服务的时候，您选择做什么？(可多选)

- [ ] 什么都不做 (1)
- [ ] 过几天再去看这个家医 (2)
- [ ] 去医院的急诊室就医 (3)

☐ 去看急诊/夜诊医疗中心 (4)

☐ 叫救护车 (5)

☐ 去其他医疗卫生机构（例如中医、中医针灸、中医推拿等) (6)

☐ 拨打健康热线或其他咨询热线号码寻求建议和帮助 (7)

☐ 其他 (请具体说明) (8) _____

☐ 我没有此类经历 (9)

☐ 不知道如何回答 (10)

☐ 拒绝回答 (11)

Q2.10 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用家庭医生?

○ 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1)
_____

○ 否 (2)

○ 不知道如何回答 (3)

○ 拒绝回答 (4)

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3. 在家庭医生诊所和医疗中心工作的护士

以下的问题涉及, 在新冠疫情期间以及疫情前后, 您在新西兰访问、使用门诊护士(在家庭医生诊所和医疗中心工作的护士)的经历。您可能在咨询家医的同时, 使用过门诊护士的服务。您也可能在没有预约家医的时候, 单独使用过门诊护士的服务。门诊护士并不包括给您做过家访的护士, 或者您在医院见过的护士。此外, 这也不包括助产士和牙科护士。

Q3.1 自从您第一次抵达新西兰以来，您是否因为自身健康/疾病的原因, 访问、使用过在家庭医生诊所/医疗中心工作的护士的服务? 这里的健康是指您的心理和生理健康。

○ 是的, 在咨询家医的同时见过门诊护士 (这包括在看家医之前或之后) (1)

- ○ 是的, 我在没有预约家医的时候见过门诊护士 (2)
- ○ 否 (3)
- ○ 不知道如何回答 (4)
- ○ 拒绝回答 (5)

Q3.2 总体而言，如何评价您在家庭医生诊所和医疗中心获得的来自护士的服务?

- ○ 非常满意 (1)
- ○ 满意 (2)
- ○ 一般 (3)
- ○ 不满意 (4)
- ○ 非常不满意 (5)
- ○ 我没有此类经历 (6)
- ○ 不知道如何回答 (7)
- ○ 拒绝回答 (8)

Q3.3 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用在家医诊所和医疗中心工作的护士?

- ○ 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1)
  _____
- ○ 否 (2)
- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

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4. 急诊/夜诊医疗卫生机构 (非公立医院的急诊)

以下的一组问题是关于, 在新冠疫情期间以及疫情前后, 您在新西兰使用急诊/夜诊医疗卫生机构 (非公立医院的急诊室)的情况/经历。此类医疗卫生机构会在晚上、周末、公共假日等大多数家医或医疗中心结束营业的时间段, 为民众提供医疗卫生服务。

Q4.1 自从您第一次抵达新西兰以来，您是否有过这样的经历? 由于自身健康/疾病原因, 您需要在大多数诊所或医疗中心结束营业的时候, 寻求急诊/夜诊医疗卫生服务 (非公立医院的急诊) 。

- ○ 是 (1)
- ○ 否 (2)
- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

Q4.2 如果您在有需要的时候, 没有选择使用急诊/夜诊医疗卫生机构。请给出理由？(可多选)

**会说中文是指会说普通话、粤语、和/或客家话。*
***陪护人员可以是您的伴侣、儿子/女儿、儿媳/女婿、孙子/孙女、其他亲戚、家人朋友或邻居*

- ☐ 诊所没有会说中文的医护人员* (1)
- ☐ 费用过于昂贵/负担不起 (2)
- ☐ 交通不便, 无法去急诊/夜诊医疗卫生机构 (3)
- ☐ 无法抽出时间去 (4)
- ☐ 没有陪护人员**（包括由于陪护人员很难向工作单位请假, 而无法进行陪护） (5)
- ☐ 不想成为孩子们的负担 (6)
- ☐ 不熟悉使用新西兰急诊/夜诊医疗卫生机构的流程 (7)
- ☐ 居住地周围的急诊/夜诊医疗卫生机构在新冠疫情封城期间暂停服务 (8)
- ☐ 其他 (请说明具体原因) (9) _____
- ☐ 我没有此类经历 (10)
- ☐ 不知道如何回答 (11)

☐ 拒绝回答 (12)

Q4.3 当您有需求, 却无法访问、使用急诊/夜诊医疗卫生机构时, 您接下来做什么？(可多选)

☐ 什么都不做 (1)

☐ 去医院的急诊室就医 (2)

☐ 叫救护车 (3)

☐ 拨打健康热线或其他咨询热线号码寻求建议和帮助 (4)

☐ 其他 (请具体说明) (5) _____

☐ 我没有此类经历 (6)

☐ 不知道如何回答 (7)

☐ 拒绝回答 (8)

Q4.4 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用急诊/夜诊医疗卫生机构?

○ 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1)
_____

○ 否 (2)

○ 不知道如何回答 (3)

○ 拒绝回答 (4)

End of Block: Questionnaire Part 1

Start of Block: Questionnaire Part 2

Part 2 二级和三级医疗卫生机构
根据卫生部（2020b）的说法，二级和三级医疗卫生机构是指专家级别的医疗护理机构，这通常是指以医院为

基础的医疗卫生机构。 在新西兰, 这些机构包括公立医院、私立医院、公立医院的急诊科和医学专家/专科医生。

5. 公立医院

以下的一组问题涉及, 在新冠疫情期间以及疫情前后, 您在新西兰访问、使用公立医院的情况/经历。

Q5.1 自从您第一次抵达新西兰以来，您是否作为患者访问、使用过公立医院? 入院原因可以是心理或生理原因。

- ○ 是 (1)
- ○ 否 (2)
- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

Q5.2 您是否有过这样的经历? 您有需求, 却没有选择使用公立医院的服务设施。如果是这样，请给出理由？如果您没有过此类经历, 请选择 “我没有此类经历” 。(可多选)

***会说中文是指会说普通话、粤语、和/或客家话。*
***陪护人员可以是您的伴侣、儿子/女儿、儿媳/女婿、孙子/孙女、其他亲戚、家人朋友或邻居。*

- ☐ 医院没有会说中文的医护人员或翻译* (1)
- ☐ 费用过于昂贵/负担不起 (2)
- ☐ 交通不便, 无法去医院 (3)
- ☐ 无法抽出时间去医院 (4)
- ☐ 没有陪护人员**（包括由于陪护人员很难向工作单位请假, 而无法进行陪护） (5)
- ☐ 不想成为孩子们的负担 (6)
- ☐ 不熟悉使用访问新西兰公立医院的流程 (7)
- ☐ 无法尽快获得预约, 或无法内获得适当时段的预约 (8)
- ☐ 申请使用医院服务设施的人数量过多, 候选名单过长 (9)

☐ 居住地周围没有可用的公立医院设施 (10)

☐ 担心在公立医院就诊会感染新冠 (11)

☐ 其他 (请说明具体原因) (12) _____

☐ 我没有此类经历 (13)

☐ 不知道如何回答 (14)

☐ 拒绝回答 (15)

Q5.3 当您有需求, 却无法使用公立医院的服务设施时，您接下来选择做什么？(可多选)

☐ 什么都不做 (1)

☐ 去私立医院 (2)

☐ 回到原籍国/原居地, 并使用那里医院的医疗卫生设施 (请具体说明您等了多久才决定回原籍国/原居地寻求医疗帮助/治疗? 以及您选择回原籍国/原居地寻求医疗帮助/治疗的原因) (3) _____

☐ 其他 (请具体说明) (4) _____

☐ 我没有此类经历 (5)

☐ 不知道如何回答 (6)

☐ 拒绝回答 (7)

Q5.4 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用公立医院的医疗卫生服务设施?

○ 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1) _____

○ 否 (2)

- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

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6. 私立医院

以下的一组问题涉及, 在新冠疫情期间以及疫情前后, 您使用新西兰私立医院的情况/经历。

Q6.1 自从您第一次抵达新西兰以来，您是否作为患者访问、使用过私立医院? 入院原因可以是心理或生理原因。

- ○ 是 (1)
- ○ 否 (2)
- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

Q6.2 您是否有过这样的经历? 您有需求, 却没有选择使用私立医院的服务设施。如果是这样，请给出理由？如果您没有过此类经历, 请选择 “我没有此类经历” 。(可多选)

**会说中文是指会说普通话、粤语、和/或客家话。*
***陪护人员可以是您的伴侣、儿子/女儿、儿媳/女婿、孙子/孙女、其他亲戚、家人朋友或邻居。*

- ☐ 医院没有会说中文的医护人员或翻译* (1)
- ☐ 费用过于昂贵/负担不起 (2)
- ☐ 交通不便, 无法去医院 (3)
- ☐ 无法抽出时间去医院 (4)
- ☐ 没有陪护人员**（包括由于陪护人员很难向工作单位请假, 而无法进行陪护） (5)
- ☐ 不想成为孩子们的负担 (6)
- ☐ 不熟悉使用访问新西兰私立医院的流程 (7)
- ☐ 无法尽快获得预约, 或无法内获得适当时段的预约 (8)

- [ ] 申请使用医院服务设施的人数量过多, 候选名单过长 (9)
- [ ] 居住地周围没有可用的私立医院设施 (10)
- [ ] 担心在私立医院就诊会感染新冠 (11)
- [ ] 其他 (请说明具体原因) (12) _____
- [ ] 我没有此类经历 (13)
- [ ] 不知道如何回答 (14)
- [ ] 拒绝回答 (15)

Q6.3 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用私立医院的医疗卫生服务设施?

- ○ 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1)
_____
- ○ 否 (2)
- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

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7. 医院急诊

接下来的问题涉及, 在新冠疫情期间以及疫情前后, 您使用公立医院急诊的情况/经历。

7.1 自从您第一次抵达新西兰以来，您是否因为自身健康/疾病的原因访问、使用过公立医院的急诊室?

- ○ 是 (1)
- ○ 否 (2)
- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

Q7.2 您访问、使用急诊室的原因是什么？请选择所有原因。(可多选)

- [ ] 病情严重/危及生命需要立即治疗 (1)
- [ ] 需要就诊的时间导致我选择急诊 (家医/医疗中心已经结束营业) (2)
- [ ] 家医让我去看急诊 (3)
- [ ] 健康热线或其他咨询热线建议我去看急诊 (4)
- [ ] 被救护车或直升机带去看急诊 (5)
- [ ] 费用便宜 (15)
- [ ] 比起家医, 我更相信医院的医疗水平 (7)
- [ ] 其他人推荐我使用急诊 (8)
- [ ] 预约看家医的等待时间太长 (9)
- [ ] 我没有常去/注册的家医 (10)
- [ ] 其他 (请说明具体原因) (11) _____
- [ ] 我没有此类经历 (12)
- [ ] 不知道如何回答 (13)
- [ ] 拒绝回答 (14)

Q7.3 回想一下你上一次去急诊就医的经历, 您在那次的候诊时间有多久?

- ○ 30 分钟以内 (1)
- ○ 30 分钟到 1 小时 (2)
- ○ 1 到 2 小时 (3)

- 2 到 3 小时 (4)
- 3 小时以上 (5)
- 我没有此类经历 (9)
- 不知道如何回答 (10)
- 拒绝回答 (11)

Q7.4 工作人员是否告知您候诊需要多长时间, 或者就诊时间是否会推迟。请做出评价？

- 非常好 (1)
- 好 (2)
- 一般 (3)
- 差 (4)
- 非常差 (5)
- 我没有此类经历 (6)
- 不知道如何回答 (7)
- 拒绝回答 (8)

Q7.5 您对候诊时间的长短有何看法/感想？

- 我不介意等待 (1)
- 我不得不等待 (2)
- 我没有此类经历 (3)
- 不知道如何回答 (4)
- 拒绝回答 (5)

Q7.6 您是否有过这样的经历? 您有需求, 却没有选择使用公立医院的急诊。如果是这样，请给出理由？如果您没有过此类经历, 请选择 “我没有此类经历” 。(可多选)

**会说中文是指会说普通话、粤语、和/或客家话。*
***陪护人员可以是您的伴侣、儿子/女儿、儿媳/女婿、孙子/孙女、其他亲戚、家人朋友或邻居。*

- [ ] 医院没有会说中文的医护人员或翻译* (1)
- [ ] 费用过于昂贵/负担不起 (2)
- [ ] 交通不便, 无法去医院急诊 (3)
- [ ] 无法抽出时间去急诊就医 (4)
- [ ] 没有陪护人员**（包括由于陪护人员很难向工作单位请假, 而无法进行陪护） (5)
- [ ] 不想成为孩子们的负担 (6)
- [ ] 不熟悉新西兰公立医院急诊室的就医流程 (7)
- [ ] 候诊时间太长 (8)
- [ ] 居住地周围没有可用的医院急诊服务 (9)
- [ ] 担心在急诊就诊会感染新冠 (10)
- [ ] 其他 (请说明具体原因) (11) _____
- [ ] 我没有此类经历 (12)
- [ ] 不知道如何回答 (13)
- [ ] 拒绝回答 (14)

Q7.7 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用医院急诊?

- ○ 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1)
  _____

○ 否 (2)

○ 不知道如何回答 (3)

○ 拒绝回答 (4)

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8. 专科医生

接下来的问题是关于在新冠疫情期间以及疫情前后, 专科医生的访问、使用情况。在新西兰, 专科医生是指在特定医学领域完成高级培训的医生。问卷中所说的专科医生, 是指人们因为特定健康状况、疾病问题、或专科服务需求, 去看的那类医生。这有别于家庭医生。您可能已经在医院门诊或专科诊所看过专科医生了。需要注意的是, 以下问题并不包括您在住院治疗期间看过的任何专科医生的经历。

Q8.1 自从您第一次抵达新西兰以来， 您出于自身的健康/疾病需求看过那些专科医生? (可多选)

- 如果受访者看过的专科医生并没有出现在列表中，请选择“其他”并给出具体说明。如果受访者没有看过任何专科医生，则选择为“没有看过任何专家”。

☐ 皮肤科专科医生 (1)

☐ 神经科专科医生 (2)

☐ 心脏病专科医生 (3)

☐ 血液科专科医生 (4)

☐ 内分泌科专科医生 (5)

☐ 呼吸内科专科医生 (6)

☐ 免疫科专科医生（过敏专科医生） (7)

☐ 肿瘤科专科医生 (8)

☐ 普通外科专科医生 (9)

☐ 骨科专科医生 (10)

☐ 眼科专科医生 (11)

- [ ] 耳鼻喉专科医生 (12)
- [ ] 泌尿科专科医生 (13)
- [ ] 妇科专科医生 (14)
- [ ] 老年科专科医生 (15)
- [ ] 普通内科专科医生 (16)
- [ ] 精神科专科医生 (17)
- [ ] 其他 (请具体说明) (18) _____
- [ ] 没有看过任何专科医生 (19)
- [ ] 不知道如何回答 (20)
- [ ] 拒绝回答 (21)

Q8.2 自从您第一次抵达新西兰以来，您是否有过回避访问专科医生的经历? 如果是这样, 请给出理由。如果您没有过此类经历, 请选择 “我没有此类经历” 。

*会说中文是指会说普通话、粤语、和/或客家话。
**陪护人员可以是您的伴侣、儿子/女儿、儿媳/女婿、孙子/孙女、其他亲戚、家人朋友或邻居。

- [ ] 没有会说中文的专科医生* (1)
- [ ] 费用过于昂贵/负担不起 (2)
- [ ] 交通不便, 无法去看专科医生 (3)
- [ ] 无法抽出时间去看专科医生 (4)
- [ ] 没有陪护人员**（包括由于陪护人员很难向工作单位请假, 而无法进行陪护） (5)

☐ 不想成为孩子们的负担 (6)

☐ 不熟悉在新西兰访问使用专科医生服务的流程 (7)

☐ 无法尽快或者在适当的时间内获得预约 (8)

☐ 申请看专科医生的人数量过多, 候选名单过长 (9)

☐ 居住地周围没有可用的专科医疗服务设施 (10)

☐ 担心就诊时会感染新冠 (11)

☐ 其他 (请说明具体原因) (12) _____

☐ 我没有此类经历 (13)

☐ 不知道如何回答 (14)

☐ 拒绝回答 (15)

Q8.3 当您无法获得专科医生的服务的时候，您接下来选择做什么？(可多选)

☐ 什么都不做 (1)

☐ 过段时间再去看专科医生 (2)

☐ 回到原籍国/原居地, 并使用那里的专科医生的医疗帮助/治疗 (请具体说明您等了多久才决定回原籍国/原居地寻求专科医生的医疗帮助/治疗? 以及您为什么选择回原籍国/原居地寻求专科医生的医疗帮助/治疗？) (3) _____

☐ 其他 (请具体说明) (4) _____

☐ 我没有此类经历 (5)

☐ 不知道如何回答 (6)

☐ 拒绝回答 (7)

Q8.4 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用专科医生?

○ 是 (具体说明新冠疫情如何妨碍您使用此类医疗机构) (1)
_____

○ 否 (2)

○ 不知道如何回答 (3)

○ 拒绝回答 (4)

End of Block: Questionnaire Part 2

Start of Block: Questionnaire Part 3

Part 3 其他医疗卫生机构
其他医疗卫生机构是指初级、二级、三级医疗卫生机构以外的医疗卫生机构 (新西兰卫生部, 2020b) 。

9. 其他医疗卫生工作者
以下一组问题涉及, 在新冠疫情期间以及疫情前后, 您使用新西兰的其他医疗卫生机构的情况/经历。需要注意的是, 以下问题并不包括您在住院治疗期间看过的任何此类医疗卫生工作人员的经历。

Q9.1 自您第一次抵达新西兰以来，您出于自身健康/疾病的原因访问过哪些其他医疗卫生工作者? (可多选)

- 如果受访者看过的专科医生并没有出现在列表中，请选择“其他”并给出具体说明。如果受访者没有看过任何专科医生，则选择为“没有看过任何专家”。

☐ 药剂师 (1)

☐ 理疗师 (2)

☐ 脊椎按摩师 (3)

☐ 整骨师 (4)

☐ 营养配餐师 (5)

- [ ] 配镜师或验光师 (6)
- [ ] 职业治疗师 (7)
- [ ] 社会工作者 (8)
- [ ] 心理学家或顾问 (9)
- [ ] 中医 (10)
- [ ] 针灸师 (11)
- [ ] 中式按摩治疗师 (12)
- [ ] 牙医 (13)
- [ ] 其他 (请具体说明) (14) _____
- [ ] 没有访问过任何其他医疗卫生机构的工作人员 (15)
- [ ] 不知道如何回答 (16)
- [ ] 拒绝回答 (17)

Q9.2 您是否有过这样的经历? 您有需求, 却没有选择使用其他医疗卫生服务机构。如果是这样，请给出理由？如果您没有过此类经历, 请选择 “我没有此类经历” 。(可多选)

**会说中文是指会说普通话、粤语、和/或客家话*
***陪护人员可以是您的伴侣、儿子/女儿、儿媳/女婿、孙子/孙女、其他亲戚、家人朋友或邻居。*

- [ ] 此类机构没有会说中文的工作人员* (1)
- [ ] 费用过于昂贵/负担不起 (2)
- [ ] 交通不便, 无法去此类医疗卫生机构 (3)

- [ ] 无法抽出时间去访问这些机构 (4)
- [ ] 没有陪护人员**（包括由于陪护人员很难向工作单位请假, 而无法进行陪护） (5)
- [ ] 不想成为孩子们的负担 (6)
- [ ] 不熟悉在新西兰使用此类医疗卫生设施的流程 (7)
- [ ] 无法尽快或者在适当的时间内获得预约 (8)
- [ ] 当我想使用这些设施的时候工作人员已经下班了 (9)
- [ ] 居住地周围没有可用的此类医疗卫生设施 (10)
- [ ] 担心就诊会感染新冠 (11)
- [ ] 其他 (请说明具体原因) (12) _____
- [ ] 我没有此类经历 (13)
- [ ] 不知道如何回答 (14)
- [ ] 拒绝回答 (15)

Q9.3 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用其他医疗卫生服务机构?

- ○ 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1) _____
- ○ 否 (2)
- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

End of Block: Questionnaire Part 3

Start of Block: Questionnaire Part4

Part 4 新冠相关的医疗卫生和支持机构
新冠相关医疗卫生机构包括, 新冠筛查检测、隔离设施、疫苗接种等。新冠相关支持机构包括健康热线以及其他咨询热线等。

10. 新冠相关的医疗卫生和支持机构
以下的一组问题涉及, 在新冠疫情期间, 您因为自身健康、疾病原因, 使用新西兰的新冠相关医疗卫生以及支持机构的情况/经历。

Q10.1 在新冠疫情期间(2020 年至今)，您是否因为自身健康/疾病的原因访问、使用过新冠相关的医疗卫生以及支持机构?

- ○ 是 (1)
- ○ 否 (2)
- ○ 不知道如何回答 (3)
- ○ 拒绝回答 (4)

Q10.2 您访问、使用过哪些新冠相关的医疗卫生以及支持服务机构? (可多选)

- ☐ 新冠筛查检测 (1)
- ☐ 新冠隔离设施 (2)
- ☐ 新冠疫苗接种 (3)
- ☐ 拨打健康热线 (Healthline) 或其他咨询热线以获得新冠相关信息及建议 (4)
- ☐ 其他 (请具体说明) (5) _____
- ☐ 没有使用过任何新冠相关的医疗卫生机构以及支持服务机构 (7)
- ☐ 不知道如何回答 (8)
- ☐ 拒绝回答 (9)

Q10.3 在您预约的就诊时间到了之后, 您又等了多久才最终访问/使用此类机构?

- 我没有预约 (1)
- 我在预约时间就诊 (2)
- 等了 5 到 15 分钟 (3)
- 等了 15 到 30 分钟 (4)
- 等了超过 30 分钟 (5)
- 我没有此类经历 (6)
- 不知道如何回答 (7)
- 拒绝回答 (8)

Q10.4 您对候诊/等候时间的长短有何看法/感想?

- 我不介意等待 (1)
- 我不得不等待 (2)
- 我没有此类经历 (3)
- 不知道如何回答 (4)
- 拒绝回答 (5)

Q10.5 如何评价您在此类机构接受到的服务？

- 非常好 (1)
- 好 (2)
- 一般 (3)
- 差 (4)
- 非常差 (5)
- 我没有此类经历 (6)

- ○ 不知道如何回答 (7)
- ○ 拒绝回答 (8)

Q10.6 工作人员是否为您提供了足够的信息, 来帮助您在疫情期间处理健康问题？

- ○ 是的，提供了足够的信息 (1)
- ○ 是，提供了一定程度的信息 (2)
- ○ 没有提供任何信息 (3)
- ○ 我没有此类经历 (4)
- ○ 不知道如何回答 (5)
- ○ 拒绝回答 (6)

Q10.7 在新冠疫情期间，您是否有过这样的经历? 当您需要使用新冠相关医疗卫生以及支持机构的时候，却没有选择访问使用这类设施。如果是这样，请给出理由？如果您没有过此类经历, 请选择 “我没有此类经历” 。(可多选)

**会说中文是指会说普通话、粤语、和/或客家话。*
***陪护人员可以是您的伴侣、儿子/女儿、儿媳/女婿、孙子/孙女、其他亲戚、家人朋友或邻居。*

- ☐ 担心感染新冠的风险 (1)
- ☐ 没有会说中文的工作人员* (2)
- ☐ 费用过于昂贵/负担不起 (3)
- ☐ 交通不便, 无法去此类机构 (4)
- ☐ 没有陪护人员**（包括由于陪护人员很难向工作单位请假, 而无法进行陪护） (5)
- ☐ 不想成为孩子们的负担 (6)
- ☐ 不熟悉新冠疫情期间使用访问、使用此类机构的流程 (7)

- [ ] 无法抽出时间去使用这些机构 (8)
- [ ] 漫长的候诊/等待时间 (9)
- [ ] 当我想使用这些设施的时候工作人员已经下班了 (10)
- [ ] 在疫情期间，居住地周围没有可用的新冠相关的医疗卫生和支持机构 (11)
- [ ] 其他 (请说明具体原因) (12) _____
- [ ] 我没有此类经历 (13)
- [ ] 不知道如何回答 (14)
- [ ] 拒绝回答 (15)

Q10.8 当您无法访问/使用 新冠相关医疗卫生或支持服务机构时，您接下来选择做什么？(可多选)

- [ ] 什么都不做 (1)
- [ ] 过几天再去 (2)
- [ ] 去位于其他地区的此类机构 (3)
- [ ] 拨打健康热线或其他咨询热线号码寻求建议和帮助 (4)
- [ ] 其他 (请具体说明) (5) _____
- [ ] 我没有此类经历 (6)
- [ ] 不知道如何回答 (7)
- [ ] 拒绝回答 (8)

Q10.9 您通过哪些途径了解, 当地可用的新冠相关的医疗卫生服务机构? (可多选)

- [ ] 电视、广播、网路, 社交媒体 (如微信、QQ、脸书等) (1)
- [ ] 家医 (2)
- [ ] 家人、朋友 (3)
- [ ] 其他途径 (请具体说明) (4) _____
- [ ] 不知道如何回答 (5)
- [ ] 拒绝回答 (6)

Q10.10 请进一步说明, 新冠疫情是否妨碍您在遇到健康问题的时候访问、使用新冠相关的医疗卫生服务设施?

- [ ] 是 (请具体说明新冠疫情如何妨碍您使用此类医疗机构) (1) _____
- [ ] 否 (2)
- [ ] 不知道如何回答 (3)
- [ ] 拒绝回答 (4)

End of Block: Questionnaire Part4

Start of Block: Pilot survey evaluation

访者对参与调查问卷的体验的评估

请您花几分钟时间回答以下问题, 这些问题涉及您对本次试点调查问卷的体验。

Q1 参与调查问卷的体验的评估

	非常不满意 (21)	不满意 (22)	一般 (23)	满意 (24)	非常满意 (25)
您对完成问卷所花费的时间是否满意? (6)	○	○	○	○	○

您对问卷的问题数量是否满意? (7)	○	○	○	○	○
您对题目的复杂程度是否满意 (是否能读懂题目)? (8)	○	○	○	○	○

Q2 关于参与试点调查，您还有什么其他意见吗？您认为我们可以在哪些方面进行改进?

_____

Q3 您是否从以下这些社会组织/群体中听到了这项研究?

- ○ 亚洲健康联络中心（TANI） (1)
- ○ 华人社区服务中心 (CNSST) (2)
- ○ 纽西兰华联总会 (NZCA) (3)
- ○ 亚洲家庭服务中心 (Asian Family Services) (4)
- ○ 新西兰关注长者中心 (Age Concern New Zealand) (5)
- ○ 当地华人社区 (6)
- ○ 脸书 (Facebook)/脸书群 (7)
- ○ 微信/微信群 (8)
- ○ 其他（请注明） (9) _____
- ○ 没有从任何社会组织/群体中获得这项研究的信息 (10)

Q4 您或将研究推荐给您的家人/朋友是否属于该社会群体?

- ○ 是 (1)
- ○ 否 (2)

Q5 您是否从以下媒体那里听说过这项调查吗?

- ○ 脸书 (Facebook) 广告/帖子 (1)

- ○ 微信广告/帖子 (2)
- ○ 其他社交媒体（请注明） (3) _____
- ○ 电子邮件 (4)
- ○ 电台 (5)
- ○ 电视 (6)
- ○ Skykiwi 网站 (7)
- ○ 当地社区 (8)
- ○ 当地图书馆 (9)
- ○ 口口相传 (10)
- ○ 其他（请注明） (11) _____
- ○ 没有从任何媒体中获得这项研究的信息 (12)

End of Block: Pilot survey evaluation

此调查由奥克兰理工大学道德委员会于 2021-12-07 批准，AUTEC 参考编号 20/234。

Appendix D: Component Loadings

Appendix D represents the correlation coefficients between specified dimensions (Dimension 1- Quality of healthcare, Dimension 2 - Unavailable/inaccessible, Dimension 3 - Alternatives, and Dimension 4 - Socio-cultural barriers) and the original items/variables. As survey question Q2.8 and Q2.9 allows respondents to choose more than one options, each option is then seen as an individual item when conduct CATPCA analysis.

Item/variable		Component Matrix				Rotated Component Matrix			
		Dimension				Dimension			
		1	2	3	4	1	2	3	4
Q2.1	Have seen a GP or not	**0.994**	-0.097	-0.031	-0.013	**0.998**	0.047	0.005	0.013
Q2.2	Waiting time (after the scheduled appointment time) to see a GP	**0.994**	-0.099	-0.032	-0.013	**0.998**	0.045	0.005	0.014
Q2.3	Evaluation of the waiting time	**0.994**	-0.097	-0.031	-0.013	**0.998**	0.047	0.005	0.013
Q2.4	Understood GP's explanation on health conditions/treatments	**0.994**	-0.101	-0.032	-0.014	**0.999**	0.043	0.005	0.013
Q2.5	Involved in decision-making	**0.994**	-0.099	-0.032	-0.014	**0.998**	0.045	0.005	0.013
Q2.6	Be treated in a respect and dignity way	**0.994**	-0.100	-0.031	-0.014	**0.999**	0.044	0.006	0.013
Q2.7	Had confidence and trust in GP	**0.994**	-0.098	-0.031	-0.013	**0.998**	0.047	0.005	0.013
Q2.8-1	Barrier to see a GP - Chinese-speaking GP was unavailable	0.051	-0.081	-0.300	**0.491**	0.060	-0.124	-0.115	**0.555**
Q2.8-3	Barrier to see a GP - No transport	0.018	-0.055	-0.246	**0.654**	0.016	-0.064	-0.040	**0.696**
Q2.8-5	Barrier to see a GP - Lack of support person	0.032	0.012	-0.248	**0.731**	0.018	0.007	-0.052	**0.771**
Q2.8-6	Barrier to see a GP - Didn't want to be a burden	0.013	-0.337	-0.002	**0.363**	0.048	-0.257	0.224	**0.357**
Q2.8-7	Barrier to see a GP - Unfamiliar with the services in NZ	0.016	0.024	-0.182	**0.401**	0.008	0.001	-0.076	**0.435**
Q2.8-10	Barrier to see a GP - Could see a doctor via telehealth, but prefer to see the GP in person	0.046	-0.130	-0.166	**-0.368**	0.084	-0.221	-0.177	**-0.308**

Q2.8-8	Barrier to see a GP - Couldn't get an appointment soon enough	0.258	**0.720**	0.150	0.253	0.140	**0.775**	-0.113	0.195
Q2.8-9	Barrier to see a GP - It was after-hours	0.157	**0.486**	0.411	0.126	0.064	**0.638**	0.185	0.007
Q2.8-11	Barrier to see a GP - Couldn't get in touch with the doctor	0.125	**0.396**	0.357	-0.029	0.052	**0.513**	0.139	-0.127
Q2.8-12	Barrier to see a GP - The GP service in the area was closed during the lockdown	0.123	**0.394**	0.083	-0.224	0.070	**0.377**	-0.146	-0.243
Q2.8-14	Not experienced any barriers	-0.007	**-0.839**	-0.164	-0.196	0.123	**-0.843**	0.162	-0.130
Q2.9-2	Alternative when unable to see a GP - See the GP later	0.384	**0.717**	-0.231	-0.069	0.295	**0.601**	-0.521	-0.012
Q2.9-9	Alternative when unable to see a GP - not experienced any barriers	-0.037	**-0.564**	-0.265	-0.160	0.059	**-0.637**	-0.033	-0.074
Q2.9-3	Alternative when unable to see a GP - Went to an Emergency Department at public hospital	0.167	0.239	**0.670**	0.011	0.098	0.507	**0.489**	-0.169
Q2.9-4	Alternative when unable to see a GP - Went to an after-hours or Accident and Medical centre	0.042	-0.309	**0.714**	0.158	0.042	0.032	**0.793**	-0.031
Q2.9-5	Alternative when unable to see a GP - Phoned an ambulance	0.001	-0.493	**0.698**	0.207	0.027	-0.140	**0.867**	0.023
Q2.9-6	Alternative when unable to see a GP - Went to alternative medical services	0.057	-0.157	**0.557**	0.063	0.048	0.097	**0.569**	-0.083
Q2.9-7	Alternative when unable to see a GP - Phoned Healthline or another hotline for advice	-0.005	-0.415	**0.511**	0.098	0.023	-0.158	**0.645**	-0.034
Negligible correlation ($\lvert r \rvert < 0.3$)									
Q2.8-4	Barrier to using GP services - Couldn't spare the time	0.020	0.053	-0.144	-0.045	0.021	-0.012	-0.159	-0.006
Q2.8-13	Barrier to using GP services - Other	0.038	0.173	0.019	-0.072	0.015	0.160	-0.074	-0.077

Q2.9-8	Alternative when unable to see a GP - Something else	0.053	0.226	0.133	-0.158	0.016	0.257	0.009	-0.088
No data									
Q2.8-2	Barrier to see a GP - Services were expensive/ not affordable	-	-	-	-	-	-	-	-
Q2.9-1	Alternative when unable to see a GP - Nothing	-	-	-	-	-	-	-	-
Variable Principal Normalization.									

The rule of thumb for correlation coefficient (r):

- $0 \leq |r| < 0.3$ Negligible correlation
- $0.3 \leq |r| < 0.5$ Weak correlation
- $0.5 \leq |r| < 0.7$ Moderate correlation
- $0.7 \leq |r| < 0.9$ Strong correlation
- $0.9 \leq |r| < 1$ Very strong correlation
- $1 = |r|$ Perfect correlation

Appendix E: Transcribe Confidentiality Agreement

Project title: ***Understanding recently arrived Chinese late-life migrants' experiences of healthcare access and utilisation in Aotearoa New Zealand during and beyond the COVID-19 pandemic: a mixed-methods study***

Project Supervisor: ***Doctor Priya Saravanakumar & Professor Eleanor Holroyd***

Researcher: ***Sherry Zhu***

- ○ I understand that the interviews meetings or material I will be asked to translate is confidential.
- ○ I understand that the content of the interviews meetings or material can only be discussed with the researchers.
- ○ I will not keep any copies of the translations nor allow third parties access to them.

Translator's signature: 

Translator's Name: Laura Lee

Translator's Contact Details (if appropriates):

……..…

Date: 10/11/2020

Project Supervisor's Contact Details (if appropriate):

……..…

Approved by the Auckland University of Technology Ethics Committee on 24/08/2020 AUTEC Reference number 20/234

Note: The Translator should retain a copy of this form.

Question No	Question	Response options	Comments
Primary health care services			
1.1	Since you first arrived in NZ, do you have a GP clinic or medical centre that you usually go to when you are feeling unwell or are injured?	1 = Yes 2 = No K = Don't know R = Refused	Adapted from 2017/18 New Zealand Health Survey (NZHS) – question A2.01 Added the time frame "*Since you first arrived in NZ*" to the original question, in order to consistent with the research objective(s).
1.2	What sort of health care service is this? (Multiple response possible) **According to Ministry of Health [MOH] (2020a), Accident and Medical Centres, GP clinics located within a hospital, and air force / army / navy GPs should be coded as 'A GP clinic, medical centre or family practice'.* **Please choose the most "usual" place you go to.* ** When using the 'Other' option please specify it (e.g., ED, prison GPs, company GPs or rest home GPs)*	1 = A GP clinic, medical centre or family practice (include GP clinics located within a hospital, and air force / army / navy GPs) 2 = A clinic that is after-hours only – not an Emergency Department at a public hospital 77 = Other [Specify] _____ A = Don't apply K = Don't know R = Refused	Original question from 2017/18 NZHS – question A2.02
1.3	Since you first arrived in NZ, has there been a time when you wanted to see a GP, nurse, or other health care worker at your usual medical centre, within the next 24 hours, but they were unable to see you? If so, why? If not, please select the option "Don't apply" (Multiple responses possible) ** If the reason that the person could not see the GP was because it was a weekend, the response should be coded as 'another reason.'*	1 = There weren't any appointments 2 = The time offered didn't suit me 3 = The appointment was with a doctor I didn't want to see 4 = I could have seen a nurse but I wanted to see a doctor 5 = The GP clinic/medical centre that I usually go to was closed during the lockdown (due to COVID-19 outbreak)	Combine two questions (A2.06 & A2.07) from 2017/18 NZHS Modified the time frame in the original question "*in the past 12 months*" into "*Since you first arrived in NZ*," to consistent with the research objective(s). Added option 5 "*The GP clinic/medical centre that I usually go to was closed during the lockdown (due to COVID-19 outbreak)*" to consistent with the research objective(s).

		6 = Another reason [Specifies] _____ A = Don't apply K = Don’t know R = Refused	Added response option 6 *“Another reason*,” to collect more information from participants.
1.4 (Open hours - enabler)	Are the current opening hours of your usual medical centre convenient to you?	1 = Yes 2 = No K = Don’t know R = Refused	Original question from 2017/18 NZHS – question A2.08
1.5 (Open hours - barrier)	Which of the following additional opening hours would make it easier for you to see or speak to someone at your usual medical centre? Please say all that apply. (Multiple responses possible)	1 = Earlier in the morning on weekdays (e.g., before 8am) 2 = Later in the evening on weekdays (e.g., after 5pm) 3 = On a Saturday, or longer hours on a Saturday 4 = On a Sunday 5 = Others [Specify] _____ K = Don’t know R = Refused	Adapted from 2017/18 NZHS – question A2.08a Added response option 5 *“Others [Specify],*” to collect more information from participants.
1.6 (Methods to access “usual” primary health services)	When you tried to contact your usual medical centre about your own health, how did you do it? This includes contacting them to book an appointment, ask a medical question or request a repeat prescription. **[Multiple responses possible]**	1 = Over the phone 2 = Email 3 = In person (e.g., going into the medical centre) 4 = Text or SMS 5 = Online service or patient portal (e.g., ManageMyHealth, Health 365) 77 = Other [Specify] _____ A = Don't apply K = Don’t know R = Refused	Original question from 2017/18 NZHS – question A2.09
1.7 (Evaluation of the service)	How helpful have you found the receptionists at your usual medical centre?	1 = Very helpful 2 = Helpful 3 = Neither helpful nor unhelpful	Adapted from 2017/18 NZHS – question P2.11a

		4 = Unhelpful 5 = Very unhelpful A = Don't apply K = Don't know R = Refused	Deleted the time frame "*in the last 12 months*" in the original question.
1.8 (Evaluation of the service)	Have staff at your usual medical centre given you enough information to help you manage your health concerns? **If respondent has not had any health concerns or required any information, code as "Not applicable."*	1 = Yes, definitely 2 = Yes, to some extent 3 = No, not at all 4 = Not applicable A = Don't apply K = Don't know R = Refused	Adapted from 2017/18 NZHS – question P2.11d Deleted the time frame "*in the last 12 months*" in the original question.
1.9 (Evaluation of the service)	Overall, how satisfied are you with the care you got at your usual medical centre? This includes all staff, not just the GP. **If respondent has not had any health concerns or required any information, code as "Not applicable."*	1 = Very satisfied 2 = Satisfied 3 = Neither satisfied or dissatisfied 4 = Dissatisfied 5 = Very dissatisfied A = Don't apply K = Don't know R = Refused	Adapted from 2017/18 NZHS – question P.2.11b Deleted the time frame "*in the last 12 months*" in the original question.
1.10 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from visiting primary health services (e.g. a GP clinic or medical centre) when you had a health problem?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**New question** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).
General practitioners			
2.1	Since you first arrived in NZ, have you seen a GP, or been visited by a GP, about your own health? By health, I mean your mental and emotional health as well as your physical health.	1 = Yes 2 = No K = Don't know R = Refused	Adapted from 2017/18 NZHS – question A2.12 Modified the time frame from "*in the past 12 months*" to "*since you first arrived in NZ.*" In order to consistent with the research objective(s).

2.2 (Waiting time)	Thinking back to the last time you saw a GP about your own health, how long after your scheduled appointment time did you wait to be seen?	1 = I didn't have an appointment time 2 = I was seen at my appointment time 3 = 5 minutes or less 4 = 6 to 15 minutes 5 = 15 to 30 minutes 6 = more than 30 minutes K = Don't know R = Refused	**New question** which was developed based on the result of phase one – ***Theme one "It is the Little Things that Matter the Most"*** (code one *"Time matters in accessing and utilisation primary healthcare services"* under the sub-theme *"Time Matters to Healthcare Access and Utilisation").* The format of the question and the respond options were adapted from 2017/18 NZHS – question P.2.74
2.3 (Waiting time)	The last time you saw a GP about your own health, how did you feel about how long you had to wait?	1 = I didn't mind the wait 2 = I had to wait a bit too long 3 = I had to wait far too long A = Don't apply K = Don't know R = Refused	**New question** which was developed based on the result of phase one – ***Theme one "It is the Little Things that Matter the Most"*** (code one *"Time matters in accessing and utilisation primary healthcare services"* under the sub-theme *"Time Matters to Healthcare Access and Utilisation").* The format of the question and the respond options were adapted from 2017/18 NZHS – question P.2.76
2.4 (Evaluation of the GP service)	Thinking back to the last time you saw a GP. How good was the doctor at explaining your health conditions and treatments in a way that you could understand?	1 = Very good 2 = Good 3 = Neither good nor bad 4 = Poor 5 = Very poor A = Doesn't apply K = Don't know R = Refused	Original question from 2017/18 NZHS – question A2.22
2.5 (Evaluation of the GP service)	Thinking back to the last time you saw a GP. How good was the doctor at involving you in decisions about your care, such as discussing different treatment options?	1 = Very good 2 = Good 3 = Neither good nor bad 4 = Poor 5 = Very poor A = Doesn't apply	Original question from 2017/18 NZHS – question A2.23

		K = Don't know R = Refused	
2.6 (Evaluation of the GP service)	Thinking back to the last time you saw a GP. How good was the doctor at treating you with respect and dignity?	1 = Very good 2 = Good 3 = Neither good nor bad 4 = Poor 5 = Very poor A = Doesn't apply K = Don't know R = Refused	Original question from 2017/18 NZHS – question A2.24
2.7 (Evaluation of the GP service)	Did you have confidence and trust in the GP you saw?	1 = Yes, definitely 2 = Yes, to some extent 3 = No, not at all K = Don't know R = Refused	Original question from 2017/18 NZHS – question A3.28
2.8 (Barriers to accessing GP services)	Has there been any time when you need to see a GP about your own health, but didn't get to see any doctor at all? If so, why? If not, please select the option "Don't apply." (Multiple responses possible) **Chinese-speaking GP means the GP who can speak Mandarin, Cantonese, and/or Hakka.* ******* *A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*	1 = Chinese-speaking GP was unavailable* 2 = Services were expensive/ not affordable 3 = Had no transport to get there 4 = Couldn't spare the time 5 = Lack of support person** (include support person was difficult to take time off work) 6 = Didn't want to be a burden 7 = Unfamiliar with the GP services in NZ 8 = Couldn't get an appointment soon enough/at a suitable time 9 = It was after-hours 10 = I could have seen a doctor via telehealth but I wanted to see he/she in person 11 = Couldn't get in touch with the doctor	Combine four questions (A2.33, A2.33b, A2.34, A2.34a) from 2017/18 NZHS to explore the barriers to accessing/using GP services. Modified the time frame in the original question "*in the past 12 months*" into "*Since you first arrived in NZ*," to consistent with the research objective(s). Rewrote A2.33 as option **2** "*Services were expensive/ not affordable*" (consistent with sub-theme – *Attitudes towards Financial Consideration* in Theme Three). Rewrote A2.34 as option **3** "*Had no transport to get there*" (consistent with sub-theme *Location of the Healthcare Services in* Theme One).

		12 = The GP service in the area was closed during the lockdown 77 = Other [specify] _____ A = Don't Apply K = Don't know R = Refused	Rewrote A2.34a as option **4** "*Couldn't spare the time*" Rewrote A2.33b as option **5** "*Lack of support person (include support person was difficult to take time off work)*." More response options were developed based on the result of phase one, to ensure the question was culturally specific. Based on Theme One ***"It is the Little Things that Matter the Most,"*** this study developed options: **1** "Chinese-speaking GP was unavailable" (based on sub-theme *Availability of Chinese-speaking Healthcare Practitioners*); **8** "Couldn't get an appointment soon enough/at a suitable time," **9** "It was after-hours," & **11** "Couldn't get in touch with the doctor" (based on sub-theme *Time Matters to Healthcare Access and Utilisation*). Based on Theme Three ***Cultural Beliefs and Attitudes towards Healthcare Access and Utilisation***, the study developed option: **6** "Didn't want to be a burden" (based on sub-theme *"Don't Want to Be a Burden"*). Based on Theme Four ***Desire for Healthcare Information***, the study developed options: **7** "Unfamiliar with the GP services in NZ" & **10** "I could have seen a doctor via telehealth but I wanted to see he/she in person"

			Add new options **12** "The GP service in the area was closed during the lockdown" to collected the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).
2.9 (Alternative behaviours)	When you were not able to see a GP, what did you do instead? (Multiple responses possible)	1 = Nothing 2 = Went to see the GP at a later date 3 = Went to an Emergency Department at public hospital 4 = Went to an after-hours or Accident and Medical centre 5 = Phoned an ambulance 6 = Went to see alternative medical services (e.g., Chinese Traditional Medicine, Chinese Acupuncture, Chinese Massage, etc.) 7 = Phoned Healthline or another phone number for advice 77 = Something else [specify] _____ A = Don't apply K = Don't know R = Refused	**New question** which was developed to collect the data of participants' alternative healthcare-seeking behaviours. The response options were developed based on the result of phase one, to ensure the question was culturally specific.
2.10 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from visiting or talking to a GP when you had a health problem?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**New question** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).
Nurses at GP clinics and medical centres			
3.1	Since you first arrived in NZ, have you seen a nurse at a GP clinic or medical centre, about your own health? By health, I mean your mental and emotional health as well as your physical health.	1 = Yes, I see a nurse as part of a GP consultation (This includes seeing the nurse before or after seeing the GP).	Adapted from 2017/18 NZHS – question A2.41 Modified the time frame "in the last 12 months" to "since you first arrived in NZ)

		2 = Yes, I see a nurse without seeing a GP at the same visit. 3 = No K = Don't know R = Refused	Wrote the response options based on the result of phase one.
3.2 (Evaluation of the nursing service at GP clinic/Medical Centre)	Overall, how satisfied are you with the care you got from a nurse at the PG clinic or medical centre?	1 = Very satisfied 2 = Satisfied 3 = Neither satisfied or dissatisfied 4 = Dissatisfied 5 = Very dissatisfied A = Don't apply K = Don't know R = Refused	Adapted from 2017/18 NZHS – question P2.51b Rewrote the question to fit the purpose of the research objective(s). The format of the question and the respond options were adapted from 2017/18 NZHS – question P.2.11b
3.3 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from visiting or talking to a nurse at a GP clinic or medical centre?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**New question** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).
After-hours medical care			
4.1	Since you first arrived in Aotearoa NZ, have you visit an after-hour medical centre when you had a health problem? Do not include visits to an emergency department at a public hospital.	1 = Yes 2 = No K = Don't know R = Refused	Adapted from 2017/18 NZHS – question A2.52 Modified the time frame in the original question "*in the past 12 months*" into "*Since you first arrived in NZ*," to consistent with the research objective(s). Rewrote the respond options. Delated the visiting time & added the "Yes" or "No" options.
4.2 (Barriers to accessing after-hour care services)	When you needed support for a health problem outside regular office hours, what was the reason you did not visit an after-hour medical centre? (Multiple responses possible)	1 = Chinese-speaking caregiver was unavailable* 2 = Services were expensive/ not affordable 3 = Had no transport to get there 4 = Couldn't spare the time	Combine two questions (A2.59 & A2.60) from 2017/18 NZHS to explore the barriers to accessing/using after-hour care services. Adopted A2.59 as option **2** "*Services were expensive/ not affordable*" (consistent with

	** Chinese-speaking caregiver means the caregiver who can speak Mandarin, Cantonese, and/or Hakka.* *** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*	5 = Lack of support person** (include support person was difficult to take time off work) 6 = Didn't want to be a burden 7 = Unfamiliar with the after-hour care services in NZ 8 = The after-hour medical centre in the area was closed during the lockdown (due to COVID-19 outbreak) 77 = Other [specify] _____ A = Don't apply K = Don't know R = Refused	sub-theme – *Attitudes towards Financial Consideration* in Theme Three). Adopted A2.60 as option **3** "Had no transport to get there" (consistent with sub-theme *Location of the Healthcare Services in* Theme One). More response options were developed based on the result of phase one, to ensure the question was culturally specific. Based on Theme One ***"It is the Little Things that Matter the Most,"*** this study developed option **1** "Chinese-speaking GP was unavailable" (based on sub-theme *Availability of Chinese-speaking Healthcare Practitioners*). Based on Theme Three ***Cultural Beliefs and Attitudes towards Healthcare Access and Utilisation***, the study developed option: **6** "Didn't want to be a burden" (based on sub-theme *"Don't Want to Be a Burden"*). Based on Theme Four ***Desire for Healthcare Information***, the study developed options: **7** "Unfamiliar with the after-hour care services in NZ" Add new options **8** "The after-hour medical centre in the area was closed during the lockdown" to collected the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).

			To consistent with the pilot survey question Q2.8 (see above), this study also added option **4** "*Couldn't spare the time*" & **5** "*Lack of support person (include support person was difficult to take time off work)*."
4.3 (Alternative behaviours)	When you were not able to visit an after-hour medical centre, what did you do instead? (Multiple responses possible)	1 = Nothing 2 = Went to an Emergency Department at public hospital 3 = Phoned an ambulance 4 = Phoned Healthline or another phone number for advice 77 = Something else [specify] _____ A = Don't apply K = Don't know R = Refused	**New question** which was developed to collect the data of participants' alternative healthcare-seeking behaviours. The response options were developed based on the result of phase one, to ensure the question was culturally specific.
4.4 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from visiting an after-hour medical centre when you had a health problem?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**New question** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).

Secondary & tertiary health care services			
Question No	**Question**	**Response options**	**Comments**
Public hospital			
5.1	Since you first arrived in NZ, have you yourself used a service at, or been admitted to, a public hospital as a patient? This could have been for a physical or a mental health condition.	1 = Yes 2 = No K = Don't know R = Refused	Adapted from 2017/18 NZHS - question A2.61 Modified the time frame in the original question "*in the past 12 months*" into "*Since you first arrived in NZ*," to consistent with the research objective(s).

5.2 (Barriers to accessing public hospital)	Since you first arrived in Aotearoa NZ, was there a time when you had a medical problem but did not use a service at, or been admitted to, a public hospital as a patient? If so, why? If not, please select the option "Don't apply" (Multiple responses possible) ** Chinese-speaking practitioners mean the practitioners who can speak Mandarin, Cantonese, and/or Hakka.* *** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*	1 = Lack of Chinese-speaking practitioners and/or translators in hospital services* 2 = Services were expensive/ not affordable 3 = Had no transport to get there 4 = Couldn't spare the time 5 = Lack of support person** (include support person was difficult to take time off work) 6 = Didn't want to be a burden 7 = Unfamiliar with the public hospital services in NZ 8 = Couldn't get an appointment soon enough/at a suitable time 9 = Long waiting list 10 = Lack of available hospital services in the area 11 = Concerned about the risk of contracting COVID 77 = Other [specify] _____ A = Don't apply K = Don't know R = Refused	**<u>New question</u>** which was developed to explore the barriers to accesings/using public hospital services. The response options were adopted from options that developed for the pilot survey question Q2.8 (see above), and the result of phase one, to ensure the question was culturally specific.
5.3 (Alternative behaviours)	When you were not able to use a service at, or been admitted to, a public hospital, what did you do instead? (Multiple responses possible)	1 = Nothing 2 = Went to private hospital 3 = Went to hospital in your original country 77 = Something else [specify] _____	**<u>New question</u>** which was developed to collect the data of participants' alternative healthcare-seeking behaviours.

		K = Don't know R = Refused	The response options were developed based on the result of phase one, to ensure the question was culturally specific.
5.4 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from accessing and using public hospital services when you had a health problem?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**New question** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).
Private hospital			
6.1	Since you first arrived in NZ, have you yourself used a service at, or been admitted to, a private hospital as a patient?	1 = Yes 2 = No K = Don't know R = Refused	Adapted from 2017/18 NZHS – question A2.65 Modified the time frame in the original question "*in the past 12 months*" into "*Since you first arrived in NZ*," to consistent with the research objective(s).
6.2 (Barriers to accessing private hospital)	Since you first arrived in Aotearoa NZ, was there a time when you had a health problem but did not use a service at, or been admitted to, a private hospital as a patient? If so, why? If not, please select the option "Don't apply". (Multiple responses possible) ** Chinese-speaking practitioners mean the practitioners who can speak Mandarin, Cantonese, and/or Hakka.* ******* *A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*	1 = Lack of Chinese-speaking practitioners and/or translators in hospital services* 2 = Services were expensive/ not affordable 3 = Had no transport to get there 4 = Couldn't spare the time 5 = Lack of support person** (include support person was difficult to take time off work) 6 = Didn't want to be a burden 7 = Unfamiliar with the private hospital services in NZ 8 = Couldn't get an appointment soon enough/at a suitable time 9 = Long waiting list	**New question** which was developed to explore the barriers to accessing/using private hospital services. The response options were adopted from options that developed for the pilot survey question Q2.8 (see above), and the result of phase one, to ensure the question was culturally specific.

		10 = Lack of available hospital services in the area 11 = Concerned about the risk of contracting COVID 77 = Other [specify] _____ A = Don't apply K = Don't know R = Refused	
6.3 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from accessing and using private hospital services when you had a health problem?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**<u>New question</u>** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).
Emergency department			
7.1	Since you first arrived in NZ, have you visited to an emergency department at a public hospital about your own health?	1 = Yes 2 = No K = Don't know R = Refused	Adapted from 2017/18 NZHS – question A2.69 Modified the time frame in the original question "*in the past 12 months*" into "*Since you first arrived in NZ*," to consistent with the research objective(s). Rewrote the respond options. Delated the visiting time & added the "Yes" or "No" options.
7.2 (Reasons for visit ED)	What were all the reasons you went to a hospital emergency department? (Multiple responses possible)	1 = Thought the condition was serious / life threatening 2 = Time of day / day of week (e.g., after-hours) 3 = Sent by GP 4 = Sent by Healthline (or another telephone helpline) 5 = Taken by ambulance or helicopter 6 = Cheaper 7 = More confident about hospital than GP	Original question in 2017/18 NZHS – question A2.73

		8 = ED recommended by someone else 10 = Waiting time at GP too long 11 = Do not have regular GP 77 = Another reason [specify] _____ A = Don't pply K = Don't know R = Refused	
7.3 (Waiting time)	Thinking about your last visit to a hospital emergency department for your own health, how long did you wait before being treated?	1 = Less than 30 minutes 2 = 30 minutes to less than 1 hour 3 = 1 hour to less than 2 hours 4 = 2 hours to less than 3 hours 5 = 3 hours or more A = Don't apply K = Don't know R = Refused	Adapted from 2017/18 NZHS – question P2.74 Reduced the number of respond options to make the question easy to read. Consistent with the result of phase one - ***Theme one "It is the Little Things that Matter the Most"*** (code two *"Time matters in accessing and utilisation secondary and Tertiary healthcare services"* under the sub-theme *"Time Matters to Healthcare Access and Utilisation").*
7.4 (Waiting time)	How good were staff at telling you how long you could expect to wait, or if there would be a delay?	1 = Very good 2 = Good 3 = Neither good nor bad 4 = Poor 5 = Very poor A = Doesn't apply K = Don't know R = Refused	Original question from 2017/18 NZHS – question P2.75
7.5 (Waiting time)	How did you feel about how long you had to wait?	1 = I didn't mind the wait 2 = I had to wait a bit too long 3 = I had to wait far too long A = Doesn't apply K = Don't know R = Refused	Original question from 2017/18 NZHS – question P2.76

7.6 (Barriers to accessing ED)	Since you first arrived in Aotearoa NZ, was there a time when you had a medical problem but did not visit a hospital emergency department (ED)? If so, why? If not, please select the option "Don't apply". (Multiple responses possible) ** Chinese-speaking caregiver means the caregiver who can speak Mandarin, Cantonese, and/or Hakka.* *** A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*	1 = Chinese-speaking caregiver was unavailable * 2 = Services were expensive/ not affordable 3 = Had no transport to get there 4 = Couldn't spare the time 5 = Lack of support person** (include support person was difficult to take time off work) 6 = Didn't want to be a burden 7 = Unfamiliar with the ED services in NZ 8 = Couldn't get an appointment soon enough/at a suitable time 9 = Long waiting list 10 = Lack of available hospital services in the area 11 = Concerned about the risk of contracting COVID 77 = Other [specify] _____ A = Don't apply K = Don't know R = Refused	**<u>New question</u>** which was developed to explore the barriers to accessing/using public hospital services. The response options were adopted from options that developed for the pilot survey question Q2.8 (see above), and the result of phase one, to ensure the question was culturally specific.
7.7 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from accessing and using ED when you had a health problem?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**<u>New question</u>** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).
Medical specialists			
8.1	Since you first arrived in NZ, have you seen any of the following medical specialists about your own health? **[Multiple responses possible]**	1 = Dermatologist 2 = Neurologist 3 = Cardiologist	Adapted from 2017/18 NZHS – question A2.82

	**A medical specialist is a doctor who has completed advanced training in a specific area of medicine. People are sometimes referred to a specialist by their GP.* **Only code as 'Other' if respondent has seen a specialist in this list, otherwise code 'None'.*	4 = Haematologist 5 = Endocrinologist 6 = Respiratory Physician 7 = Immunologist (allergy specialist) 8 = Oncologist 9 = General surgeon 10 = Orthopaedic surgeon 11 = Ophthalmologist (eye specialist) 12 = Ear, nose and throat specialist 13 = Urologist 14 = Gynaecologist 15 = Geriatrician 16 = General or Internal Medical specialist 17 = Psychiatrist 77 = Other [specify] _____ 0 = None K = Don't know R = Refused	Modified the time frame in the original question "*in the past 12 months*" into "*Since you first arrived in NZ*," to consistent with the research objective(s). Delated response option "Obstetrician" to meet participants' needs.
8.2 (Barriers to accessing medical specialist services)	Since you first arrived in Aotearoa NZ, have you avoided going to a specialist when you need to? If so, why? If not please select the option "Don't apply". (Multiple responses possible) *Chinese-speaking specialist means the specialist who can speak Mandarin, Cantonese, and/or Hakka.	1 = Chinese-speaking specialist was unavailable* 2 = Services were expensive/ not affordable 3 = Had no transport to get there 4 = Couldn't spare the time 5 = Lack of support person** (include support person was difficult to take time off work) 6 = Didn't want to be a burden	**New question** which was developed to explore the barriers to accessing/using medical specialist services. The response options were adopted from options that developed for the pilot survey question Q2.8 (see above), and the result of phase one, to ensure the question was culturally specific.

		7 = Unfamiliar with the medical specialist referral system in NZ 8 = Couldn't get an appointment soon enough/at a suitable time 9 = Long waiting list 10 = Lack of specialist care services in the area 11 = Concerned about the risk of contracting COVID 77 = Other [specify] _____ A = Don't apply K = Don't know R = Refused	
8.3 (Alternative behaviours)	When you were not able to see a specialist, what did you do instead? ? (Multiple responses possible)	1 = Nothing 2 = Went to see the specialist at a later date 3 = Back to your original country to see a specialist 77 = Something else [specify] _____ K = Don't know R = Refused	**New question** which was developed to collect the data of participants' alternative healthcare-seeking behaviours. The response options were developed based on the result of phase one, to ensure the question was culturally specific.
8.4 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from accessing and using medical specialist services when you had a health problem?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**New question** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).

Question No	Question	Response options	Comments
Other health care workers			
9.1	Since you first arrived in NZ, have you seen any of the following health care workers about your own health? **[Multiple responses possible]**	1 = Pharmacist 2 = Physiotherapist 3 = Chiropractor 4 = Osteopath	Adapted from 2017/18 NZHS – question A2.96 Modified the time frame in the original question "*in the past 12 months*" into "*Since*

		5 = Dietitian 6 = Optician or optometrist 7 = Occupational therapist 8 = Social worker 9 = Psychologist or counsellor 10 = Chinese traditional medical doctor 11 = Chinese acupuncturist 12 = Chinese massage therapist 13 = Dentist 77 = Other [Specify] _____ 0 = None K = Don't know R = Refused	*you first arrived in NZ*," to consistent with the research objective(s). Added the response options "*10 = Chinese medical services; 11 = Chinese acupuncture; 12 = Chinese massage; 13 = Dentist*" to fit the study population (Chinese late-life migrants)
9.2 (Barriers to accessing the service)	Since you first arrived in Aotearoa NZ, you were not able to use the other health services when you needed to? If so, why? If not, please select the option "Don't apply". (Multiple responses possible) * *Chinese-speaking caregiver means the caregiver who can speak Mandarin, Cantonese, and/or Hakka.* ** *A support person could be your partner, son/daughter, son-in-law/daughter-in-law, grandson/granddaughter, other relatives, family friends, or neighbours.*	1 = Services were expensive/ not affordable 2 = Had no transport to get there 3 = Couldn't spare the time 4 = Lack of support person** (include support person was difficult to take time off work) 5 = Didn't want to be a burden 6 = Unfamiliar with these services in NZ 7 = Couldn't get an appointment soon enough/at a suitable time 8 = It was after-hours 9 = Lack of other health services in the area 10 = Concerned about the risk of contracting COVID 77 = Other [specify] _____ A = Don't apply K = Don't know	**New question** which was developed to explore the barriers to accessing/using other care services. The response options were adopted from options that developed for the pilot survey question Q2.8 (see above), and the result of phase one, to ensure the question was culturally specific.

		R = Refused	
9.3 (The COVID-19 related impact)	Does the COVID-19 pandemic prevented you from accessing and using other healthcare services when you had a health problem?	1 = Yes (Specify how) 2 = No K = Don't know R = Refused	**New question** which was developed to collect the data of the impact of the COVID-19 pandemic on healthcare access and utilisation (to address the research objective(s)).