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# Exploring the Quality Performance of Ethno-Specific and Mainstream Not-For-Profit Long-Term Care Homes in Ontario

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# Abstract

The purpose of this retrospective study was to determine how ethno-specific not-for-profit long-term care (LTC) homes in Ontario perform in comparison to mainstream not-for-profit LTC homes using nine RAI-MDS 2.0 quality indicators. Publicly available data from three sources: the Canadian Institute for Health Information "Your Health System: In Depth" database from the Continuing Care Reporting System, data on Ontario ethno-specific not-for-profit LTC homes from the Home and Community Care Support Services, and data on home and ownership records from the Ministry of Long-Term Care “Public Reporting” website, between 2017-2022, were retrieved and analyzed. Descriptive analysis suggests that for all quality indicators, except for improved physical functioning, ethno-specific not-for-profit LTC homes performed better, with fewer residents experiencing adverse health outcomes. Significance testing suggests that four quality indicators were statistically different between not-for-profit ethno-specific and mainstream LTC homes. Specifically, ethno-specific LTC homes had a smaller percentage of residents experiencing pain, falls in the last 30 days, and worsening depressive moods, while mainstream LTC homes had a higher percentage of residents experiencing improved physical functioning. The study findings aim to inform future research on interventions and policy adaptations to enhance the overall quality of care for culturally, religiously, and ethnically diverse older adults living in Ontario’s LTC homes.



## Keywords

Older adults, quality performance, quality indicators, RAI-MDS 2.0, mainstream, ethno-specific, long-term care homes, residents, not-for-profit LTC, Ontario, Canada

# Summary for Lay Audience

The number of older adults, defined as people over the age of 65, is increasing around the world. This phenomenon is called population aging. Canada's population is increasingly diverse, with people immigrating from all parts of the world. This is important for long-term care homes, which are tasked with providing services to older adults who need daily support, supervision, and assistance. Old age is associated with more health problems; therefore, it is expected that more older immigrants will need long-term care in the future. Ethno-specific long-term care homes provide services to a specific ethnic, religious, or cultural group. The purpose of this study was to explore how not-for-profit ethno-specific homes in Ontario perform in comparison to mainstream not-for-profit homes using nine quality indicators routinely collected in every long-term care home in the province. Results show that residents in the not-for-profit ethno-specific homes experienced less pain, fewer falls, and less worsening depressive moods. However, more residents in the mainstream not-for-profit homes improved their physical functioning. These findings suggest potential benefits in homes that tailor care to specific cultural backgrounds. The findings aim to inform future research and policy adaptations to enhance long-term care experiences for culturally, religiously, and ethnically different older adults.

# Acknowledgments

*"Allah does not burden a soul beyond that it can bear…"* (Quran 2:286). As the youngest of six, I have had the incredible privilege of witnessing my older siblings' careers and lives unfold. I have watched them graduate, get married, move into their own homes, and have children. While I couldn't be prouder of my siblings, I often struggle with feelings of inadequacy and hopelessness when contemplating where I am in my own life. This expectation I have placed on myself to follow the same path and achieve the same accomplishments has fueled my perfectionism for as long as I can remember. To overcome the fact that I am not perfect like my siblings, I will simply try to never make mistakes. It wasn't until the completion of this thesis that I had to challenge and reflect on this harmful mentality. Research is defined as "the creation of new knowledge and/or the use of existing knowledge in a new and creative way to generate new concepts, methodologies and understandings." In the process of creating new knowledge, I learned quickly that perfectionism has no place in both academia and life. If everyone were "perfect" and did things the same way, it would be virtually impossible to create meaningful contributions. Although it is hard to accept, it is through our differences and mistakes that we find our purpose and place in the world. The day I accepted this fact was the day I realized I was doing a perfect job all along.

To any new graduate students struggling with perfectionism and feeling behind in life: You will fail more times than you will succeed. Every "failure" will bring you another step closer to creating new knowledge. Another step closer to fulfilling the journey that was divinely created for you. Another step closer to creating something that is completely *yours*. Embrace your differences, and you will find that you are more than capable of handling all the burdens of academia.

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Alhamdulilah,

Lanei Amein

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# List of Abbreviations

| | |
|---|---|
| CCRS | Continuing Care Reporting System |
| CIHI | Canadian Institute for Health Information |
| FLTCA | Fixing Long-Term Care Act |
| HCCSS | Home and Community Care Support Services |
| LTC | Long-Term Care |
| MOLTC | Ministry of Long-Term Care |
| OA | Older Adult |
| QI | Quality Indicator |
| RAI-MDS 2.0 | Resident Assessment Instrument–Minimum Data Set 2.0 |

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# Chapter 1

# 1 Introduction and Literature Review

## 1.1 Older Adults and Population Aging

The proportion of the older adult (OA) population, defined in Canada as people over the age of 65 and older, is increasing at an unprecedented rate globally (Canadian Institute for Health Information [CIHI], 2017). According to the World Health Organization (2022), one in six people worldwide will be 60 or older by 2030. This demographic shift will be even more evident after 2050, when the global population of OAs will nearly double from 1.4 billion in 2020 to 2.1 billion (World Health Organization, 2022). Canada is not immune to this worldwide phenomenon; over the next 20 years, Canada's population of OAs will increase from 6.2 million to 10.4 million (CIHI, 2017). The 2021 census reports that since 2001, the number of OAs aged 85 and older has doubled to 861,000, projected to triple by 2046 (Statistics Canada, 2022a). Provincially, Ontario has one of the fastest-growing OA populations in Canada, increasing from 3 million (16.4% of the provincial population) in 2016 to 4.6 million (25% of the provincial population) in 2041 (Ontario, 2017). Due to low fertility rates, the gradual increase in life expectancy, and the fact that the large baby boom generation started turning 65 in 2011, the proportion of Canada's OA population is increasing faster than its younger cohorts, a trend commonly referred to as population aging (Statistics Canada, 2022a). It is also evident that population aging has already shifted the focus of care delivery to catering to the needs of OAs. This shift will continue as the proportion of OAs increases fastest in Canadian history.

## 1.2 Context of Canada's Changing Social and Demographic Characteristics

Given that Canada's population continues to age and fertility is below the population replacement level, immigration is now the primary driver of population growth for the first time in Canadian history (Statistics Canada, 2022b). The impact of aging demographics and low fertility rates is and will continue to be profound on how we care

for OAs in late life. This section explains the context of Canada's changing social and demographic characteristics, providing the setting and circumstances for the current study.

From 2016 to 2021, the Canadian census reports that the number of children under 15 years of age grew six times slower than the number of OAs aged 65 and older (Statistics Canada, 2022a). The declining growth rate among younger Canadians poses a significant problem: As more Canadians are exiting the working age range than entering it, who will care for the growing number of OAs? In response, Canada uses immigration to mitigate the impacts of labour shortages emerging from the decrease in working-age people. According to Statistics Canada's recent population projections, immigrants, mainly of working age, could represent 29.1% to 34.0% of the total population by 2041 (Statistics Canada, 2022b). The rising proportion of immigrants is primarily driven by the record number who came to Canada from 2016 to 2021, where over 1.3 million recent immigrants were permanently admitted, accounting for 15.9% of all immigrants in 2021 (Statistics Canada, 2022b). However, changing immigration policies and international events, such as the First and Second World Wars, have resulted in various source regions from which newcomers are migrating. Beginning in 1869 and continuing for most of the twentieth century, Canadian immigration policy focused primarily on attracting white Europeans and was discriminatory toward people of colour (Berry, 2020; Dirks, 2020). In 1976, the Liberal government officially passed a new Immigration Act centred on multiculturalism, resulting in a diverse wave of newcomers immigrating to Canada (Berry, 2020; Dirks, 2020).

Consequently, the cohort of OAs born in Europe from 1957 to 1961 may be the last with a higher proportion of European-born individuals. In 2021, one in ten recent immigrants (10.1%) were from Europe, a proportion about six times lower than in 1971 (61.6%) (Statistics Canada, 2022b). By contrast, Asia represents the most common continent of birth for people born outside Canada between 1967 and 1971 cohort, and all subsequent cohorts until 2016 (Carrière et al., 2016). For the first time, India took the top spot as the primary place of birth (18.6%) of recent immigrants from 2016 to 2021, followed by the Philippines (11.4%) and China (8.9%) (Statistics Canada, 2022b). While younger people are immigrating first, Canada recognized the importance of uniting

immigrants with their families in 2001 with the implementation of the Immigration and Refugee Protection Act (2001). In addition to the individual hardships that an individual may face from immigrating to Canada (i.e., social isolation and missing family and friends), the Committee on Citizenship and Immigration states that family separation also impacts Canadian society through delayed integration, return migration (i.e., people going back to their countries of origin), or immigrants' resources sent back to their country of origin to support their families (Wrzesnewskyj, 2017). Thus, the Immigration and Refugee Protection Act family sponsorship program was created to facilitate family reunification by allowing immigrants to sponsor their spouses, common-law partners, conjugal partners, dependent children, parents, grandparents, and other eligible relatives (Wrzesnewskyj, 2017). With more people born abroad and sponsoring their older relatives, the ethnocultural characteristics of the more recent cohorts of OAs will thereby contribute to a significant increase in ethnocultural diversity within Canada's OA population between the 2030s to 2050s (Carrière et al., 2016).

Compared to the native-born population, recent immigrants in Canada tend to be in better health (Fuller-Thomson et al., 2011). This phenomenon, known as the 'healthy immigrant effect,' results from immigrants having better health habits in their countries of origin, a positive self-selection effect where healthier people are more likely to apply for immigration, and the selection policies of Citizenship and Immigration Canada, whereby immigrants with serious health problems are rejected (Fuller-Thomson et al., 2011). However, this effect tends to diminish over time, as the health of immigrants converges to the Canadian norm.

## 1.3 Long-Term Care Homes in Ontario

Long-term care (LTC) homes in the province of Ontario, also known as nursing homes or skilled nursing facilities, provide round-the-clock medical supervision and personal care services for people who cannot live independently due to chronic illness, disability, or age (Ministry of Long-Term Care [MOLTC], 2021). LTC homes are a unique service within the Ontario's health care system in that they provide both treatment and a living situation. Most residents who live in LTC homes are OAs with some form of cognitive or

physical impairments, along with chronic health conditions, that make it exceedingly difficult, if not impossible, to care for themselves at home (MOLTC, 2021).

Encompassing both the health care and social support services provided to residents with chronic conditions or disabilities, LTC homes are the sole environment for many residents for the duration of their stay, which may be several years (Institute of Medicine, 1986). The Institute of Medicine (1986) describes LTC homes as "total institutions" in which caregivers, particularly nurse's aides, represent a large part of the social world of home residents and control their daily schedules and activities. The physical, psychosocial, and environmental circumstances and outcome expectations of LTC home residents distinguish the goals of LTC from those of acute medical care (i.e., hospitals). In acute care, treatment goals are based primarily on medical diagnosis, whereas in LTC homes, the care goals are based more extensively on physical and psychosocial assessment. LTC homes focus on restoration, maintenance or slowing the loss of function, and alleviating discomfort and pain. Canada has 2,076 LTC homes with approximately 198,220 beds (CIHI, 2021). However, an additional 199,000 LTC home beds will be needed by 2035 to accommodate population aging (Gibbard, 2017). With one of the fastest-growing OA populations, Ontario currently has the most LTC homes of any province, totaling 627 at the time of this study (CIHI, 2021).

Of Ontario's 627 LTC homes, approximately 57 are ethno-specific (CIHI, 2021; Office of the Auditor General of Ontario, 2023). The Office of the Auditor General (2023) in Ontario defines ethno-specific LTC homes as homes that cater all services (i.e., food, social events, communication, or holidays) to a specific ethnic, religious, or cultural group and mainstream LTC homes in Ontario as homes that provide LTC care and services irrespective of residents' ethnic, cultural, or religious status. A 2016 report on LTC home waitlists indicated that residents who applied to ethno-specific LTC homes in Toronto had to wait approximately six months longer than those who applied to mainstream (non-ethnic) homes (538 days versus 357 days for a basic bed) (Um, 2016). In some ethno-specific homes, nine out of ten applicants waited more than 3,000 days (Um, 2016). With the immigration of diverse peoples now being Canada's primary means of population growth, along with an unprecedently large OA immigrant population, these high wait times for ethno-specific homes are projected to increase.

Due to the loss of previous familiar surroundings, many immigrants look toward other members of their ethnocultural group for support (Chau & Lai, 2011). In a study examining how Polish, Jewish, and Western European OAs adapt to LTC, Kahana et al. (1993) found a direct link between the confidence of immigrant OAs ability to age well and the LTC home providing care and services that are culturally congruent with their beliefs. When personal characteristics related to ethnicity, such as locus of control and acculturation, are addressed in LTC homes, ethnic OAs are more confident in their abilities to recover from adverse health conditions and incidents (Kahana et al., 1993). However, research on ethnic and culturally specific care is lacking due to the cultural preference of aging-in-place that many immigrants favour (Brotman, 2002; Kaida et al., 2009). For example, Chinese-identifying OAs, who have comprised 10 percent of the Chinese-identifying Canadian population since 2001, harbour a stigma toward institutionalized care (Lai, 2012). As such, grown children and extended family have historically taken on the informal caregiver role. However, this traditional mode of care is becoming increasingly less common. As immigrants move to Canada, many younger cohorts assimilate the mainstream culture that is more common amongst the population, neglecting their own cultural norms and beliefs. As their family over-seas age, and they sponsor their OA parents to reunite in Canada to be cared for, researchers (Brotman, 2002; Lee & Mjelde-Mossey, 2004) have found that these immigrant OAs experience social and familial isolation because of the changing cultural practices and customs that their children have become accustomed to. The literature suggests that the "taking care of your own" ideology is declining as population aging progresses, and an increased number of immigrant OAs will be required to turn to LTC homes (Lee & Mjelde-Mossey, 2004).

## 1.4 Culturally Competent Care

As more immigrants from diverse ethnic, cultural, and religious groups are increasingly reflected in Canada's aging population, people from various cultures, ethnicities, and racial backgrounds are and will continue to utilize healthcare facilities (i.e., LTC homes) (Durst & Barrass, 2014). With the most LTC homes of any province and the high wait times in ethno-specific homes, this is especially important in Ontario. Transcultural nursing is a comparative study of cultures to understand similarities (culture-universal)

and differences (culture- specific) across human groups (Leininger, 1991). Cultural competence in LTC is defined as the ability of providers and organizations to effectively deliver health services that meet patients' social, cultural, and linguistic needs (Betancourt et al., 2002). The following section expands on the Culture Care Diversity and Universality theory and explains relevant concepts in transcultural nursing as they relate to the provision of culturally competent LTC.

The main objective of transcultural nursing is to promote the delivery of culturally congruent, meaningful, high-quality, and safe healthcare to people belonging to similar or diverse cultures (Leininger, 2002). It requires nurses and care staff to acknowledge that individuals belong to different ethnicities, cultures, and races and, therefore, necessitate treatment and care plans that respect the uniqueness of each individual (Lowe & Archibald, 2009). Transcultural nursing employs the concepts of ethnicity, race, and culture to understand individuals' perceptions and behaviors (Leininger, 2002). One of the oldest theories in transcultural nursing is the Culture Care Diversity and Universality theory launched by Madeline Leininger in the mid-1950's, focusing on the close interrelationships of culture and care on well-being, health, illness, and death (Leininger, 2002). Culture refers to a set of beliefs, assumptions, values, and norms that a group of individuals largely observe and transfer across generations (Martin et al., 2007).

According to Leininger (2002), culture can significantly affect various aspects of human life, including health and preferences for managing health conditions Each culture has distinct characteristics and therefore, individuals belonging to different cultures can differ considerably. Culture care emphasizes a person's beliefs and heritage when developing a healthcare plan. Race is a social classification based on physical characteristics like skin color and can also serve as an identifying trait of a culture (Martin et al., 2007). Similarly, ethnicity indicates cultural membership based on people having similar cultural characteristics that have led to a common history (i.e., immigrants from the same country, from the same race, who may speak a common language). Ethnicity tends to remain with people throughout their lives (Martin et al., 2007). According to transcultural nursing, culturally congruent healthcare does not aim to facilitate care for ethnic or racial minority groups only; rather, the objective is to improve healthcare delivery by considering differences in age, gender, religion, and

socioeconomic status (Leininger, 2002). Although transcultural nursing and the Culture Care Diversity and Universality theory are qualitative in nature (i.e., require immersive observations within specific ethnic, racial, or cultural group), the definitions and conceptualizations of ethnicity, race, and culture were adopted in the current quantitative study.

Ethno-specific LTC homes, similar to mainstream (non-ethnic) homes, provide nursing care and supervision, help with daily activities and interests, and a caring home environment for residents 24 hours a day. However, ethno-specific LTC homes are explicitly designed to serve a particular ethnic or cultural community and may offer specialized services or programs tailored to its residents' cultural needs (Flanagan et al., 2021; Runci et al., 2005). As of 2022, a review of the literature on immigrant OAs in LTC revealed that multiple factors prevent ethnic OAs from receiving quality care in mainstream LTC homes, including linguistic barriers to gaining access to healthcare services (Lai, 2000; 2004; 2005; Runci et al., 2012; Saldov & Chow, 1994); differences in dietary preferences; and a lack of culturally sensitive services and programs (Kahana et al., 1993). The 2021 census reported that the wide variety of source regions of immigrants has contributed to an increase in linguistic diversity, with over 450 languages reportedly spoken in Canada (Statistics Canada, 2022c). When entering a mainstream healthcare setting, ethnic OAs face what Saldov and Chow (1994) refer to as a "double jeopardy." Already disadvantaged by losses in physical and cognitive functioning, they are unable to use their native language, which increases the risk of their healthcare needs being unmet. Linguistic differences and limited knowledge of the English language make it increasingly difficult to access appropriate healthcare services in Western countries. For example, the Canada Employment and Immigration Commission found that language and cultural differences between practitioners and immigrants requiring mental health care in Canada often prove ineffective in achieving successful treatment (Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees, 1988). When compared to the general Canadian OA population, migrant Chinese OAs had twice the estimated prevalence of depression (Lai, 2000; 2004; 2005).

The literature also suggests a link between linguistic barriers and accessing appropriate dietary needs. For example, Garcia and Johnson (2003) report that in a

sample of 54 immigrant OAs receiving LTC care in Ontario from diverse source regions, including Cambodia, Latin America, Poland, and Vietnam, 73 percent were at a moderate to high nutritional risk due to the inability to communicate dietary needs in English and the unavailability of ethnic foods. In addition to a means of sustenance and nutrition, food plays an important role in providing a form of cultural familiarity (Durst & Barrass, 2014). As Gerrish and colleagues (1996) discuss *"Food...while a basic human need, is the vehicle for a ritual and meaning across the range of cultural mores... Yet such a basic shared need is apparently one of the most frequent signs for ethnocentric thoughtlessness."* (Gerrish et al., 1996, p. 122). Further, the researchers report that mainstream LTC homes often overlook the importance of providing culturally familiar foods, stating *"Failure...to meet the dietary expectations of minority ethnic clients ranges from total non-recognition of their distinctive cultural expectations to a serious-minded recognition of this as an issue in cross-cultural care."* (Gerrish et al., 1996, p. 122). Interestingly, the importance of providing culturally appropriate dietary foods and services in LTC homes is recognized in standard 5.2.7 of the Ontario LTC Home Design Manual (MOLTC, 2015), which states:

> *"Dietary service space must be... appropriate in size and design to prepare and serve a variety of food products and beverages that meet the nutritional care needs of residents ,... and allow the home to meet the cultural requirements, therapeutic needs and food preferences of all of its residents." (p. 26).*

A culturally competent care system, such as ethno-specific LTC homes, helps improve health outcomes and the quality of LTC, and contributes to eliminating racial and ethnic health disparities (Betancourt et al., 2002). To date, there is limited research on how ethno-specific LTC homes in Ontario perform, and it is not known whether these homes produce different health outcomes for OA residents. The Mental Health Commission of Canada documented that for ethnic minority groups, who often experience barriers to accessing appropriate LTC, linguistic and cultural competencies are a crucial strategy for improving accessibility (Mental Health Commission of Canada, 2019).

## 1.5 Measuring Quality Performance in Ontario LTC

The World Health Organization (n.d.) defines quality of care as "the degree to which health services for individuals and populations increase the likelihood of desired health outcomes." (World Health Organization, n.d., para. 1). In 2010, The Excellent Care for All Act was introduced and enacted by the Ontario government to ensure that all healthcare organizations, including LTC homes, could deliver quality care, recognizing that *"A high-quality health care system is one that is accessible, appropriate, effective, efficient, equitable, integrated, patient centred, population health focused, and safe"* (Excellent Care for All Act, 2010, c. 14, s. 1). According to Health Quality Ontario (2015), individuals should expect and be able to rely on high standards of quality care. The following section provides an overview of LTC quality assessment in Ontario.

Ontario's Ministry of Long-Term Care (MOLTC) oversees the LTC sector's quality and residents' safety by developing and regulating various legislatures, such as the *Fixing Long-Term Care Act (FLTCA)* (2021) (replacing the Long-Term Care Home Act, 2007), and Ontario Regulation 246/22 (O. Reg. 246/22, 2022). When a LTC home fails to adhere to the standards and regulations, the MOLTC is responsible for withdrawing LTC home licenses or provincial funding (FLTCA, 2021, c. 39, Sched. 1, s. 102). The FLCTA details a Resident's Bill of Rights that includes freedom from abuse and neglect (i.e., not be restrained without valid reason) and the right to be treated with respect, have an optimal quality of life, be provided with quality of care, and be informed, participate and make a complaint. With changing ethnocultural demographics, the fundamental principle of the FLTCA recognizes ethnic-specific needs as a core element of providing an optimal quality of life, stating that LTC homes are:

> *"…primarily the home of its residents and is to be operated so that it is a place where they may live with dignity and in security, safety and comfort and have their physical, psychological, social, spiritual and cultural needs adequately met." (s. 1[1], FLTCA, 2021).*

Thus, cultural, spiritual, and religious preferences in resident assessment and care plan design are factors the FLTCA considers integral in quality health delivery and service provision (FLTCA, 2021).

Within 24 hours of admission, a LTC home is required to develop an initial plan to address the immediate health and safety needs of its newest resident. Part two of the FLTCA outlines the rights, care and services that must be provided in LTC homes, including that: "*The licensee shall ensure that the plan of care covers all aspects of care, including medical, nursing, personal support, mental health, nutritional, dietary, recreational, social, palliative, restorative, religious and spiritual care.*" (c. 2, s. 6[3], FLTCA, 2021,). In part two of the O. Reg. 246/22 (2021), which is the corresponding regulation of the FLTCA (2021), the required programs under the "Residents: Rights, Care and Services" subsection instructs the LTC home to develop and implement specific programs such as a fall prevention and management program, a skin and wound care program, continence care and a bowel management program, and a pain management program (See: c. 2, s. 53[1-2] - s. 57[1-2], O. Reg. 246/22, 2021).

Measuring the performance of LTC homes in providing quality care in Ontario involves the use of the Resident Assessment Instrument–Minimum Data Set 2.0 (RAI-MDS 2.0) developed by interRAI, a not-for-profit international research network committed to improving care for people with complex medical needs and detecting potential risks (CIHI, 2023a; Hutchinson et al., 2011). In Canada, the introduction of RAI-MDS began with Ontario's chronic care hospitals in 1996 and was mandated for use in all Ontario LTC homes by 2010 (Armstrong et al., 2016). It has been further modified for Canadian use with permission from interRAI under a license agreement with CIHI (Morris et al., 2012). CIHI is an independent, not-for-profit organization that provides comparable and actionable data on different aspects of the health system (i.e., individuals residing in LTC homes) to accelerate improvements in health care, health system performance, and population health across Canada (Alberta Health, 2015; CIHI, 2023a). Each LTC home in Ontario is required to use this standardized RAI-MDS 2.0 tool to assess their residents on the following occasions: upon admission, every three months after admission, and if a resident experiences any significant health change (e.g., a fall, diagnosis of psychosis, hospitalization) (Hutchinson et al., 2011).

The RAI-MDS 2.0 contains more than 500 data elements that document clinical and functional characteristics of residents, including: cognitive function, vision, psychological well-being, continence, health conditions, skin condition,

treatment/procedures, communication/hearing, mood and behaviour, physical function, disease diagnoses, nutritional/oral status, and activity patterns (Morris et al., 2012). Each LTC home typically employs a dedicated registered nurse or licensed practical nurse who receives information about residents from direct care workers on each floor and ensures the data are complete (Armstrong et al., 2016). Along with administrative, demographic, and resource utilization data, the RAI-MDS 2.0 data is submitted to the Continuing Care Reporting System (CCRS); a CIHI database launched in 2003 containing information specific to individuals receiving continuing care services in hospitals or LTC homes in Canada (Alberta Health, 2015; CIHI, 2013). The current study used Ontario LTC home data submitted to the CCRS on nine quality indicators (QIs) derived from the RAI-MDS 2.0 tool to compare performance between mainstream and ethno-specific LTC homes, as described in detail in the Method chapter.

## 1.6 Purpose

With the emergence of population aging and the ethnic, cultural, and religious diversity of OAs in Canada, more knowledge is needed on discrepancies between the quality of care provided in mainstream and ethno-specific LTC homes. With international immigration to Ontario reaching a record 227,424 newcomers in 2022 and expected to remain high in parallel with population aging (Park, 2023), the aim of this project was to provide evidence on how to provide optimal LTC to Ontario's aging and diversifying population. Currently, ethno-specific LTC homes in Ontario have not been extensively studied. Literature on the needs of immigrant OAs in mainstream LTC homes suggests that linguistic differences between residents and staff, differences in dietary preferences, and a lack of culturally sensitive services and programs are preventing residents from receiving care that is congruent with their specific beliefs. As ethno-specific LTC homes base their care services and programs on the specific ethnic, cultural, and racial needs of their residents (i.e., ethnic foods and celebration of cultural holidays), it is possible that they are better equipped to deliver culturally congruent care, in turn producing high quality of care, as proposed by transcultural nursing. However, it is not yet known whether not-for-profit ethno-specific homes produce different quality outcomes. Thus, the purpose of this study was to determine how not-for-profit ethno-specific LTC homes

in Ontario perform in comparison to not-for-profit mainstream LTC homes on nine standardized RAI-MDS 2.0 quality indicators. Two specific research questions were:

- What was the difference in quality indicator performance between not-for-profit ethno-specific and mainstream LTC homes?
- How did the quality indicators' performance change over time?

# Chapter 2

## 2 Method

### 2.1 Study Design

Retrospective studies are designed to look backward in time to examine the relationship between exposure and outcome (Song & Chung, 2010). The “exposure” in this study refers to the type of LTC home (mainstream or ethno-specific), while the “outcome” refers to the quality of LTC delivered to OA residents, measured using nine RAI-MDS 2.0 QIs.

### 2.2 Secondary Data Extraction and Cleaning Process

This retrospective study used secondary data from three sources:

1. CCRS data submitted to the CIHI "Your Health System: In Depth" database
2. Data on Ontario ethno-specific LTC homes from the Home and Community Care Support Services (HCCSS), and
3. Home and ownership records from the MOLTC “Reports on Long Term Care Homes” website (https://publicreporting.ltchomes.net/en-ca/Search_Selection.aspx).

For the publicly available secondary data, formal ethical approval was not required. For transparency and documentation purposes, a confirmation email from a Western University Research Ethics Board officer is included in Appendix A.

The dataset from CIHI’s "Your Health System: In Depth” database was downloaded into Microsoft Excel on 09/09/2022. This original dataset, created by the CIHI team, separated entries into two categories: indicators and contextual measures. Both categories were necessary for this study. An indicator is an evidence- or consensus-based standardized measure that conveys a dimension of health system structure, healthcare process, or health outcome (Marshall et al., 2003). The original indicators category included 43 indicators used to convey quality system performance across various health sectors in Canada. The contextual measures category included 28 additional variables (i.e., LTC home size) to help with the interpretation and analysis of indicator results. For transparency and replication purposes, three lists containing the

Notes Worksheet (Appendix B), Indicators (Appendix C), and Contextual Measures (Appendix D) in the original dataset downloaded from CIHI website (https://yourhealthsystem.cihi.ca/hsp/indepth?lang=en#/) are included in the Appendices.

The focus of this study was on LTC homes in Ontario, the data were first filtered by "reporting level" to only include the "hospital or long-term care organization." Afterward, all entries for a "type of hospital" were removed, reducing the dataset only to LTC homes. Finally, "province/territory" was filtered to only include the entries from "Ontario." The cleaned dataset included only data reported to the CCRS from Ontario LTC homes on nine QIs (discussed further below) for five fiscal years (2017 to 2022). Using this same data cleaning process for the contextual measures, the dataset was reduced to the three variables: the Home and Community Care Support Services (HCCSS) region that the LTC home is under (n= 14), the size of the LTC home (i.e., small, medium, or large), and the location (i.e., urban or rural).

Since the CIHI original dataset did not distinguish the LTC homes by type, the ethno-specific LTC homes were identified in two ways. First, a list of all the ethno-specific LTC homes in Ontario (by region and ethnic, cultural, or religious group that care services were being catered to) was obtained from the HCCSS for the year 2019, the most recent available at the time of the study (Appendix E). Second, the ethno-specific LTC homes on the list were confirmed manually using the "Search for LTC Homes By Home Name" function on the MOLTC "Reports on Long Term Care Homes" website (https://publicreporting.ltchomes.net/en-ca/Search_Selection.aspx). Each "Home Report" included a profile (i.e., type of ownership) and inspection findings of the selected home, plus a link to its official website. The ethno-specific LTC home was confirmed using the mission statement and description of available care services and programs. As stated in part two of the FLTCA (2021), every LTC home must create a mission statement to set out the principles, purpose, and philosophy of care of the home (c. 2, s. 4[a], FLTCA, 2021). The mission statement must be driven by the primary goal of providing quality care, and each home must put its philosophy into practice in its day-to-day operations. Thus, in this study, the home was considered ethno-specific by the author if most care services or programs outlined in the home's mission statement were designed and catered

to a specific and distinguished ethnic, religious, or cultural group (i.e., home specified catering to residents' ethnic, religious, or cultural food preferences or holidays).

## 2.3 Inclusion and Exclusion Criteria

A total of 63 ethno-specific LTC homes were identified by the author from the 2019 list obtained from the HCCSS, and an additional five were identified by the author after reviewing the mission statement for each home on the MOLTC website. Eight homes from the list were moved from ethno-specific to the mainstream LTC type because only a small number of beds (e.g., 10-20 out of 200) or units (e.g., one floor out of four floors) were designated as "ethno-specific," and the data were combined for the whole home. Due to the limited number of small (1 to 29 beds) ethno-specific LTC homes (n = 1), only medium size (30 to 99 beds) and large size (100 beds or more) LTC homes were included in the analysis. Additionally, municipal and for-profit-owned LTC homes were excluded from our analysis due to the small number of ethno-specific LTC homes (n = 4). In total, 55 not-for-profit ethno-specific LTC homes and 76 not-for-profit mainstream LTC homes were included in the analysis (Table 2-1).

**Table 2-1** Summary of Exclusion Criteria Applied to Dataset of LTC Homes in Ontario for the Period 2017-2022

| Type | Mainstream | Ethno-Specific | Total (N) |
|---|---|---|---|
| LTC homes in secondary data set* | 547 | 60 | 607 |
| Excluded hospitals with designated LTC beds | 11 | 0 | 11 |
| Excluded retirement homes with designated LTC beds | 12 | 0 | 12 |
| Excluded small size LTC homes | 10 | 1 | 11 |
| Excluded LTC homes with two or more years of missing data on any indicator | 7 | 0 | 7 |
| Excluded homes due to ownership type** | 431 | 4 | 435 |
| LTC homes included in the analysis | 76 | 55 | 131 |

*Note.** Secondary data set was retrieved from Continuing Care Reporting System on CIHI and included ethno-specific data submitted by the HCCSS and MOLTC "Public Reports".
**Not-for-profit municipal LTC homes and private LTC homes were excluded from sample.

## 2.4 Quality Indicators

In Ontario, the RAI-MDS 2.0 QIs for LTC performance aim to "*evaluate the quality of care being provided to long-term care residents in Ontario and allow for comparisons*

*over time, across regions and between homes, as appropriate*." (Health Quality Ontario, 2015, p. 11). There are two types of RAI-MDS 2.0 QIs: prevalence indicators and incidence indicators (Alberta Health, 2015). Prevalence indicators represent the proportion of residents who are assessed as presenting with a condition or event of interest at a single point in time, while incidence indicators represent the proportion of residents with a new presentation of the condition or event of interest compared at two points in time (Alberta Health, 2015). To allow for fair comparisons between LTC homes, the QIs in the RAI-MDS 2.0 quality assessment are risk-adjusted by the CCRS before the data is publicly available by CIHI (Morris et al., 2012). The standard reference population and the associated statistical parameters used for the QI risk adjustment are those created by interRAI research and are based on a cross-national sample of more than 3,000 facilities in six U.S. states and 92 LTC homes and continuing care hospitals in Ontario and Nova Scotia (Morris et al., 2012). The risk-adjustment calculation uses a predetermined statistical process that adjusts for differences in the populations served and the associated differences in risk that come with various conditions, such as age and health status (Alberta Health, 2015; Health Quality Ontario, 2013). Risk-adjusted QIs are designed to allow comparison of facility results with those of other facilities and to overall populations of interest (Morris et al., 2012). In 2012, Health Quality Ontario used an evidence-informed process and expert panel, composed of Ontario-based LTC home operators, clinicians and researchers, to produce Ontario benchmarks for select QIs representing good resident outcomes and high-quality care (Health Quality Ontario, 2017). A benchmark is a point of reference against which others may be measured and should represent a level of excellence and exceeding average performance (Health Quality Ontario, 2017). The present study included four prevalence QIs:

1. Experiencing pain in LTC
2. Falls in the last 30 days in LTC
3. Potentially inappropriate use of antipsychotics in LTC
4. Restraint use in LTC

and five incidence QIs:

5. Experiencing worsened pain in LTC
6. Improved physical functioning in LTC

7. Worsened depressive mood in LTC
8. Worsened physical functioning in LTC
9. Worsened pressure ulcer in LTC

These nine standardized QIs allowed for the comparison of quality performance between ethno-specific and mainstream LTC homes in Ontario. Table 2-2 provides descriptions, interpretations, and available benchmarks of the QIs.

**Table 2-2** Descriptions, Interpretations, and Benchmarks of RAI-MDS 2.0 Prevalence and Incidence Quality Indicators

| Quality Indicator | Description | Interpretation | Benchmark |
|---|---|---|---|
| | Prevalence | | |
| Experiencing Pain in Long-Term Care | Examines the percentage of LTC residents who had pain. The consequences of pain include increased difficulty with ADLs, depression and lower quality of life. The prevalence of persistent pain increases with age, and proper treatment of pain is necessary to improve the health status of residents. | Lower is better. A lower percentage of this indicator means that fewer residents had moderate daily pain or horrible/excruciating pain at any frequency within the applicable time period. | NA |
| Falls in the Last 30 Days in Long-Term Care | Examines the percentage of LTC residents who fell in the 30 days leading up to the date of their quarterly clinical assessment. Falls are the leading cause of injury for seniors and contribute to a significant burden on the health care system. Residents are at a higher risk of falling if they have a history of falls or are taking certain medications. Preventing falls increases the safety and quality of care of residents. | Lower is better. A lower percentage of this indicator means that fewer residents had a fall in the month leading up to their quarterly assessment. | 9.0% |
| Potentially Inappropriate Use of Antipsychotics in Long-Term Care | Examines the percentage of LTC residents who are taking antipsychotic drugs without a diagnosis of psychosis. These drugs are sometimes used to manage behaviours in residents who have dementia. | Lower is better. A lower percentage of this indicator means that fewer residents received antipsychotic medication without a diagnosis of psychosis within the applicable time period. | 19.0% |
| Restraint Use in Long-Term Care | Examines the percentage of LTC residents who are in daily physical restraints. Restraints are sometimes used to manage behaviours or to prevent falls. There are many potential physical and psychological risks associated with applying physical restraints to older adults, and such use raises concerns about safety and quality of care. | Lower is better. A lower percentage of this indicator means that fewer residents were in daily physical restraints within the applicable time period. | 3.0% |

| | | | Incidence |
|---|---|---|---|
| Experiencing Worsened Pain in Long-Term Care | Examines the percentage of LTC residents who had worsened pain. Worsening pain can be related to a number of issues, including medication complications and/or improper management of medication | Lower is better. A lower percentage of this indicator means that fewer residents had worsened pain within the applicable time period. | 6.0% |
| Improved Physical Functioning in Long-Term Care | Examines the percentage of LTC residents who improved or remained independent in transferring and locomotion. Being independent or showing an improvement in these 2 ADLs may indicate an improvement in overall health status and provide a sense of autonomy for the resident. | Higher is better. A higher percentage of this indicator means that more residents improved or remained independent in transferring and locomotion (mid-loss ADLs) within the applicable time period. | NA |
| Worsened Depressive Mood in Long-Term Care | Examines the percentage of LTC residents whose mood from symptoms of depression worsened. Depression affects quality of life and may also contribute to deteriorations in ADLs and an increased sensitivity to pain. | Lower is better. A lower percentage of this indicator means that fewer residents had symptoms of depression that worsened within the applicable time period. | 13.0% |
| Worsened Physical Functioning in Long-Term Care | Examines the percentage of LTC residents who worsened or remained completely dependent in transferring and locomotion. An increased level of dependence on others to assist with transferring and locomotion may indicate deterioration in the overall health status of a resident. | Lower is better. A lower percentage of this indicator means that fewer residents worsened or remained dependent in transferring and locomotion (mid-loss ADLs) within the applicable time period. | NA |
| Worsened Pressure Ulcer in Long-Term Care | Examines the percentage of LTC residents whose stage 2 to 4 pressure ulcer had worsened since the previous assessment. Pressure ulcers can happen when a resident sits or lies in the same position for a long period of time. | Lower is better. A lower percentage of this indicator means that fewer residents had a stage 2 to 4 pressure ulcer that worsened within the applicable time period. | 1.0% |

*Note:* LTC= Long Term Care; ADL= Activities of Daily Living; NA= Not Available. Benchmarks for three QIs in the table are currently not available (for more information on Health Quality Ontario benchmark results, see: https://www.hqontario.ca/Portals/0/documents/system-performance/benchmark-setting-ltc-indicators-feb-2017-en.pdf). Descriptions, interpretations, and benchmarks for Experiencing Pain in Long-Term Care are from [Experiencing Pain in Long-Term

Care] by Canadian Institute for Health Information, (2023b) (https://www.cihi.ca/en/indicators/experiencing-pain-in-long-term-care). Descriptions, interpretations, and benchmarks for Falls in the Last 30 Days in Long-Term Care are from [Falls in the Last 30 Days in Long-Term Care] by Canadian Institute for Health Information, (2023d) (https://www.cihi.ca/en/indicators/falls-in-the-last-30-days-in-long-term-care). Descriptions, interpretations, and benchmarks for Potentially Inappropriate Use of Antipsychotics in Long-Term Care are from [Potentially Inappropriate Use of Antipsychotics in Long-Term Care] by Canadian Institute for Health Information, (2023f) (https://www.cihi.ca/en/indicators/potentially-inappropriate-use-of-antipsychotics-in-long-term-care). Descriptions, interpretations, and benchmarks for Restraint Use in Long-Term Care are from [Restraint Use in Long-Term Care] by Canadian Institute for Health Information, (2023g) (https://www.cihi.ca/en/indicators/restraint-use-in-long-term-care). Descriptions, interpretations, and benchmarks for Experiencing Worsened Pain in Long-Term Care are from [Experiencing Worsened Pain in Long-Term Care] by Canadian Institute for Health Information, (2023c) (https://www.cihi.ca/en/indicators/experiencing-worsened-pain-in-long-term-care). Descriptions, interpretations, and benchmarks for Improved Physical Functioning in Long-Term Care are from [Improved Physical Functioning in Long-Term Care] by Canadian Institute for Health Information, (2023e) (https://www.cihi.ca/en/indicators/improved-physical-functioning-in-long-term-care). Descriptions, interpretations, and benchmarks for Worsened Depressive Mood in Long-Term Care are from [Worsened Depressive Mood in Long-Term Care] by Canadian Institute for Health Information, (2023h) (https://www.cihi.ca/en/indicators/worsened-depressive-mood-in-long-term-care). Descriptions, interpretations, and benchmarks for Worsened Physical Functioning in Long-Term Care are from [Worsened Physical Functioning in Long-Term Care] by Canadian Institute for Health Information, (2023i) (https://www.cihi.ca/en/indicators/worsened-physical-functioning-in-long-term-care). Descriptions, interpretations, and benchmarks for Worsened Pressure Ulcer in Long-Term Care are from [Worsened Pressure Ulcer in Long-Term Care] by Canadian Institute for Health Information, (2023j) (https://www.cihi.ca/en/indicators/worsened-pressure-ulcer-in-long-term-care).

## 2.5 Data Analysis

### *2.5.1 Descriptive Data Analysis*

A descriptive statistical analysis was used to describe characteristics of LTC homes. Median (Mdn) QI values and standard deviations from the not-for-profit ethno-specific and mainstream LTC homes were plotted on the same graph, allowing for a comparison of how the percentage of residents with specific QI (Y-axis) varied over the study's five-year period (X-axis). One-Sample Kolmogorov-Smirnov tests (Massey, 1951) were used to test the assumption of normality of the whole sample (i.e., 131 not-for-profit LTC homes in Ontario) for each of the nine QIs (Appendix F). The null hypothesis of the Kolmogorov- Smirnov test was that the data comes from a normal distribution and rejection of the null hypothesis signified that the data was not normally distributed. Findings (Appendix F) indicate that the data were generally not normally distributed ($D(131) > p = 0.01$ for majority of QIs), thus, Mdn values were used as a measure of central tendency to account for the non-parametric nature of the data. The initial observations guided the subsequent statistical analysis of significance.

### *2.5.2 Significance Testing*

To examine statistically significant differences in Mdn QI performance between not-for-profit ethno-specific and mainstream LTC homes in Ontario, Mann-Whitney U tests were conducted in IBM SPSS Statistics (Version 29) for each of the nine quality indicators. The Mann-Whitney U test is suitable for comparing differences between two independent groups when the dependent variable is not normally distributed (Appendix F) (Laerd Statistics, 2018). In the current study, two independent groups were the types of homes (i.e., categorized as either ethno-specific or mainstream), and the dependent variables were the nine QI's (i.e., percentage of residents in the LTC home experiencing the QI). The null hypothesis of the Mann-Whitney U tests was that the two groups are the same and rejection of the null hypothesis signified that there was a significant difference between the groups. Nine tests were used to assess the main mean effects of LTC home type, and 45 tests were used to assess the significance of 2017-2018, 2018-2019, 2019-2020, 2020-2021, and 2021-2022. To decrease the possibility of type I error, or false

positive (i.e., rejection of the null hypothesis, when the null hypothesis is actually true) and type II error, or a false negative (i.e., failure to reject a null hypothesis, that is actually false) that may occur with repeated tests, the alpha level (p-value) was reduced from 0.05 to 0.02. Reducing the alpha level to 0.02 is particularly useful when samples are different in size (i.e., as was the case with 76 mainstream homes vs. 55 ethno-specific homes), increasing the confidence level that differences between groups are due to home type by 98% (i.e., decreasing the likelihood that differences are due to chance or error to 0.02%). Since the two home types had similar distributions for all nine QIs (Appendix F), the Mann-Whitney U tests were used to compare Mdns between groups (Laerd Statistics, 2018).

# Chapter 3

# 3 Results

Results pertain exclusively to not-for-profit LTC homes in Ontario. Consequently, all further references and discussions will be specifically regarding Ontario not-for-profit homes unless otherwise stated. The results chapter is divided into four sections. The first describes the characteristics of the LTC homes and a summary of the ethno-specific homes by ethnicity, religion, and culture. The second section presents descriptive findings on differences in QI performances between the ethno-specific and mainstream types of LTC homes. The third and the fourth report findings from testing statistical significance between home types and over time.

## 3.1 Characteristics of LTC Homes

Table 3-1 provides a breakdown of the characteristics for the included not-for-profit LTC homes, categorized by type. The 131 LTC homes comprised of 76 (58%) mainstream homes and 55 (42%) ethno-specific homes, and more than half were situated in urban areas. Only two ethno-specific homes (Tsi Ion Kwa Nonh So: Te and Wikwemikong Nursing Home) were in rural areas. As for the size, the 87 (66%) homes were large, having over 100 beds. Among these, 50 were mainstream, and 37 were ethno-specific. The remaining 44 homes were medium in size, with 60-100 beds. Interestingly, most LTC homes were located in the Hamilton Niagara Haldimand region with nearly equal distribution of ethnic and mainstream homes, Champlain region had three times more mainstream than ethno-specific homes, Toronto Central had twice the number of ethnic-specific than mainstream homes, while the Waterloo Wellington region had no ethno-specific homes.

**Table 3-1** Baseline Characteristics of Not-For-Profit LTC Homes in Ontario by Type

| LTC Home | Total N (Column %) | Mainstream Homes **n** (%) | Ethno-Specific Homes **n** (%) |
|---|---|---|---|
| Location | 131 (100) | 76 (58) | 55 (42) |
| Urban | 113 (86) | 60 (79) | 53 (96) |
| Rural | 18 (14) | 16 (21) | 2 (4) |
| Home Size | | | |
| Medium | 44 (34) | 26 (34) | 18 (33) |
| Large | 87 (66) | 50 (66) | 37 (67) |
| HCCSS Region | | | |
| Central | 16 (12) | 8 (50) | 8 (50) |
| Central East | 11 (8) | 3 (27) | 8 (73) |
| Central West | 3 (2) | 1 (33) | 2 (67) |
| Champlain | 18 (14) | 14 (77) | 4 (23) |
| Erie St. Clair | 2 (2) | 1 (50) | 1 (50) |
| Hamilton Niagara Haldimand Brant | 21 (16) | 11 (52) | 10 (48) |
| Mississauga Halton | 8 (6) | 4 (50) | 4 (50) |
| North-East | 11 (8) | 8 (73) | 3 (27) |
| North Simcoe Muskoka | 6 (5) | 4 (66) | 2 (34) |
| North-West | 4 (3) | 3 (75) | 1 (25) |
| South-East | 3 (2) | 2 (66) | 1 (34) |
| South-West | 8 (6) | 7 (88) | 1 (12) |
| Toronto Central | 15 (11) | 5 (33) | 10 (67) |
| Waterloo Wellington | 5 (4) | 5 (100) | 0 (0) |

The ethno-specific LTC homes represented different ethnicities, religions, or cultures (Table 3-2). They delivered ethno-specific LTC to 14 distinct ethnicities, where the homes catering to Chinese-specific care accounted for 23%. The religion-specific homes comprised 10 distinct religions, with homes delivering Christian-specific care, Jewish-specific care, and Mennonite-specific care accounted for most of the homes each. The LTC homes within the cultural category included four distinct cultures of interest, with homes delivering veteran-specific LTC being the only “culture” with more than one designated home.

**Table 3-2** Summary of 55 Ethno-Specific Homes in Ontario by Ethnicity, Religion, and Culture of Focus

| Ethno-Specific Homes | Designation N (%) |
|---|---|
| Ethnicity | 31 (56) |
| Chinese | 7 (23) |
| Dutch | 2 (7) |
| Estonian | 1 (3) |
| Finnish | 3 (10) |
| German | 1 (3) |
| Greek | 1 (3) |
| Indigenous | 5 (16) |
| Italian | 4 (13) |
| Korean | 1 (3) |
| Latvian | 1 (3) |
| Lithuanian | 1 (3) |
| Polish | 1 (3) |
| Slovenian | 1 (3) |
| Ukrainian | 2 (7) |
| Religion | 19 (35) |
| Catholic | 2 (11) |
| Christian | 3 (16) |
| Christian Alliance | 1 (5) |
| Christian Brethren | 1 (5) |
| Church of Christ | 1 (5) |
| Dutch Reform | 2 (11) |
| Jewish | 3 (16) |
| Mennonite | 3 (16) |
| Pentecostal | 1 (5) |
| Seventh Day Adventist | 2 (11) |
| Culture | 5 (9) |
| Culturally Deaf/Deaf Blind | 1 (20) |
| Francophone | 1 (20) |
| Veteran | 2 (40) |
| 2SLGBTQI+ | 1 (20) |

*Note:* 2SLGBTQI+= Acronym used by the Government of Canada to refer to the Canadian community. 2S: Two-Spirit people; L: Lesbian; G: Gay; B: Bisexual; T: Transgender; Q: Queer; I: Intersex, considers sex characteristics beyond sexual orientation, gender identity and gender expression; +: people who identify as part of sexual and gender diverse communities, who use additional terminologies (Government of Canada, 2022).

## 3.2 Differences in Quality Indicator Performances

The following section describes the Mdn differences for nine QIs in two types of LTC homes over a five-year period (Figures 1-9). Although the indicators have different

ranges, a ten-point scale on the Y-axis (i.e., percent of residents with a QI) was used for all figures.

### *3.2.1 Experiencing Pain in Long-Term Care*

Overall, the percentage of LTC residents who experienced pain was between 2.0-5.0% (Figure 3-1). Ethno-specific LTC homes consistently performed better than mainstream LTC homes (2.0-2.7%), remaining relatively stable through the study period and achieving the best performance in 2019-2020 (Mdn = 2.0%). The percentage of residents in the mainstream homes experiencing pain has slightly decreased (1.4%) over the five-year period, while the percentage of residents in the ethno-specific homes remained relatively stable (within 0.7%).

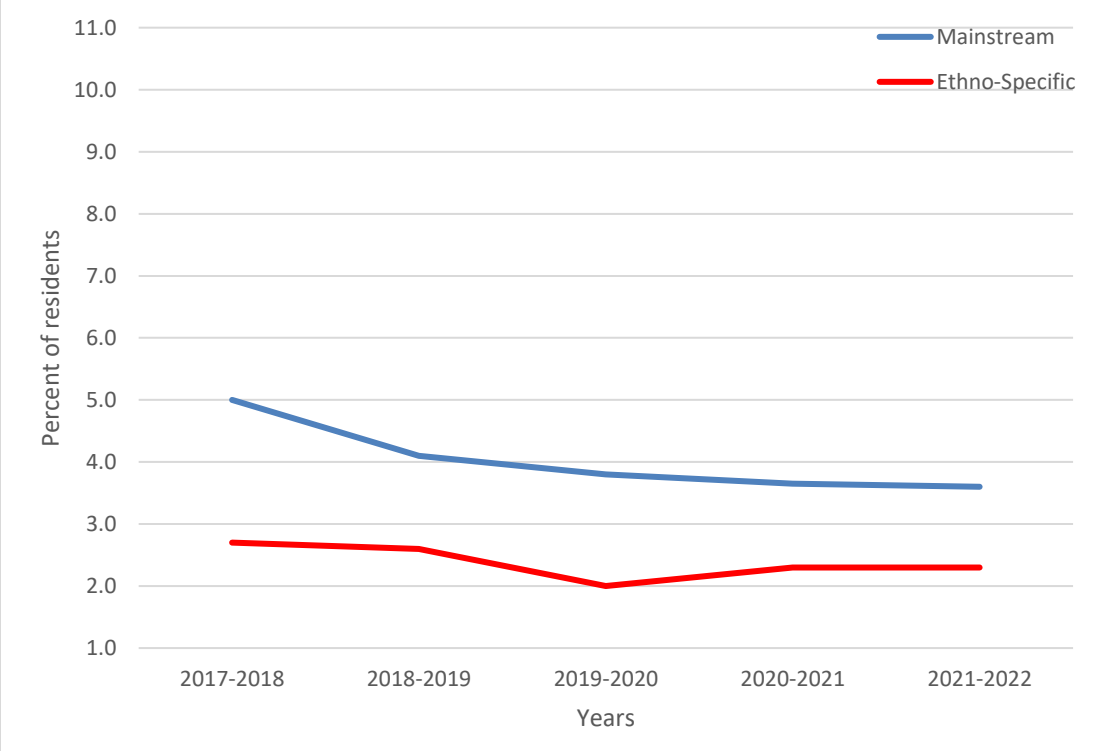



**Figure 3-1** Percentage of Residents Experiencing Pain in Mainstream and Ethno-specific Long-Term Care homes in Ontario Over the Five-Year Period (2017-2022)

### *3.2.2 Experiencing Worsened Pain in Long-Term Care*

Overall, 7.3-10.9% of LTC residents experienced worsened pain in LTC (Figure 3-2), which is 1.3- 4.9% above the 6.0% benchmark. However, the percentage in both mainstream and ethno-specific LTC homes has decreased over the five-year period. Ethno-specific LTC homes had a lower initial percentage in 2017-2018 (Mdn = 9.1%) and showed stability throughout the period, with a nearly 2.0% decrease in 2021-2022 (Mdn = 7.3%). Mainstream LTC homes initially had a higher percentage in 2017-2018 (Mdn = 10.9%), but they steadily decreased between 2018-2019 (Mdn = 10.7%) and 2020-2021 (Mdn = 9.4%), with a slight increase in 2021-2022 (Mdn = 9.7%).

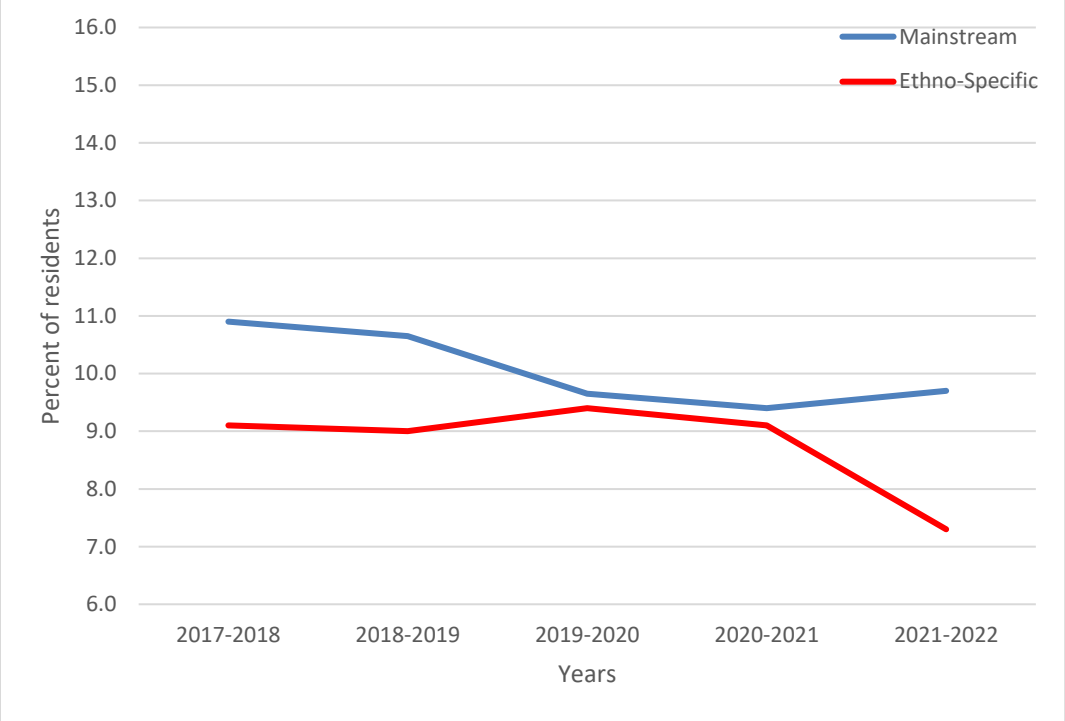



**Figure 3-2** Percentage of Residents Experiencing Worsened Pain in Mainstream and Ethno-specific Long-Term Care Homes in Ontario Over the Five-Year Period (2017-2022)

### *3.2.3 Falls in The Last 30 Days in Long-Term Care*

The overall percentage of residents who fell in the last 30 days was 13.2-17.0% (Figure 3-3), which is 4.2-8.0% above the 9.0% benchmark. Ethno-specific LTC had a slightly higher percentage in 2017-2018 (Mdn = 15.1%), but it decreased and remained the same (Mdn = 14.7%) between 2018-2019 and 2020-2021 before a sharp decline of nearly 2.0% in 2021-2022 (Mdn = 13.2%). Mainstream LTC homes had a relatively stable 16.2-17% of residents who fell over the five-year period, experiencing its lowest percentage in 2019-2020 (Mdn = 16.2%) before reaching its highest and most constant percentage of 17.0% in both 2020-2021 and 2021-2022.

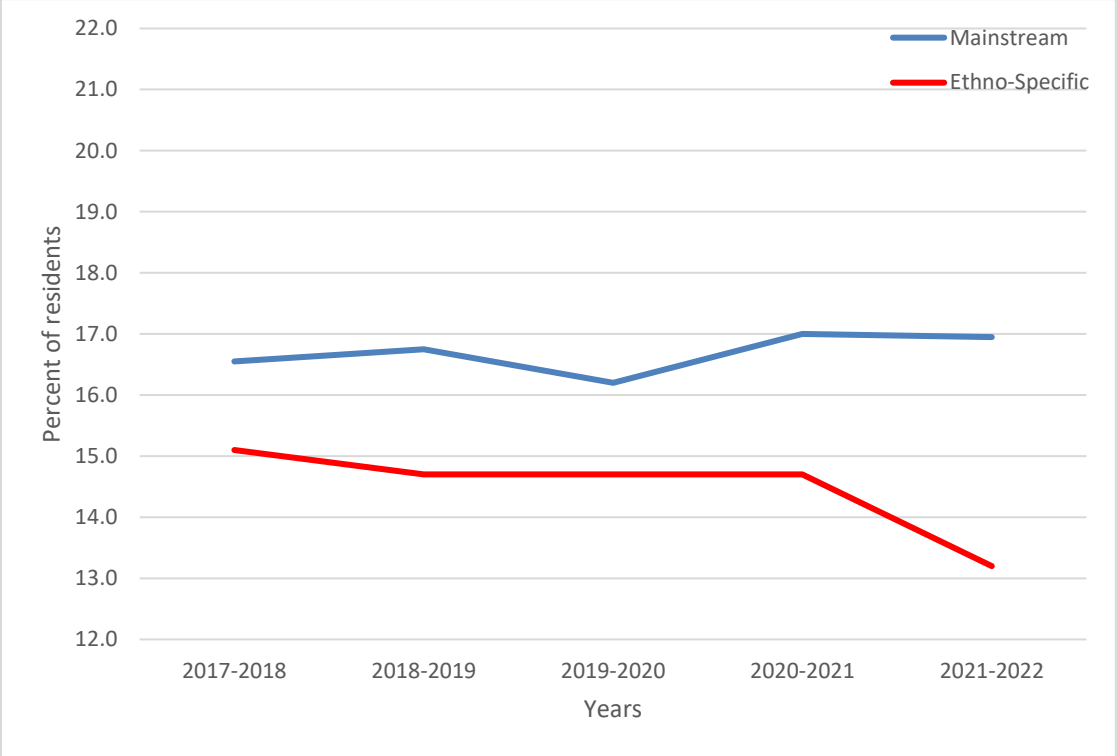
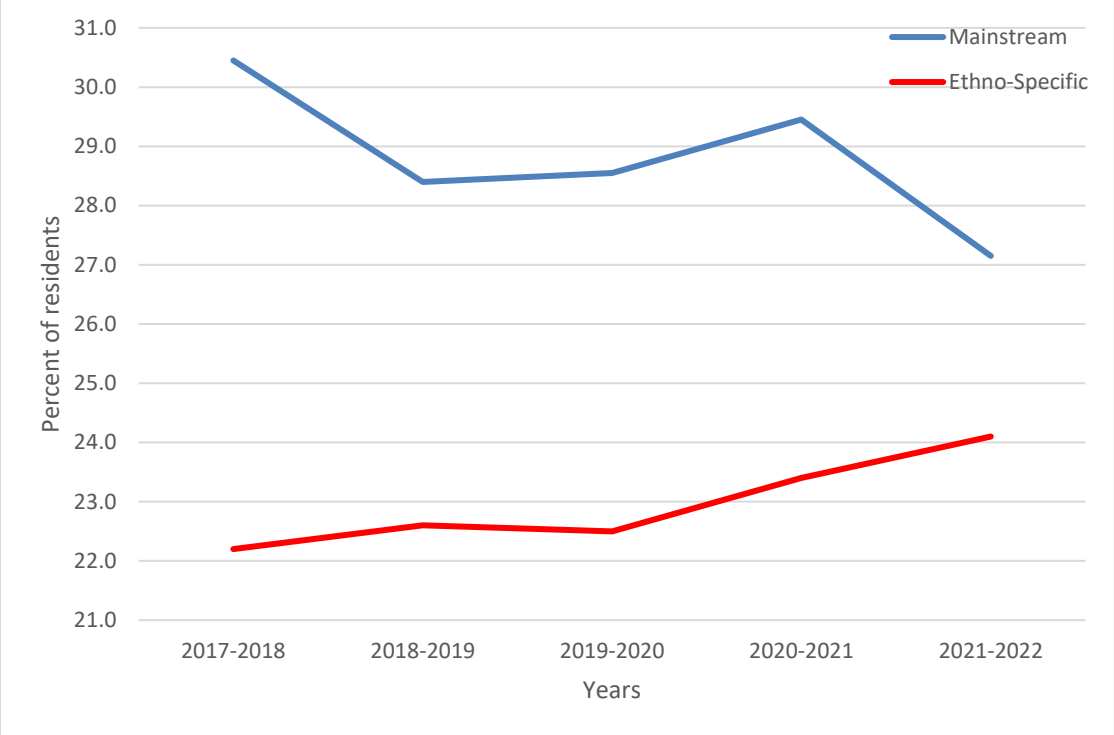



**Figure 3-3** Percentage of Residents Who Fell in The Last 30 Days in Mainstream and Ethno-specific Long-Term Care Homes in Ontario Over the Five-Year Period (2017-2022)

### *3.2.4 Improved Physical Functioning in Long-Term Care*

Overall, the percentage of residents with improved physical functioning was between 22.2-30.5%, with an increased percentage of residents in the ethno-specific LTC homes and a decreased percentage of residents in the mainstream LTC homes reporting improved physical functioning over the five-year period (Figure 3-4). Ethno-specific LTC homes had the smallest recorded percentage in 2017-2018 (Mdn = 22.2%), with considerable improvements (1.9%) by the end of the period in 2021-2022 (Mdn = 24.1%). In contrast, the mainstream LTC homes had the highest recorded percentage in 2017-2018 (Mdn = 30.5%), followed by a steep 2.1% decline in 2018-2019 (Mdn = 28.4%) and a steady increase until 2020-2021 (Mdn = 29.5%), where the percentage of resident dropped by abruptly to 27.2% in 2021-2022.




*Note:* Unlike other eight QIs, higher percentage on the Improved Physical Functioning indicates a better performance

**Figure 3-4** Percentage of Residents Experiencing Improved Physical Functioning in Mainstream and Ethno-specific Long-Term Care Homes in Ontario Over the Five-Year Period (2017-2022)

### *3.2.5 Potentially Inappropriate Use of Antipsychotics in Long-Term Care*

Overall, the percentage of residents who experienced potentially inappropriate use of antipsychotics was between 16.0-19.5% (Figure 3-5), which is 3.0% below and 0.5% above the 19.0% benchmark. Percentage of residents in both ethno-specific and mainstream LTC homes had nearly identical patterns. For ethno-specific homes, the percentage of residents fell from 17.7% in 2017-2018 to 16.0% in 2019-2020, steadily increasing back to 17.7% of residents in 2021-2022. Similarly, the percentage of residents in mainstream LTC homes between 2017-2018 (Mdn = 19.2%) and 2021-2022 (Mdn = 19.5%) experienced an abrupt decline in 2019-2020 (Mdn = 16.5). This "v"-shaped pattern in the percentages of residents for both types of LTC homes reveals that fewer residents had experienced potentially inappropriate use of antipsychotics at the beginning of COVID-19 pandemic than at any time before or after within the five-year period.

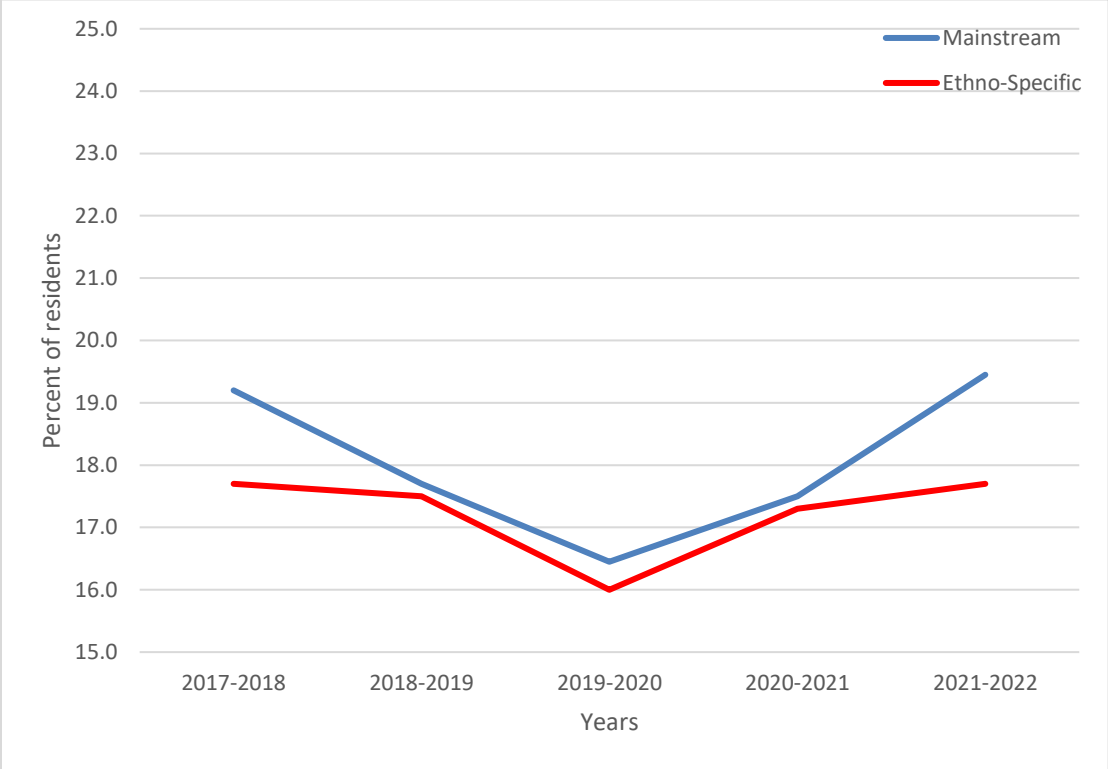



**Figure 3-5** Percentage of Residents with Potentially Inappropriate Use of Antipsychotics in Mainstream and Ethno-specific Long-Term Care Homes in Ontario Over the Five-Year Period (2017-2022)

### *3.2.6 Restraint Use in Long-Term Care*

Overall, the percentage of residents who experienced restraint use in both ethno-specific and mainstream was between 1.1-3.7% (Figure 3-6), which is 1.9% below and 0.7% above the 3.0% benchmark. The percentage of residents in ethno-specific (Mdn = 1.1-2.5%) and mainstream (Mdn = 1.4-3.7%) LTC homes experienced a steady decline in prevalence over the five-year period, indicating a positive shift towards reduced use of restraints.

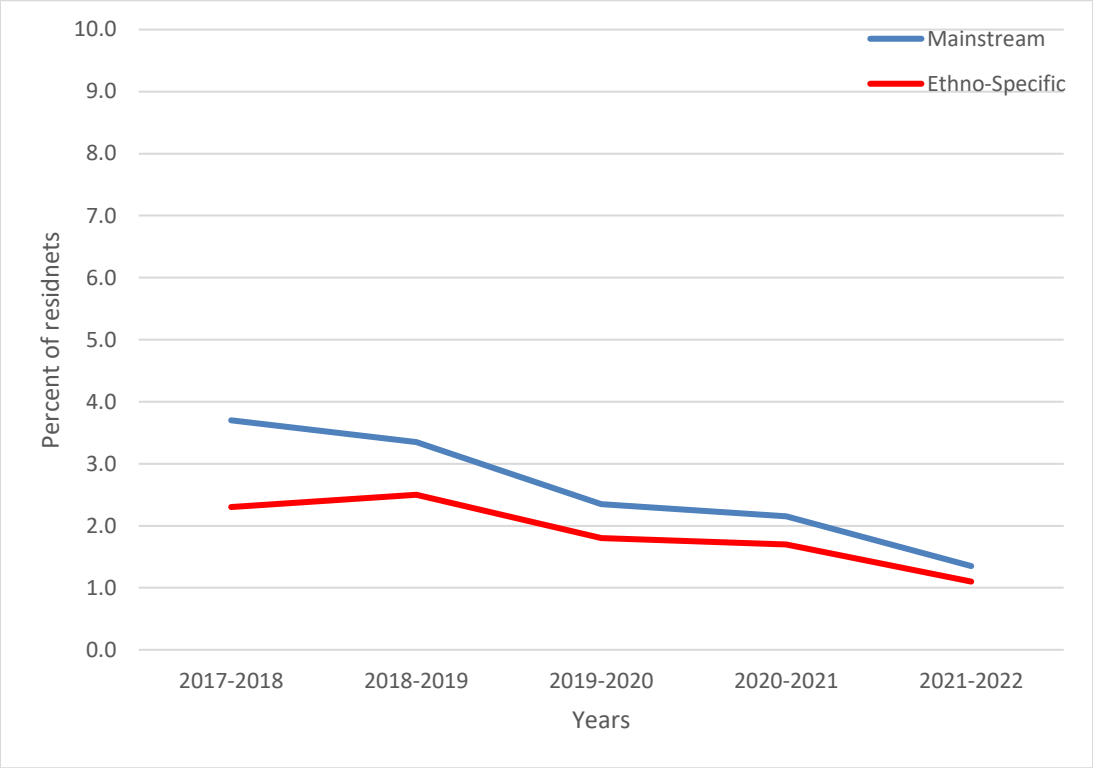



**Figure 3-6** Percentage of Residents Experiencing Restraint Use in Mainstream and Ethno-specific Long-Term Care Homes in Ontario Over the Five-Year Period (2017-2022)

### *3.2.7 Worsened Depressive Mood in Long-Term Care*

Overall, the percentage of residents who experienced worsened depressive moods in both ethno-specific and mainstream LTC homes ranged between 19.6- 26.8% (Figure 3-7), which is significantly above (6.6-13.8%) the 13.0% benchmark. However, residents in both home types had relatively the same pattern of decreased incidence over the five-year period. In 2017-2018, both ethno-specific (Mdn = 21.3%) and mainstream (Mdn = 26.8%) LTC homes reported the highest incidence of residents experiencing worsened depressive mood, followed by a relatively steady decline until 2021-2022 (ethno-specific Mdn = 19.6%; mainstream Mdn = 22.5%), with a slight increase in incidence in 2019-2020 (ethno-specific Mdn= 20.9%; mainstream Mdn= 26.2%).

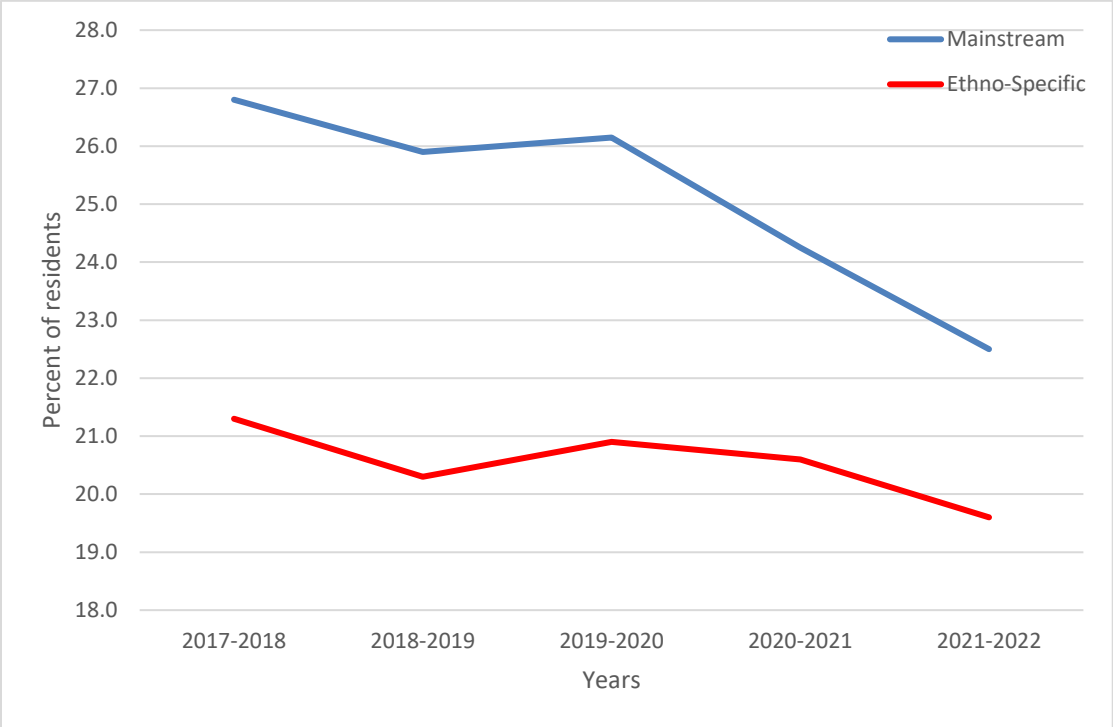



**Figure 3-7** Percentage of Residents Experiencing Worsened Depressive Mood in Mainstream and Ethno-specific Long-Term Care Homes in Ontario Over the Five-Year Period (2017-2022)

### *3.2.8 Worsened Physical Functioning in Long-Term Care*

The percentage of residents who experienced worsened physical functioning in ethno-specific and mainstream LTC homes ranged between 32.2% and 37.0% over the five-year period (Figure 3-7). The greatest difference in incidence between residents in ethno-specific (Mdn = 32.2%) and mainstream (Mdn = 37.0%) LTC homes was in 2017-2018, followed by the smallest difference in 2019-2020 where residents in ethno-specific (Mdn = 34.6%) homes experienced a sharp increase in incidence and residents in mainstream (Mdn = 35.6%) homes experienced a steady decrease. By 2021-2022, the percentage of residents in ethno-specific LTC homes decreased slightly to 33.1%, exhibiting an increase in incidence from the start of the five-year period. In contrast, the percentage of residents in mainstream LTC homes decreased by 2021-2022 (Mdn = 35.5%), revealing a stable decline in worsened physical functioning in mainstream LTC homes over time.

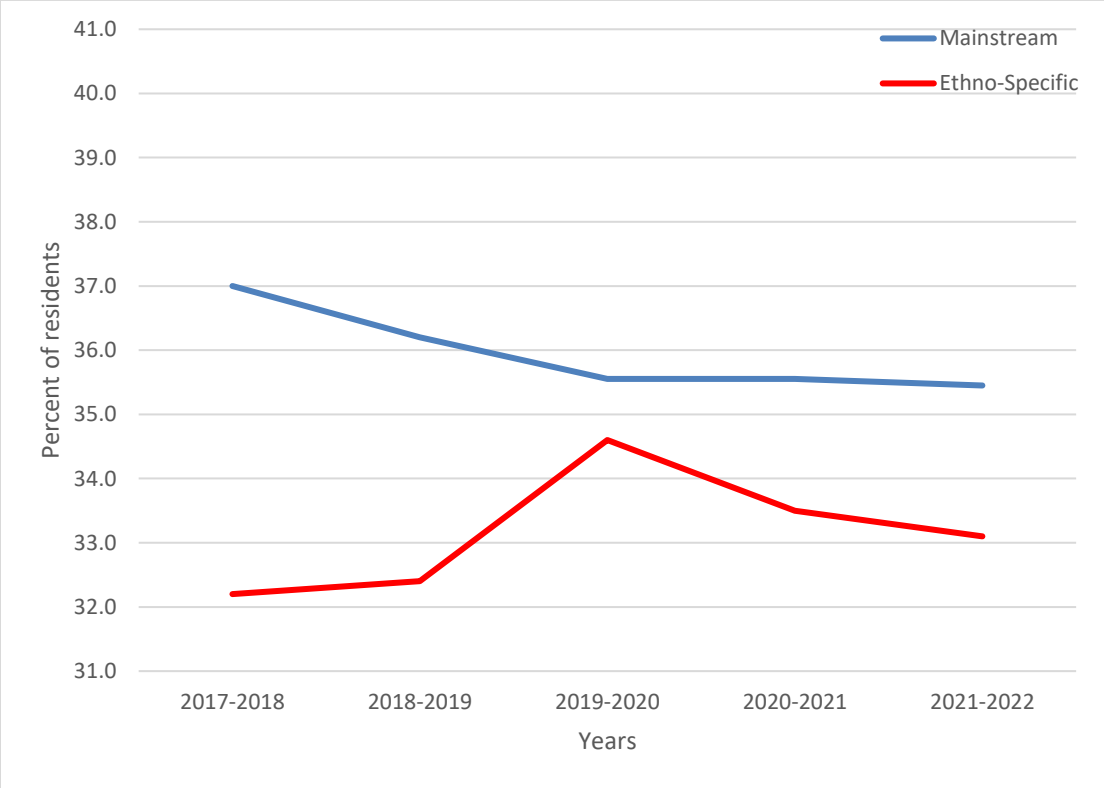



**Figure 3-8** Percentage of Residents Experiencing Worsened Physical Functioning in Mainstream and Ethno-specific Long-Term Care Homes in Ontario Over the Five-Year Period (2017-2022)

### *3.2.9 Worsened Pressure Ulcer in Long-Term Care*

Overall, the percentage of residents experiencing worsened pressure ulcers in LTC homes was stable between 1.9-2.8% (Figure 3-9), which is 0.9-1.8% above the 1.0% benchmark. Residents in both home types experienced very minimal fluctuations over the five-year period.

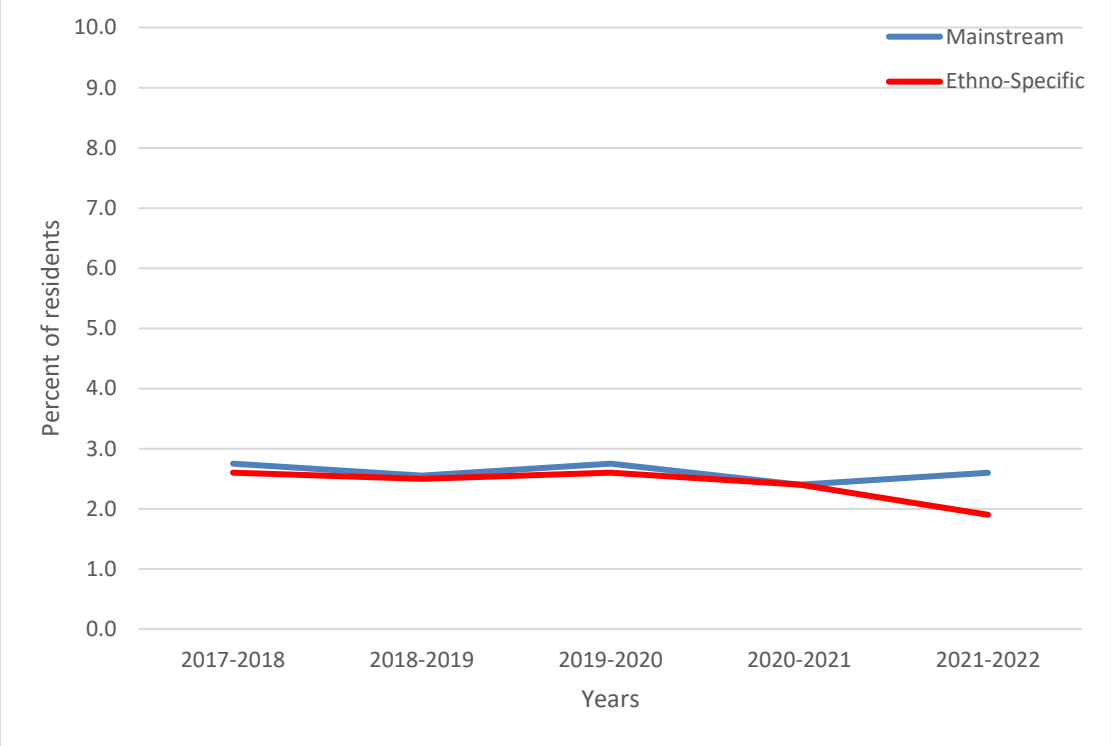



**Figure 3-9** Percentage of Residents Experiencing Worsened Pressure Ulcers in Mainstream and Ethno-specific Long-Term Care Homes in Ontario Over the Five-Year Period (2017-2022)

In summary, the performance on QIs was consistently better for ethno-specific LTC homes, except for improved physical functioning.

## 3.3 Significance Between LTC Home Type

The results of testing statistical significance are presented in Table 3-3. The percentage of residents who experienced pain was significantly lower in the ethno-specific LTC homes than in the mainstream LTC homes (Mdn = 2.2 in ethno-specific vs. 3.9 in mainstream, *p* value = 0.02). Additionally, the percentage of residents who had a fall in the last 30 days

and experienced worsened depressive mood was significantly lower in the ethno-specific LTC homes than in the mainstream LTC homes (Mdn = 14.4 in ethno-specific vs. 17.2 in mainstream, p value = 0.015; Mdn = 19.7 in ethno-specific vs. 25.6 in mainstream, p value = 0.012 respectively). The percentage of residents who experienced improved physical functioning was significantly higher in the mainstream LTC homes (Mdn = 21.7 in ethno-specific vs. Mdn = 27.7 in mainstream, p value = <.001). There was no significant difference in the percentage of residents experiencing worsened pain, potentially inappropriate use of antipsychotics, restraint use, worsened physical functioning, and worsened pressure ulcers in the ethno-specific homes compared to mainstream LTC homes (Table 3-3).

**Table 3-3** Results of Mann-Whitney U Test Between Home Types Per Quality Indicator

| Quality Indicator | Mainstream | | Ethno-Specific | | Mann-Whitney U | *z* | *p* |
|---|---|---|---|---|---|---|---|
| | Mdn | SD | Mdn | SD | | | |
| Experiencing Pain | 3.9 | 5.1 | 2.2 | 4.6 | 1,590.00 | -2.33 | 0.020* |
| Experiencing Worsened Pain | 9.9 | 4.9 | 9.3 | 4.5 | 1,852.00 | -1.11 | 0.267 |
| Falls in the Last 30 Days | 17.2 | 4.3 | 14.4 | 4.8 | 1,567.50 | -2.44 | 0.015* |
| Improved Physical Functioning | 27.7 | 8.9 | 21.7 | 8.2 | 1,333.00 | -3.53 | <0.001* |
| Potentially Inappropriate Use of Antipsychotics | 18.6 | 5.5 | 17.8 | 7.2 | 1,999.00 | -0.42 | 0.671 |
| Restraint Use | 3.2 | 5.5 | 2.5 | 3.6 | 1,910.00 | -0.84 | 0.401 |
| Worsened Depressive Mood | 25.6 | 9.0 | 19.7 | 9.0 | 1,551.50 | -2.51 | 0.012* |
| Worsened Physical Functioning | 36.5 | 6.1 | 33.6 | 5.9 | 1,672.50 | -1.95 | 0.052 |
| Worsened Pressure Ulcer | 2.7 | 1.3 | 2.6 | 1.0 | 1,938.50 | -0.71 | 0.480 |

*Note:* *= significance at $p < 0.02$, Mdn= Median, SD= Standard Deviation.

## 3.4 Testing Differences in Quality Indicators Between Mainstream and Ethno-Specific LTC Homes From 2017 to 2022

The results of Mann-Whitney U tests to analyze the statistically significant differences of each fiscal year of QIs between the mainstream and ethno-specific LTC homes between 2017-2022 are presented in Table 3-4. Despite some variation across years, by-year analysis mirrored the overall analysis, where ethno-specific homes performed better on indicators for experiencing pain, falls in the last 30 days, and worsened depressive mood, while mainstream homes performed better on improved physical functioning.

**Table 3-4** Results from Mann-Whitney U test Per Fiscal Year of Quality Indicator

| Indicator | Year | Mainstream | | Ethno-Specific | | Mann-Whitney U | *z* | *p* |
|---|---|---|---|---|---|---|---|---|
| | | Mdn | SD | Mdn | SD | | | |
| QI1 - Experiencing Pain | 2017 | 5.0 | 6.3 | 2.7 | 5.0 | 1,574.5 | -2.40 | 0.016* |
| | 2018 | 4.1 | 4.9 | 2.6 | 5.3 | 1,744.5 | -1.61 | 0.107 |
| | 2019 | 3.8 | 4.9 | 2 | 5.7 | 1,668.0 | -1.97 | 0.049 |
| | 2020 | 3.7 | 5.9 | 2.3 | 5.1 | 1,647.5 | -2.06 | 0.039 |
| | 2021 | 3.6 | 6.9 | 2.3 | 5.2 | 1,645.5 | -2.07 | 0.038 |
| QI2 - Experiencing Worsened Pain | 2017 | 10.9 | 5.0 | 9.1 | 5.0 | 1,820.5 | -1.26 | 0.209 |
| | 2018 | 10.7 | 5.3 | 9 | 5.4 | 1,895.0 | -0.91 | 0.363 |
| | 2019 | 9.7 | 5.7 | 9.4 | 4.9 | 1,944.0 | -0.68 | 0.496 |
| | 2020 | 9.4 | 5.9 | 9.1 | 5.3 | 1,948.5 | -0.66 | 0.509 |
| | 2021 | 9.7 | 5.1 | 7.3 | 5.1 | 1,745.0 | -1.61 | 0.108 |
| QI3 - Falls in the Last 30 Days | 2017 | 16.6 | 4.9 | 15.1 | 5.5 | 1,710.0 | -1.77 | 0.076 |
| | 2018 | 16.8 | 4.7 | 14.7 | 5.1 | 1,678.0 | -1.92 | 0.055 |
| | 2019 | 16.2 | 4.8 | 14.7 | 5.9 | 1,669.5 | -1.96 | 0.050 |
| | 2020 | 17.0 | 5.1 | 14.7 | 5.3 | 1,612.5 | -2.23 | 0.026 |
| | 2021 | 17.0 | 5.7 | 13.2 | 5.6 | 1,475.5 | -2.87 | 0.004* |
| QI4 - Improved Physical Functioning | 2017 | 30.5 | 9.4 | 22.2 | 10.3 | 1,244.5 | -3.94 | <.001* |
| | 2018 | 28.4 | 9.8 | 22.6 | 8.9 | 1,420.5 | -3.12 | 0.002* |
| | 2019 | 28.6 | 10.7 | 22.5 | 9.0 | 1,390.5 | -3.26 | 0.001* |
| | 2020 | 29.5 | 10.1 | 23.4 | 9.9 | 1,542.5 | -2.55 | 0.011* |
| | 2021 | 27.2 | 9.5 | 24.1 | 10.1 | 1,630.0 | -2.15 | 0.032 |
| QI5 - Potentially Inappropriate Use of Antipsychotics | 2017 | 19.2 | 6.4 | 17.7 | 8.7 | 1,891.5 | -0.93 | 0.355 |
| | 2018 | 17.7 | 5.8 | 17.5 | 7.8 | 2,078.5 | -0.05 | 0.957 |
| | 2019 | 16.5 | 6.5 | 16 | 6.9 | 2,042.0 | -0.22 | 0.823 |
| | 2020 | 17.5 | 7.1 | 17.3 | 8.4 | 2,037.5 | -0.25 | 0.807 |
| | 2021 | 19.5 | 8.1 | 17.7 | 9.2 | 2,114.0 | 0.11 | 0.911 |
| QI6 - Restraint Use | 2017 | 3.7 | 7.4 | 2.3 | 6.0 | 1,799.0 | -1.36 | 0.174 |
| | 2018 | 3.4 | 6.4 | 2.5 | 4.0 | 1,943.5 | -0.69 | 0.494 |
| | 2019 | 2.4 | 6.9 | 1.8 | 3.8 | 1,934.5 | -0.73 | 0.467 |
| | 2020 | 2.2 | 5.0 | 1.7 | 4.1 | 2,004.5 | -0.40 | 0.688 |
| | 2021 | 1.4 | 5.1 | 1.1 | 3.4 | 1,821.5 | -1.27 | 0.205 |
| QI7 - Worsened Depressive Mood | 2017 | 26.8 | 9.7 | 21.3 | 11.4 | 1,520.5 | -2.66 | 0.008* |
| | 2018 | 25.9 | 10.0 | 20.3 | 10.1 | 1,668.0 | -1.97 | 0.049 |
| | 2019 | 26.2 | 10.3 | 20.9 | 9.7 | 1,579.0 | -2.38 | 0.017* |
| | 2020 | 24.3 | 10.6 | 20.6 | 9.4 | 1,679.0 | -1.83 | 0.067 |
| | 2021 | 22.5 | 8.9 | 19.6 | 9.7 | 1,572.0 | -2.42 | 0.016* |
| QI8 - Worsened Physical Functioning | 2017 | 37.0 | 6.7 | 32.2 | 7.7 | 1,486.0 | -2.82 | 0.005* |
| | 2018 | 36.2 | 6.7 | 32.4 | 6.9 | 1,732.5 | -1.67 | 0.095 |
| | 2019 | 35.6 | 8.1 | 34.6 | 6.5 | 1,870.0 | -1.03 | 0.305 |
| | 2020 | 35.6 | 8.4 | 33.5 | 6.7 | 1,827.5 | -1.22 | 0.221 |
| | 2021 | 35.5 | 7.4 | 33.1 | 6.9 | 1,836.0 | -1.19 | 0.236 |
| QI9 - Worsened Pressure Ulcer | 2017 | 2.8 | 1.7 | 2.6 | 1.3 | 2,014.5 | -0.35 | 0.725 |
| | 2018 | 2.6 | 1.4 | 2.5 | 1.3 | 2,125.5 | 0.17 | 0.868 |
| | 2019 | 2.8 | 1.5 | 2.6 | 1.4 | 1,909.0 | -0.85 | 0.398 |
| | 2020 | 2.4 | 1.4 | 2.4 | 1.5 | 1,981.5 | -0.51 | 0.613 |
| | 2021 | 2.6 | 1.7 | 1.9 | 1.5 | 1,548.5 | -2.53 | 0.012* |

*Note:* *= significance at $p < 0.02$, Mdn= Median, SD= Standard Deviation.

# Chapter 4

## 4 Discussion

This study used publicly available LTC home data from CIHI's CCRS to compare performance on nine QIs between not-for-profit ethno-specific and mainstream LTC homes in Ontario over the period of five years (2017-2022). Findings are discussed in the context of recent literature and policies to identify whether differences in outcomes reflect quality improvement plans and initiatives. The strengths and limitations of the study are summarized. The chapter concludes with directions for future research and the potential application in LTC practice.

Statistically significant differences suggested better performance of ethno-specific LTC homes in fewer residents experiencing pain, falls in the last 30 days, and worsened depressive mood, and better performance of mainstream homes in more residents experiencing improved physical functioning. While slight variations were found across the five-year period, the statistical significance tests confirmed that ethno-specific LTC homes performed better on the same three QIs, while mainstream homes performed better on the same one QI over time. Moreover, although the ethno-specific LTC homes performed consistently better (i.e., lower % residents) than the mainstream LTC homes on the potentially inappropriate use of antipsychotics, restraint use, experiencing worsened pain, worsened physical functioning, and worsened pressure ulcers, the differences were not statistically significant.

According to Health Quality Ontario (2017), when LTC homes meet or surpass a benchmark, it is a marker that the homes provide high-quality care for the assessed QI. Homes that do not meet the benchmark for a particular indicator should consider how far from the benchmark they are and consider developing a quality improvement strategy. Compared to the six Ontario benchmarks currently available from Health Quality Ontario, the ethno-specific homes consistently surpassed the benchmark (Table 2-2) for potentially inappropriate use of antipsychotics (Figure 3-5) and the benchmark for restraint use (Figure 3-6) while the mainstream homes had slightly met these benchmarks over the five years. Although the homes did not meet or surpass the benchmarks for the

other four QIs, the ethno-specific homes were constantly closer to the benchmarks than the mainstream homes.

As presented in Introduction, changing immigration policies and population aging in Canada have led to both an increase in newcomers and ethnic, religious, and cultural diversity from various source regions. Study findings on the ethnic makeup of the included ethno-specific homes revealed that homes providing Chinese-specific services were the most prevalent (Table 3-2), followed by homes catering Indigenous, Italian, Finnish, Ukrainian, and Estonian-specific services. New immigrants tend to settle in areas where they have existing social networks, economic opportunities, and employment prospects, as well as a general attraction to the region (Statistics Canada, 2022b). As such, nine out of 10 immigrants live in one of Canada's 41 census metropolitan areas (defined as large urban centres of over 100,000 residents), with Toronto having the largest proportion of immigrants overall, 29.5% of all immigrants in Canada (Statistics Canada, 2022b). Study findings revealed that most not-for-profit LTC homes were in urban locations (86% of total homes). With only 3.2% of recent immigrants settled in rural areas (Statistics Canada, 2022b), it is unsurprising that only two ethno-specific LTC homes (out of 55) were in rural locations. Additionally, both these rural ethno-specific homes provided Indigenous-specific services, indicating that ethno-specific LTC homes catering to residents from diverse source countries are all in urban locations. At the HCCSS region level, there were twice as many ethno-specific homes than mainstream homes in Toronto Central, and almost three times as many ethno-specific homes in Central East (Table 3-1). These findings highly reflect immigration distribution patterns reported in the 2021 Census. At the provincial level, nearly half (46.6%) of the population living in the Toronto census metropolitan area are immigrants (Statistics Canada, 2022b).

Findings on the religious makeup of the ethno-specific homes were also expected, revealing that most homes catered to Christian, Mennonite, and Jewish services (Table 3-2). In 2021, more than 19.3 million people reported a Christian religion, or just over half of the Canadian population (53.3%) (Statistics Canada, 2022c). Moreover, of the 545,000 people who reported being White and having a religion other than

Christianity, Jewish was the most common religion reported (286,000 people) (Statistics Canada, 2022c).

All five LTC homes in the Waterloo Wellington region were mainstream, similar to South-West, North-East, and Champlain regions that also had disproportionately fewer ethno-specific homes in the area. Among Canada's 41 largest urban centres, the proportion of immigrants was above the national average of 23.0% in Kitchener–Cambridge–Waterloo (25.8%), Hamilton (25.6%), and Windsor (23.3%) (Statistics Canada, 2022b). With 10 ethno-specific homes in the Hamilton Niagara Haldimand Brant region (which oversees LTC homes in Hamilton), it is surprising that no not-for-profit homes in the Waterloo Wellington region (which oversees LTC homes in Kitchener–Cambridge–Waterloo) were ethno-specific. Furthermore, the census found that an increasing number of recent immigrants have settled in the Waterloo Wellington region, where the share of recent immigrants almost doubled in Kitchener–Cambridge–Waterloo (from 1.2% in 2016 to 2.1% in 2021) (Statistics Canada, 2022b).

The descriptive findings revealed that for all but one QI, ethno-specific LTC homes had fewer residents experiencing adverse health outcomes. These findings were consistent with the literature. As mentioned in Introduction, linguistic differences make it increasingly difficult to access appropriate healthcare services in Western countries. It is possible that the ethno-specific LTC staff, that speak the language of the resident, are making it easier for residents to communicate their care needs and consequently receive appropriate help. Linguistic familiarity and improved communication between staff and residents in the ethno-specific LTC homes may have also contributed to the lower percentage of residents being given antipsychotics inappropriately in this home type. As the Canadian Task Force on Mental Health Issues Affecting Immigrants and Refugees (1988) found, linguistic and cultural differences between practitioners and immigrants requiring mental health care in Canada often prove ineffective in achieving successful treatment. For example, Lai (2000; 2004; 2005) used a Chinese version of the 15-item Geriatric Depression Scale and found a link between linguistic barriers to gaining access to healthcare services, a lower level of identification with Chinese health beliefs, and a higher prevalence of depressive symptoms reported by migrant Chinese OAs in Canada. As 23% of the ethno-specific LTC homes included in the present study catered to

Chinese-specific services, it is unsurprising that a lower percentage of residents in these homes had experienced worsened depressive mood. Cultural familiarity of the ethno-specific LTC homes may also be a factor in residents' recovery from adverse health conditions, contributing to lower QI percentages. In another study, examining how Polish, Jewish, and Western European OAs adapt to mainstream LTC, Kahana et al. (1993) found a direct link between the confidence of immigrant OAs ability to age well and the LTC home providing care and services that are culturally congruent with their beliefs.

At the time of this study, to the author's knowledge, there were no peer-reviewed articles reporting a comparative analysis of all nine QIs in ethno-specific and mainstream LTC homes. Several studies used select few QIs for diverse purposes. For example, Mashouri et al. (2020) investigated QI performance, not separated by the type of LTC home, to predict future inspection performance in Ontario and found that worsened pressure ulcers, experiencing worsened pain, and restraint use are the top three QIs associated with poor inspection reports. Batista et al. (2021) examined five QIs (i.e., inappropriate use of antipsychotics, worsened depressive mood, experiencing pain, falls in the last 30 days, and restraint use) in Francophone-specific and mainstream LTC homes and found that fewer Francophones residing in French-specific LTC homes experienced inappropriate use of antipsychotics and a worsened depressive mood. These findings align with the findings in the present study.

Interestingly, Batista et al. (2021) also found that compared to Francophones residing in mainstream LTC homes, a greater percentage of Francophones residing in French-specific LTC homes experienced pain (9.4% vs. 13.5%). Findings from the present study suggest that both ethno-specific and mainstream LTC homes are doing well, keeping the percentage of LTC residents who experienced pain between 2-5%. These findings may be attributed to FLTCA (2021) implementation within the homes. Under the Ontario Regulation 246/22, every LTC home licensee must have an interdisciplinary "pain management program to identify pain in residents and manage pain." (c. 2, s. 53[1]4, O. Reg. 246/22, 2022). In a study assessing physicians' ability to detect pain among LTC home residents, treating physicians were not able to detect pain in 34% of LTC residents known to be suffering from pain (Sengstaken & King, 1993).

The under-management of pain in LTC was most significant for persons with cognitive impairments and limited ability to communicate. When using the RAI-MDS for the assessment of pain, clinicians are instructed to ask simple and direct questions about the experience of pain and to rely on self-report when possible (Gallant et al., 2020). In the current study, it is possible that fewer residents in the ethno-specific homes experienced pain due to linguistic and cultural familiarity between the residents and staff, making it easier to detect and communicate.

Previous research on the prevalence of falls in Canadian LTC homes reports that approximately 50% of all residents will experience at least one fall each year (Kuhnow et al., 2022). The present study found that the Mdn percentage of residents who fell in the past 30 days remained consistent between 13.2-17% over the five-year period. This is a substantial difference that could be explained by homes abiding by subsection 53 (1)1 of the Ontario Regulation 246/22, which states that "*every licensee of a long-term care home shall ensure that a falls prevention and management program to reduce the incidence of falls and the risk of injury is developed and implemented in the home*." (c. 2, s. 53[1]4, O. Reg. 246/22, 2022). Various fall prevention initiatives have been created that could have contributed to reducing falls, such as Best Practices Toolkit: Falls Prevention and Management: A Self Learning Package (Registered Nurses' Association of Ontario, 2007), and Quality Improvement Road Map to Preventing Falls (Residents First, 2010).

In a systematic literature review examining fall rates between Asian (including Asian, Chinese, Filipino and Japanese), Black (including African-American, Afro-Caribbean, Black, and Black-African), Hispanic (including Latino and Hispanic) and White (including Australian-born Australian, Caucasian, European-American, Italian-born Australian and Non-Hispanic White) community-dwelling OAs, the Asian group demonstrated significantly lower fall prevalence than all other ethnic groups (Wehner-Hewson et al., 2022). In another systematic literature review on the incidence and risk factors for falls in Chinese OAs, the findings revealed a consistently lower incidence of self-reported falls in Chinese OAs than in Caucasian OAs, although the types and prevalence of risk factors were not dissimilar from those found in studies of Caucasian OAs (Kwan et al., 2011). Although both these literature reviews focused on community-

dwelling OAs, some ethnic groups (i.e., Chinese) seem to have a lower incidence of falling, which might carry over into the LTC sector. The lower percentage might also be a result of some cultures reluctancy to self-report adverse events groups (Wehner-Hewson et al., 2022). However, there is a lack of sufficient evidence about ethnic LTC homes to support this claim.

The current study findings on incidence QIs may reflect the healthy immigrant effect, mentioned in Introduction. In a study conducted by Statistics Canada and Citizenship and Immigration Canada to learn more about how new immigrants adapt to life in Canada, Fuller-Thomson et al. (2011) used the Longitudinal Survey of Immigrants to Canada to investigate baseline factors predicting health decline among immigrants four years after arriving in Canada. The single largest predictor of health decline was reporting 'excellent' health status six months after arriving in Canada. Immigrants in this situation had 25 times greater odds of reporting a health decline than those who reported 'good' health immediately after arriving. Immigrants with limited English or French language skills had 19% higher odds of reporting a health decline than those who spoke English or French well. Furthermore, each additional decade of age was associated with 34% higher odds of health decline. Immigrants from India and other South Asian countries, China, and Eastern Europe had more than twice the odds of reporting a health decline than immigrants from North America or Oceania. The current study found that there are no ethno-specific homes catering services to Indian or South Asian Canadians in Ontario (Table 3-2). Immigrants who arrive with limited language skills are significantly less likely to report a health improvement, with immigrant OAs being the least likely to report a health improvement (Fuller-Thomson et al., 2011). It is important to note that the two incidence indicators for physical functioning (worsened and improved) are not mutually exclusive. Data in the CCRS represents the ratio of residents (percentage) who experienced each QI. RAI-MDS assessments are conducted upon admission, routinely every three months, and additionally if a resident experiences any significant health change (e.g., a fall) (Hutchinson et al., 2011). For example, a resident who scored well on physical functioning upon admission later experienced a fall and fractured their leg, which required temporary use of a wheelchair, would be assessed by designated nurse of the LTC home as having worsened score for physical functioning. Three months later,

after leaving the hospital and undergoing physiotherapy, the resident can now walk on their own and, the nurse would report improvements in physical functioning. The two QIs do not exclude each other, for example a high percentage reported for one QI does not necessarily mean a low percentage in the other.

Findings from the study by Lai (2008) examining the predictors of Chinese OAs' intention to use LTC homes, indicated that a higher level of dependence on instrumental activities of daily living, living alone, a higher level of social support, and a higher level of Chinese ethnic identity were the most significant predictors of intention to apply to a LTC home among older Chinese Canadians. In another study by Van Dijk (2004) examining Catholic and Calvinist OAs attitudes and commitments to the provision of and movement into ethnic and religious retirement residences or LTC homes, it was found that the Calvinists tended to move into Calvinist-specific housing built especially for them by their religious community when they have reached very old age (i.e., over 90). Thus, the lower percentage of residents experiencing improved physical functioning in ethno-specific homes in this study could be due to (1) limited English skills that make it less likely to report health improvements, (2) OAs in these homes being older, increasing the odds of health decline, and (3) OAs entering these homes already with disproportionately higher needs with activities of daily living.

Low percentage of residents experiencing restraint may reflect the significant achievement in reduction of restraints use in LTC over the past decades. Many LTC homes are now achieving the provincial benchmark. Interestingly, a study by Estabrooks et al. (2013) identified the following four QIs as the most sensitive to LTC clinical practice (i.e., nursing care, physician care, policy) worsened pressure ulcers, experiencing worsened pain, restraint use, and potentially inappropriate use of antipsychotics. Mashouri et al. (2020) also identified worsened pressure ulcers, experiencing worsened pain, and restraint use as strongly related to poor performance on inspections. Although the present study did not find statistically significant difference in these QIs, it is worth further exploring what ethno-specific LTC homes are doing so well to produce lower percentages across these five QIs. This is especially important for administrators and policymakers looking to improve not only the cultural competence between residents and staff, but also improve their inspection performance.

## 4.1 Strengths and Limitations

Including ethno-specific LTC homes in a comparative analysis on QIs provides novel insights into their performance. One of the strengths of the current study is the methodological rigor taken to identify sources, such as the HCCSS and MOLTC, and gather information on ethno-specific LTC homes.

Limitations include the lack of readily available information on ethno-specific LTC homes. As one of the ways that the ethno-specific LTC homes were identified by mission statements of the homes, the study had to rely on the home's interpretation of ethnicity, religion, and culture. Another limitation is that although ethno-specific homes could be categorized as ethnic, religious, or cultural, all the homes in this study were classified under one homogenous "ethnic" grouping. The LTC needs may differ for individuals depending on their unique ethnic, cultural, or religious backgrounds, and it is possible that findings could have been different if these three categories were distinguished in a sub-group analysis. The current study is limited to the publicly available indicators and contextual measures, where information on the age or sex of the residents is lacking. The aim of culturally congruent healthcare is to improve healthcare delivery by considering differences in age, gender, religion, and socioeconomic status (Leininger, 2002). The literature also suggests that women are more likely than men to require LTC and for longer durations (Feder & Komisar, 2012). It is possible that the sex and age characteristics of residents in ethno-specific LTC homes are different than in mainstream LTC homes, and it is not known whether these additional factors played a role in the observed differences in QIs in the current study.

Lack of data on the immigrants' source regions and time since the immigration also limited the generalizability of findings. Furthermore, exclusion of a large number of municipal and for-profit-owned LTC homes may have introduced a bias in the comparisons but was necessary as very few ethno-specific LTC homes were available in these categories. Exclusion of small LTC homes with 1-29 beds ensured fair comparison between not-for-profit mainstream and ethno-specific homes but may have also introduced bias, considering the unique dynamics of smaller LTC homes. Excluding these contextual factors to ensure equal representation between ethno-specific and

mainstream LTC homes resulted in inclusion of only 21.6% of all LTC homes in Ontario. These limitations should be considered when generalizing the study findings to the broader LTC landscape in Ontario.

Although five QIs were not statistically significant, the current study cannot rule out that the differences in Mdn percentages of residents between not-for-profit home types were not important. The large standard deviation coefficients indicated large variability in the Mdn percentages of all QIs (Table 3.3 and Table 3.4). Incidence QIs (i.e., improved and worsened physical functioning, worsened depressive mood, worsened pressure ulcers) rely heavily on the ability of care staff to detect and report events at multiple time points to assess differences in health over time (CIHI, 2012). Differences in interpretation, judgment, and documentation of QIs can introduce variability into the reported percentages, thus leading to the high variability and standard deviations found in the current study.

## 4.2 Implications for Future Research

For those interested in continuing this research, several key questions emerged from this study. For example, what are specific characteristics that may differentiate ethno-specific from mainstream LTC homes?, How would the results have been different if ethno-specific LTC homes were separated into ethnic, religious, and cultural subcategories?, How do ethno-specific homes achieve better performance on QIs?, How are ethno-specific LTC homes performing in other Canadian provinces? How do ethno-specific homes improve the quality of life for their residents? The greater transparency and reporting of data related to ethno-specific LTC homes is also needed. Establishing a systematic and standardized approach to collect, report, and share data on ethno-specific homes would significantly enhance the understanding of their quality performance. Future researchers should advocate for initiatives that encourage the collaboration of various stakeholders, including healthcare institutions, government agencies, and LTC homes, to streamline the collection and reporting of this data to improve dialogue on this unique service within the healthcare system.

## 4.3 Implications for LTC practice

This study offers valuable insights for LTC home licensees aiming to enhance the quality of care in both ethno-specific and mainstream LTC homes. Recognizing that the study focused on specific QIs rather than a comprehensive evaluation of culture and quality of life, administrators can use specific QI findings to target areas that need improvement. For administrators in ethno-specific LTC homes, the study provides an opportunity to identify and build upon strengths where these homes performed better. Individual ethno-specific LTC homes can assess their performance in relation to the average findings for the group provided in this study and consider implementing strategies to assure continued success, such as weekly check-ins with direct care staff that are implementing pain management and fall prevention. Collaborating with stakeholders, such as families, owners, resident and family counsels, and volunteers to enhance cultural competency and responsiveness within the facility could also further improve QIs.

Recognizing that different LTC homes may excel in distinct aspects of care, administrators should consider the unique strengths of both mainstream and ethno-specific LTC homes. This research provides evidence that has the potential to inform strategic decision-making, implement targeted improvements, and enhance culturally responsive, high-quality care for Ontario's increasingly diverse OA population. As discussed in Introduction, changing immigration policies in the mid-to-late 1900s resulted in a diverse, new wave of immigrants entering Canada. Replacing Europe, Asia represents the most common continent of birth for people born outside Canada between 1967 and 1971 cohort, and all subsequent cohorts until 2016 (Carrière et al., 2016). As these diverse immigrants are entering old age, it is increasingly important to diversify ethno-specific services. With India being the primary place of birth for recent immigrants from 2016 to 2021 (Statistics Canada, 2022b), there may be a greater need for Indian-specific LTC homes in the mid-to-late 2000s that policymakers should consider. As discussed previously in the chapter, there are currently no ethno-specific homes catering services and LTC to the Indian or South Asian population in Ontario. An upstream approach must be adopted to ensure that future ethno-specific LTC homes are built for the right populations, at the right times, and with quality services.

# Chapter 5

## 5 Conclusion

In the era of population aging and the increasing diversity of Ontario's population of OA, the provision of quality care in LTC homes emerges as a critical challenge. As the proportion of ethnic OAs increases, due to increased life expectancy and changing immigration patterns, LTC homes in Canada will continue to play an important role in providing comprehensive health and social support services to ethnically diverse residents. Using nine routinely collected RAI-MDS 2.0 QIs, the current study identified several differences between ethno-specific and mainstream LTC homes in Ontario that have the potential to inform LTC policy, practice, and the pursuit of equitable care for a diverse aging population. Although QI results were consistently better in the ethno-specific homes, statistically significant differences were identified only in four QIs. Three QIs, namely experiencing pain, falls in the last 30 days, and worsened depressive mood, were significantly better in the ethno-specific homes. One QI, improved physical functioning, was significantly better in the mainstream homes. These outcomes underscore the potential benefits of ethno-specific considerations in addressing the needs of LTC residents. The study provides evidence for the need to create more and increase the visibility of ethno-specific LTC homes in the multicultural milieu of Canada.

The findings in the current study align with the broader understanding that culturally tailored care can contribute positively to mental health, pain management, and overall well-being. Thus, the current study may spark additional research on ethno-specific LTC and help facilitate a more informed dialogue on the performance of the non-for-profit homes in Ontario. This may lead to future quality improvements and policy changes that will cater to the changing needs of the ever diversifying and growing OA population.

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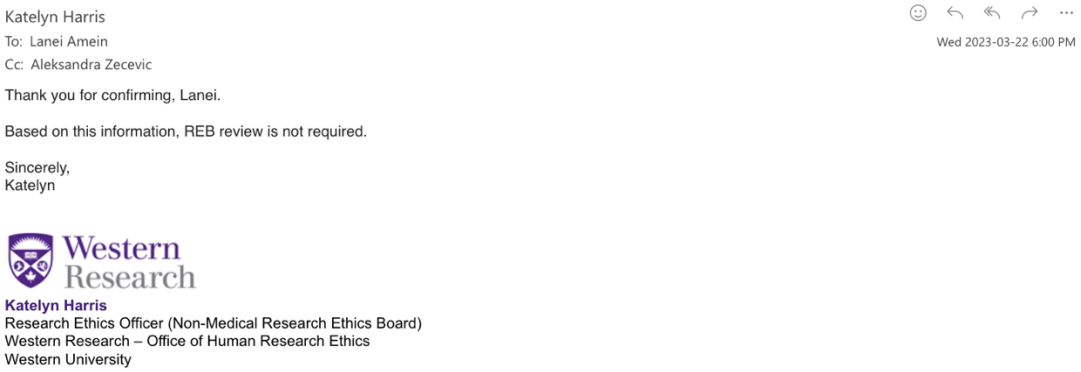
# Appendices

## Appendix A An email from research ethics officer confirming that a Research Ethics Board review is not required.



Katelyn Harris

To: Lanei Amein

Cc: Aleksandra Zecevic

Wed 2023-03-22 6:00 PM

Thank you for confirming, Lanei.

Based on this information, REB review is not required.

Sincerely,
Katelyn

Western Research

**Katelyn Harris**
Research Ethics Officer (Non-Medical Research Ethics Board)
Western Research – Office of Human Research Ethics
Western University

*Note.* REB= Research Ethics Board

**Appendix B Notes worksheet from the CIHI "In-Depth" original dataset**

| Column title | Description | Notes |
|---|---|---|
| Reporting level | Identifies whether the indicator value is being reported for a long-term care organization, hospital, type of hospital, health region, province, territory or Canada. | Not applicable |
| Hospital or long-term care organization | Hospital or long-term care organization name as defined by reporting Discharge Abstract Database (DAD)/National Ambulatory Care Reporting System (NACRS)/Hospital Morbidity Database (HMDB)/Alberta Ambulatory Care Reporting System (AACRS)/Continuing Care Reporting System (CCRS) data. | Not applicable |
| Type of hospital | The assigned peer group for a hospital (not applicable to long-term care organizations)<br><br>Teaching hospitals: Hospitals that meet at least 1 of the following criteria:<br>▪ Have confirmed teaching status from the provincial ministry<br>▪ Identified as teaching in the provincial ministry submission to the Canadian MIS Database<br>Community — large hospitals: Hospitals that meet 2 of the following criteria:<br>▪ More than 8,000 inpatient cases<br>▪ More than 10,000 weighted cases<br>▪ More than 50,000 inpatient days<br>Community — medium hospitals: Hospitals that do not meet the above criteria and have 2,000 or more weighted cases.<br>Community — small hospitals: Hospitals that do not meet the above criteria and have fewer than 2,000 weighted cases. | More information on the hospital peer group methodology can be found on the Resources page of CIHI's Indicator Library. |
| Region | The administrative or geographic reporting health region. | Not applicable |
| Province/territory | Province or territory. | Not applicable |
| Indicator | The name of the indicator in Your Health System: In Depth. | Not applicable |

| | | |
|---|---|---|
| Data year | The time period of the data of interest. | Depending on the indicator, this may refer to the fiscal year, calendar year, school year or survey cycle year. |
| SES | Socio-economic status as defined by neighbourhood income quintiles. Income quintiles are population groups that each represent about one-fifth (20%) of the population. Quintile 1 represents the 20% of the population with the lowest incomes. Quintile 5 is the highest 20% of the population by income.<br><br>Q1 (least affluent), Q2, Q3, Q4, Q5 (most affluent)<br>All: Indicator value for all income quintiles. | This field is applicable to only certain indicators. |
| Sex | Indicator values broken down by sex:<br><br>Male<br>Female<br>Both | This field is applicable to only certain indicators. |
| Unit of measurement | The unit of measurement. | Not applicable |
| Indicator result | The indicator value. | Not applicable |
| Lower confidence limit | The hospital, long-term care organization, health region, territory, province or Canada 95% lower confidence limit value. | Not applicable |
| Upper confidence limit | The hospital, long-term care organization, health region, territory, province or Canada 95% upper confidence limit value. | Not applicable |
| Numerator | Number of cases. | Numerator counts are available for only certain CIHI indicators. Counts will be available for Canada, as well as the province, territory and health region only. |

| | | |
|---|---|---|
| Denominator | Denominator value | Denominator counts are available for only certain CIHI indicators. Counts will be available for Canada, as well as the province, territory and health region only. |
| Notes | Any additional notes for a specific indicator, year or reporting level. | Not applicable |
| Disparity rate ratio | Ratio of the rate of a health indicator for the least affluent neighbourhood income quintile (Q1) to the rate for the most affluent neighbourhood income quintile (Q5).<br><br>A rate ratio of 1 indicates no disparity between the least affluent and the most affluent groups. | This field is applicable to only those indicators that have income quintile breakdowns. |
| Potential rate reduction | Potential reduction in a health indicator rate that would occur in the hypothetical scenario that each socio-economic group in the jurisdiction experienced the rate of the most affluent socio-economic group. | This field is applicable to only those indicators that have income quintile breakdowns. |
| Top results | Identifies hospitals, long-term care facilities and health regions with results in the top 10% for the last 3 consecutive years.<br><br>Top result: The hospital/long-term care facility/health region is considered to have a top result for the indicator<br>Not a top result: The hospital/long-term care facility/health region is not considered to have a top result for the indicator<br>Not applicable<br>Not available | For hospitals, results are calculated by type of hospital. Top result designations are not applied to long-term care corporations.<br>Quebec has elected not to participate in this section.<br><br>More information on the top results methodology can be found on the Resources page of CIHI's Indicator Library. |

| | | |
|---|---|---|
| Comparison | Identifies how a hospital compares with its peer group average or how a long-term care organization, health region and province/territory compare with the national average, based on the latest year of data results. The comparison (difference from average) is based on a statistical assessment and the desirable direction of the indicator. "Above average" represents the desirable direction for each indicator. For indicators without confidence intervals, such as the emergency department wait time indicators, the comparison is assigned based on the indicator value relative to the 20th and 80th percentiles of the indicator values for all hospitals. Values are the following:<br>Above average<br>Same as average<br>Below average<br>Not applicable<br>Not available<br>Applicable to financial indicators only (i.e., Administrative Expense, Cost of a Standard Hospital Stay):<br>Higher than average<br>Lower than average | More information on this methodology can be found on the Resources page of CIHI's Indicator Library. |
| Trend over time | Shows the improvement over time for a hospital, long-term care organization, health region or province/territory. This will apply only where there is at least 3 years of data available. Values are the following:<br><br>Improving<br>No change<br>Weakening<br>Not applicable<br>Not available | More information on this methodology can be found on the Resources page of CIHI's Indicator Library. |

*Note*. CIHI= Canadian Institute for Health Information. The "Notes worksheet" table was adopted from Canadian Institute for Health Information: "Your Health System: In Depth All Data Export — Data Tables. Ottawa, ON: CIHI." You may freely use and reproduce CIHI Materials for education, non-commercial research, internal reference and private study. CIHI is the owner of the Website, CIHI Services and the reports, information and other works included in or made available through these (collectively the "CIHI Materials").

**Appendix C List of indicators from the CIHI "In-Depth" original dataset**

| Quadrant | Theme | Indicator name | Type of year | Data source |
|---|---|---|---|---|
| Health system outputs | Access | Has a Regular Health Care Provider | Calendar year | Canadian Community Health Survey, Statistics Canada |
| Health system outputs | Access | Total Time Spent in Emergency Department for Admitted Patients (90% Spent Less, in Hours) | Fiscal year | CIHI |
| Health system outputs | Access | Hip Fracture Surgery Within 48 Hours | Fiscal year | CIHI |
| Health system outputs | Access | Emergency Department Wait Time for Physician Initial Assessment (90% Spent Less, in Hours) | Fiscal year | CIHI |
| Health system outputs | Access | Self-Harm Hospitalizations | Fiscal year | CIHI |
| Health system outputs | Person-centredness | Repeat Hospital Stays for Mental Health and Substance Use | Fiscal year | CIHI |
| Health system outputs | Person-centredness | Patient Flow for Hip Replacement | Fiscal year | CIHI |
| Health system outputs | Person-centredness | Communication With Doctors | Fiscal year | CIHI |
| Health system outputs | Person-centredness | Communication With Nurses | Fiscal year | CIHI |
| Health system outputs | Person-centredness | Involvement in Decision-Making and Treatment Options | Fiscal year | CIHI |
| Health system outputs | Person-centredness | Information and Understanding When Leaving the Hospital | Fiscal year | CIHI |
| Health system outputs | Person-centredness | Overall Hospital Experience | Fiscal year | CIHI |
| Health system outputs | Safety | Obstetric Trauma (With Instrument) | Fiscal year | CIHI |
| Health system outputs | Safety | In-Hospital Sepsis | Fiscal year | CIHI |

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|---|---|---|---|---|
| Health system outputs | Safety | Potentially Inappropriate Medication Prescribed to Seniors | Fiscal year | CIHI |
| Health system outputs | Safety | Falls in the Last 30 Days in Long-Term Care | Fiscal year | CIHI |
| Health system outputs | Safety | Worsened Pressure Ulcer in Long-Term Care | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Hospital Deaths (HSMR) | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Hospital Deaths Following Major Surgery | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | All Patients Readmitted to Hospital | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Medical Patients Readmitted to Hospital | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Surgical Patients Readmitted to Hospital | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Obstetric Patients Readmitted to Hospital | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Pediatric Patients Readmitted to Hospital | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Low-Risk Caesarean Sections | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Ambulatory Care Sensitive Conditions | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | High Users of Inpatient Acute Care Services | Fiscal year | CIHI |
| Health system outputs | Appropriateness and effectiveness | Potentially Inappropriate Use of Antipsychotics in Long-Term Care | Fiscal year | CIHI |

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|---|---|---|---|---|
| Health system outputs | Appropriateness and effectiveness | Restraint Use in Long-Term Care | Fiscal year | CIHI |
| Health system outputs | Efficiency | Corporate Services Expense Ratio | Fiscal year | CIHI |
| Health system outputs | Efficiency | Cost of a Standard Hospital Stay | Fiscal year | CIHI |
| Health system outcomes | Health status | Life Expectancy at Birth | Calendar year | Vital Statistics — Death and Birth Databases, Statistics Canada |
| Health system outcomes | Health status | Avoidable Deaths | Calendar year | Vital Statistics, Statistics Canada |
| Health system outcomes | Health status | Avoidable Deaths From Preventable Causes | Calendar year | Vital Statistics, Statistics Canada |
| Health system outcomes | Health status | Avoidable Deaths From Treatable Causes | Calendar year | Vital Statistics, Statistics Canada |
| Health system outcomes | Health status | Hospitalized Heart Attacks | Fiscal year | CIHI |
| Health system outcomes | Health status | Hospitalized Strokes | Fiscal year | CIHI |
| Health system outcomes | Health status | Hospitalizations Entirely Caused by Alcohol | Fiscal year | CIHI |
| Health system outcomes | Health status | Improved Physical Functioning in Long-Term Care | Fiscal year | CIHI |
| Health system outcomes | Health status | Worsened Physical Functioning in Long-Term Care | Fiscal year | CIHI |
| Health system outcomes | Health status | Worsened Depressive Mood in Long-Term Care | Fiscal year | CIHI |
| Health system outcomes | Health status | Experiencing Pain in Long-Term Care | Fiscal year | CIHI |

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|---|---|---|---|---|
| Health system outcomes | Health status | Experiencing Worsened Pain in Long-Term Care | Fiscal year | CIHI |

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**Appendix D List of contextual measures from the CIHI "In-Depth" original dataset**

| Grouping | Contextual measure name | Reporting level | Data year | Type of year | Data source |
|---|---|---|---|---|---|
| Regional characteristics and inputs | Rural Area Population | Region, province | 2016 | Calendar year | Statistics Canada |
| Regional characteristics and inputs | Seniors (65 and Older) | Region, province | 2022 | Calendar year | Statistics Canada |
| Regional characteristics and inputs | Family Medicine Physicians per 100,000 Population | Region, province | 2022 | Calendar year | CIHI |
| Regional characteristics and inputs | Patient Days in Alternate Level of Care (Percentage) | Region, province | 2022–2023 | Fiscal year | CIHI |
| Regional characteristics and inputs | Hospitalized Seniors (65+) at Risk of Frailty | Region, province | 2022–2023 | Fiscal year | CIHI |
| Structural factors influencing health | Aboriginal Population | Region, province | 2016 | Calendar year | Statistics Canada |
| Structural factors influencing health | Children Living in Low-Income Families | Region, province | 2016 | Calendar year | Statistics Canada |
| Structural factors influencing health | Smoking | Region, province | 2019–2020 | Survey cycle year | Canadian Community Health Survey, Statistics Canada |
| Structural factors influencing health | Physical Activity (Age 18 and Older) | Region, province | 2019–2020 | Survey cycle year | Canadian Community Health Survey, Statistics Canada |
| Structural factors influencing health | Perceived Health | Region, province | 2019–2020 | Survey cycle year | Canadian Community Health Survey, |

| | | | | | |
|---|---|---|---|---|---|
| | | | | | Statistics Canada |
| Facility characteristics | Type of Hospital | Hospital | N/A | N/A | CIHI |
| Facility characteristics | Number of Acute Care Hospital Stays | Hospital | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Number of Acute Care Beds | Hospital | 2021-2022 | Fiscal year | CIHI |
| Facility characteristics | Number of Emergency Department Visits | Hospital | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Average Acute Care Resource Use Intensity | Hospital | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Total Acute Care Resource Use Intensity | Hospital | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Average Length of a Hospital Stay (Days) | Hospital | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Hospital Occupancy Rate | Hospital | 2021–2022 | Fiscal year | CIHI |
| Facility characteristics | Patients Admitted Through the Emergency Department | Hospital | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Patient Days in Alternate Level of Care (Percentage) | Hospital | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Hospitalized Seniors (65+) at Risk of Frailty | Hospital | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Female Long-Term Care Residents | Long-term care facility, corporation | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Long-Term Care Residents Younger Than 65 | Long-term care facility, corporation | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Long-Term Care Residents Older Than 85 | Long-term care | 2022–2023 | Fiscal year | CIHI |

| | | | | | |
|---|---|---|---|---|---|
| | | facility, corporation | | | |
| Facility characteristics | Long-Term Care Residents With Dementia | Long-term care facility, corporation | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Long-Term Care Residents With Congestive Heart Failure | Long-term care facility, corporation | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Long-Term Care Facility Size | Long-term care facility | 2022–2023 | Fiscal year | CIHI |
| Facility characteristics | Long-Term Care Facility Location | Long-term care facility | 2022–2023 | Fiscal year | CIHI |

*Note*. CIHI= Canadian Institute for Health Information. The "List of contextual measures" table was adopted from the Canadian Institute for Health Information: "Your Health System: In Depth All Data Export — Data Tables. Ottawa, ON: CIHI." You may freely use and reproduce CIHI Materials for education, non-commercial research, internal reference and private study. CIHI is the owner of the Website, CIHI Services and the reports, information and other works included in or made available through these (collectively the "CIHI Materials").

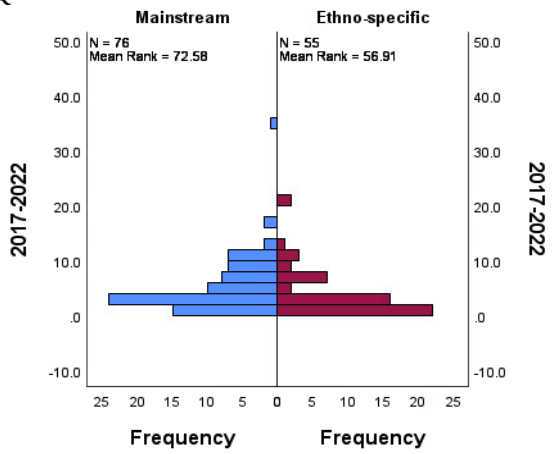
**Appendix E Ethno-Specific LTC Homes in Ontario by Region (HCCSS)**

| Region- LHIN | Home | Type | Specific |
|---|---|---|---|
| Central | Bethany Lodge | Religious | Christian Brethrean |
| | Valleyview Residence | Religious | 7th Day Adventist |
| | Kristus Darzs | Ethnic | Latvian |
| | Mon Sheong | Ethnic | Chinese |
| | Ukrainian Canadian Centre | Ethnic | Ukrainian |
| | Villa Colombo | Ethnic | Italian |
| Central East | Bendal Acres | Ethnic | French |
| | Ehatare Home for the Aged | Ethnic | Estonian |
| | Extendicare Scarborough | Ethnic | Tamil |
| | Fieldstone | Ethnic | Armenian |
| | Glen Hill Marnwood | Religious | Christian |
| | Glen Hill Strathaven | Religious | Christian |
| | Hellenic Home | Ethnic | Greek |
| | Mon Sheong | Ethnic | Chinese |
| | Shepherd Lodge | Religious | Pentecostal |
| | Yee Hong Centre Finch | Ethnic | Chinese |
| | Yee Hong Centre McNicoll | Ethnic | Chinese |
| Central West | Grace Manor | Ethnic, Religious | Dutch |
| | Faith Manor | Ethnic, Religious | Dutch |
| Champlain | Glebe Centre | Cultural, Ethnic | Culturally Deaf/Deaf Blind, Chinese |
| | Hillel Lodge | Religious | Jewish |
| | Villa Marconi | Ethnic | Italian |
| Erie St. Clair | Leamington Mennonite Home | Religious | Mennonite |
| Hamilton | Heritage Green | Religious | 7th Day Adventist |
| Niagara | Shalom Village | Religious | Jewish |
| Haldimand | Mount Nemo | Religious | Dutch Reform |
| Brant | Foyer Richelieu Welland | Cultural | Francophone |
| | Heidehof HFA | Ethnic | German |
| | Pleasant Manor | Religious | Mennonite |
| | Shalom Manor | Religious | Dutch Reform |
| | Tabor Manor | Religious | Mennonite |
| | United Mennonite | Religious | Mennonite |
| | Iroquois Lodge | Ethnic | Indigenous |
| | Cama Woodlands | Religious | Christian |
| Mississauga | Dom Lipa | Ethnic | Slovenian |
| Halton | Labdara Lithuanian | Ethnic | Lithuanian |
| | Villa Forum | Ethnic | Italian |

| | | | |
|---|---|---|---|
| North East | Hoivakoti Nursing Home | Ethnic | Finnish |
| | Wikwemikong Nursing Home | Ethnic | First Nations |
| | Mauno Koti | Ethnic | Finnish |
| North Simcoe Muskoka | Bob Rumball Home for the Deaf | Cultural | Culturally Deaf |
| | Georgian Manor | Ethnic | French |
| | Grover Park | Religious | Church of Christ |
| South East | Providence Manor | Religious | Catholic |
| South West | Oneida Nation of the Thames | Ethnic | First Nations |
| Toronto Central | Baycrest Jewish HFA | Religious | Jewish |
| | Houses of Providence | Religious | Catholic |
| | Hellenic Care for Seniors | Ethnic | Greek |
| | Ivan Franko | Ethnic | Ukrainian |
| | Copernicus Lodge | Ethnic | Polish |
| | Belmont House | Religious | Christian |
| | Nisbet Lodge | Religious | Christian |
| | Suomi Koti | Ethnic | Finnish |
| | Mon Sheong HFA | Ethnic | Chinese |
| | St Clair O'Connor | Religious | Christina |
| | Rose of Sharon | Religious | Korean |

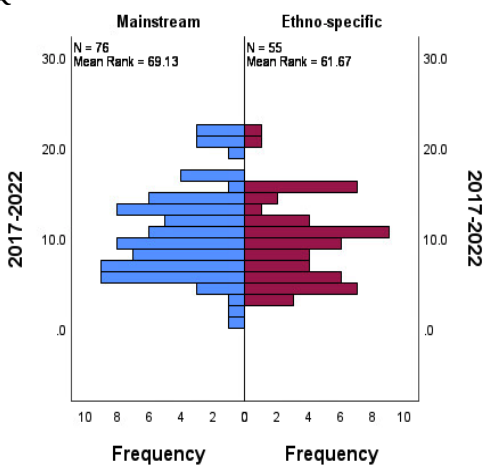
**Appendix F Normality of Data and Distributions of Mainstream and Ethno-specific Not-For-Profit LTC Homes Per Quality Indicator**

QI1



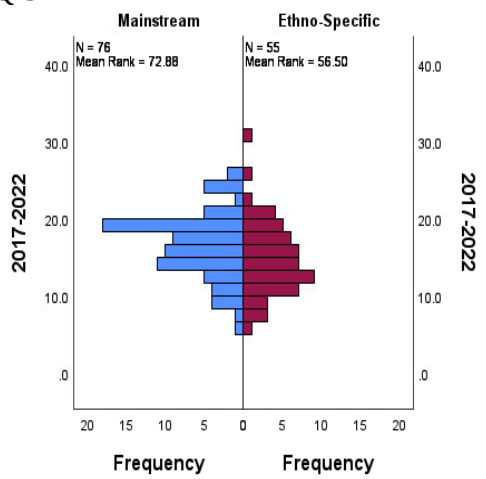

K-S $p$ = <0.001*

QI2



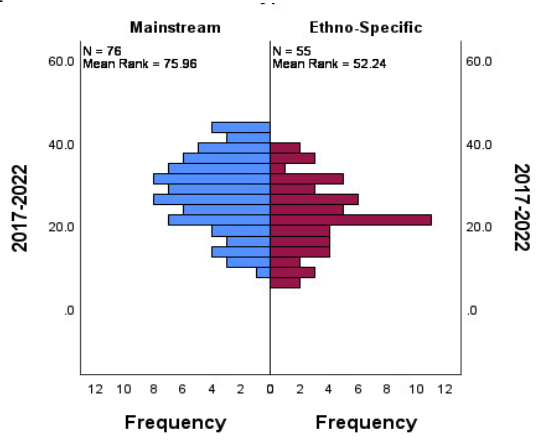

K-S $p$ = 0.129

QI3



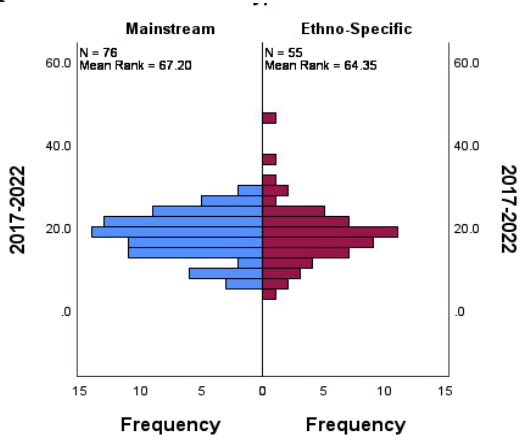

K-S $p$ = 0.470

QI4



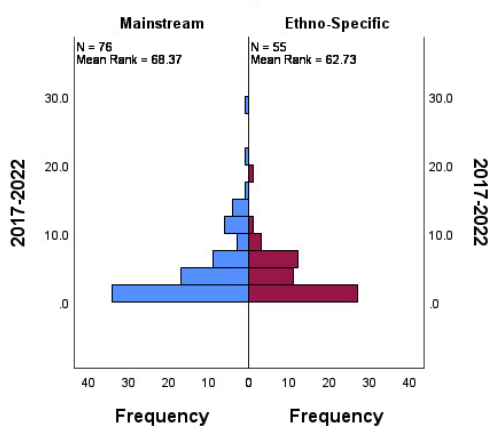

K-S $p$ = 0.921

QI5



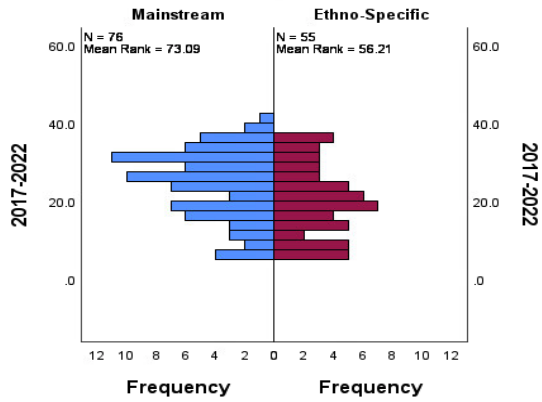

K-S $p$ = 0.581

QI6



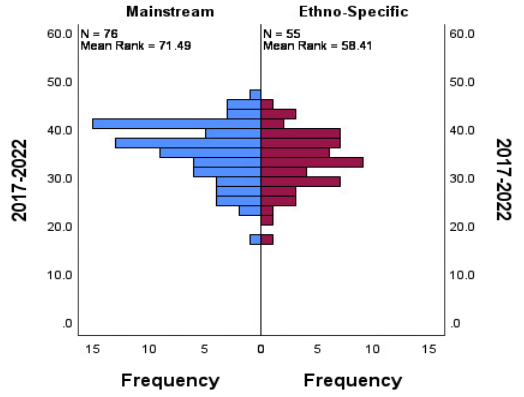

K-S $p$ = <0.001*

QI7



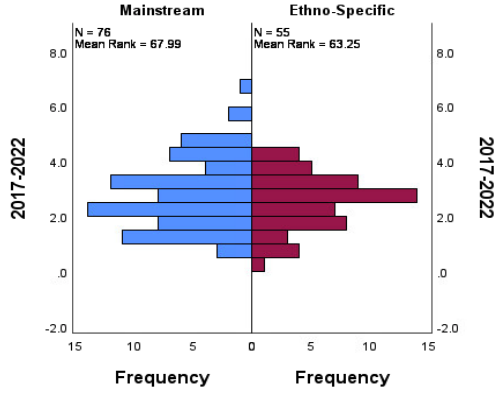

K-S $p$ = 0.244

QI8




K-S $p$ = 0.329

QI9




K-S $p$ = 0.810

*Note:* QI= Quality Indicator; QI1= Experiencing pain, QI2= Experiencing worsened pain, QI3= Falls in the last 30 days, QI4= Improved physical functioning, QI5= Potentially inappropriate use of antipsychotics, QI6= Restraint use, QI7= Worsened depressive mood, QI8= Worsened physical functioning, and QI9= Worsened pressure ulcer.
K-S *p*= p-value of one sample Kolmogorov-Smirnov test
*= Significance at $p < 0.01$

# Curriculum Vitae

| | |
|---|---|
| **Name:** | Lanei Amein |
| **Post-secondary Education and Degrees:** | Western University<br>London, Ontario, Canada<br>2017-2021 B.H.Sc. |
| **Related Work Experience** | Teaching Assistant<br>Western University<br>2022-2022<br>HS 3701 The Aging Body<br><br>Teaching Assistant<br>Western University<br>2022-2022<br>HS 1001 Personal Determinants of Health<br><br>Teaching Assistant<br>Western University<br>2023-2023<br>HS 1002 Social Determinants of Health |