

**HOW DO SOCIAL AND DEMOGRAPHIC CHARACTERISTICS INTERACT TO
INFLUENCE THE PERCEIVED MENTAL HEALTH OF CANADIAN IMMIGRANTS
COMPARED TO THE TOTAL POPULATION OF CANADIANS**

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DEDICATION

This thesis is dedicated to my husband, Gokul, for his unwavering support and encouragement every step of the way; to my son Grishma and my newborn son Grivan for being my sources of inspiration and joy; to my brother-in-law, Bishnu, for his guidance and faith in me; and to my family for their endless love, understanding, and patience.

ABSTRACT

The immigration process and settlement are stressful, and the mental well-being of immigrants is of particular concern. Epidemiological studies suggest that first-generation (foreign-born) immigrants experience better mental health than the Canadian-born population. Still, it is unclear whether this pattern varies substantially by the intersection of social & demographic factors. Cross-sectional data from the public-use Canadian Community Health Survey (CCHS) 2017/2018 was used, representing the Canadian population aged 12 years or older residing in all ten provinces. The perceived mental health of Canadian immigrants was assessed, and the influence of social and demographic factors on the mental health of Canadian immigrants was explored. Descriptive statistics and logistic regression were used to describe demographic characteristics, and their association with perceived mental health of immigrants comparing to the total Canadian population. Younger individuals in the general population and older immigrants had a higher proportion of reporting poor mental health. Immigrants with longer residency (more than 10 years) in Canada reported higher odds of poor mental health. Canadians who had a household size 2 and owned their house reported poor mental health, whereas immigrants who rented and lived alone, reported poor mental health. There was an increased odds of reporting poor mental health among the middle-aged Canadians(35-49 yrs), while non-significant results among immigrants suggests that age plays less of a role in immigrants. Similar results were noted for sex, sexual orientation, household size, racial background and dwelling ownership among immigrants, suggesting that results may vary due to multiple factors intersecting with each other which potentially plays a more substantial role in immigrants' mental health outcomes.

Keywords: immigrants; mental health; intersectionality

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LIST OF ABBREVIATIONS

SRMH	Self rated mental health
CCHS	Canadian Community Health Survey
WHO	World Health Organization
SDC	Social and Demographic Characteristics
PMH	Perceived Mental Health
GAD	Generalized Anxiety Disorder
LGB	Lesbian, Gay, Bisexual

CHAPTER 1: INTRODUCTION

1.1 Immigrants in Canada

Canada has a large immigrant population. In 2021, almost one in four people (8.3 million) were landed immigrants or permanent residents in Canada (Statistics Canada, 2022). From 2016 to 2021, more than 1.3 million new immigrants settled permanently in Canada, the highest number of recent immigrants recorded in a Canadian census (Statistics Canada, 2022). Statistics Canada (2022) also projects that the immigrant population will increase from 29.1% to 34% by 2041. In the past few decades, immigrants have typically migrated from countries in Asia, Africa, and Europe (Statistics Canada, 2016). Immigrants to Canada are primarily admitted under the economic category through the skilled worker program or the Provincial Nominee Program (IRCC, 2018). The proportion of immigrants in Canada who initially entered the country before 2016 with a study permit or temporarily as work or asylum claimants before acquiring permanent residence is also high among recent immigrants (IRCC, 2018). Immigrants to Canada have played, and will continue to play, an essential role in the country's growth and in shaping the country's demography and identity.

1.2 Background and Significance

Immigration and settlement in the host country are inherently stressful for immigrants (Salami, 2017). Research has recognized an increased risk of mental health problems and illness in immigrant groups (Chadwick et al., 2015; George et al., 2015). The mental and emotional well-being of immigrants is further worsened when migration is combined with additional intersecting factors such as age, sex/gender, marital status, employment challenges, impaired social support networks associated with settlement and adaptation to a different culture, unemployment/underemployment,

and language barriers (Olawa et al., 2021; Pandey et al., 2022; Yeretzian et al., 2023; Varin et al., 2020). The COVID-19 pandemic has also hugely impacted immigrant's mental health (Ng & Zhang, 2020). Indeed, a recent study conducted on immigrants' mental health reported that 91% and 30% of recent immigrants were more likely to report having experienced anxiety and generalized anxiety disorder (GAD), respectively (Evra & Mongrain, 2020).

New immigrants to Canada often report better health upon arrival during the early years of their residency in Canada (Vang et al., 2017). This trend has been labelled the "healthy immigrant effect." However, this healthy immigrant effect declines over time, possibly due to difficulties adjusting to a new environment, post-migration stress, or possibly due to adopting risky health behaviours (Chadwick & Collins, 2015; Salami, 2017; Lu & Ng, 2019; Tsai & Ghahari, 2023). This pattern of initial health advantage among immigrants to Canada may be related to a combination of positive self-selection among those choosing to immigrate and Canada's systematic economic migration system, which involves medical screening and awarding points to those with higher educational and economic achievement. Therefore, potential migrants with favourable social determinants of health are more likely to be selected for admission to the country (Lu & Ng, 2019). However, the documented rapid decline in immigrant health within two years after arrival calls for greater exploration so that we may understand the factors that may be influencing the decline in immigrants' mental health status. A greater understanding of the complex intersectional factors that may impact immigrant long-term health outcomes is essential to emphasize the importance of considering immigrants' unique health needs (Tsai et al., 2023).

1.3 Rationale

Over the past five years, Canada's foreign-born population grew four times faster than the Canadian-born population. The foreign-born population currently accounts for approximately one out of every five Canadian residents (Robert, 2016). As the number of immigrants continues to grow, understanding their mental health has been a keen interest of researchers, policymakers, and public health officials because of the significant consequences for long-term population health and the health care system. It is well established that the mental health of immigrants in Canada is a multifaceted issue influenced by various factors, including settlement challenges, access to services, cultural diversity, and policy considerations (Olawa et al., 2021; Pandey et al., 2022; Yeretdzian et al., 2023). Furthermore, addressing the mental health status of immigrants has broader implications for the well-being and prosperity of the nation. Most of the immigrant health research in Canada has focused on factors such as socio-demographic differences and social and health access barriers that affect immigrant's mental health (George et al., 2015; Chadwick et al., 2015; Kirmayer et al., 2011). However, little research has compared the perceived mental health of immigrants to that of native-born Canadians or applied an intersectionality framework to explore how social and demographic factors possibly intersect to influence perceived mental health among immigrants. The current proposed study plans to address these gaps in the existing literature.

1.4 Theoretical Framework

The term "intersectionality" was coined by Kimberlé Crenshaw, a legal scholar and critical race theorist, in the late 1980s (Crenshaw,1991). Intersectionality theory is a framework for understanding how various aspects of a person's identity, such as race, gender, class, sexual orientation, disability, and other markers of social location, intersect and interact with one another, leading to unique experiences and forms of discrimination or privilege (Crenshaw,1991). Intersectionality encourages a more comprehensive analysis of social issues, as it highlights how social structures and power dynamics operate in people's lives (Mcbride & Mazur, 2008). It helps to uncover hidden biases, privilege, and discrimination. It also emphasizes the importance of inclusive and holistic approaches to addressing inequality (Crenshaw, 1991). People with intersecting marginalized identities often experience unique forms of discrimination and inequality that cannot be fully understood by looking at each identity in isolation. These experiences may differ qualitatively from individuals with single identities (Viruell-Fuentes et al., 2012).

In immigrant health research, intersectionality theory may be particularly helpful in examining immigrant health trajectories shaped simultaneously by race, class, and gender-based systems of hierarchy (Viruell-Fuentes et al., 2012). It is essential to recognize that immigrant experiences vary based on age, gender, socio-economic status, and immigration status, among other factors. These factors can intersect and compound the mental health challenges faced by different immigrant groups.

1.5 Research Questions

The current study aims to examine the following questions:

1. Is there a difference in perceived mental health status between native-born Canadians and immigrants to Canada?
2. Is there an association between immigrants' age and perceived mental health?
3. Is there an association between immigrants' sex and perceived mental health?
4. Is there an association between immigrants' sexual orientation and perceived mental health?
5. Is there an association between immigrants' marital status and perceived mental health?
6. Is there an association between perceived mental health and total household income?
7. Is there an association between the current level of education and perceived mental health?
8. Is there an association between household size and perceived mental health?
9. Is there an association between immigrant's length of stay in Canada and their perceived mental health among immigrants?
10. Is there an association between household food security status and their perceived mental health?
11. Is there an association between immigrants' social support and perceived mental health?
12. Is there an association between racial background and perceived mental health?
13. Is there an association between immigrants' dwelling ownership and perceived mental health?
14. How does the intersection of significant associations contribute to immigrant's perceived mental health?

CHAPTER 2: LITERATURE REVIEW

This literature review aims to present an overview of recent key findings on how social and demographic factors affect the mental health of immigrants. The review is divided into four sections. Firstly, we provide a brief background about the immigrants in Canada and their mental health. The second section details the socio-demographic factors and their impact on the mental health of immigrants, including the key findings of the recent study, and we then offer intersectionality as a theoretical framework integrating these findings into an understanding of the intersection of social and demographic factors to influence the perceived mental health among immigrants.

Immigrants in Canada

Canada is recognized as a nation shaped by immigration. The most recent official information from Immigration, Refugees, and Citizenship Canada (IRCC) as of August 10, 2023, highlights a remarkable number of new permanent residents in 2023, surpassing its annual target as outlined in the immigration levels plan for the year 2023-2025 (IRCC, 2023). In 2022, Canada welcomed the largest number of permanent residents in Canadian history, over 437,000, against a target of 431,645 admissions. Most immigrants came from Asia, and Africa (Statistics Canada, 2022). The majority of migrants reside in four out of the ten provinces: Ontario, British Columbia, Quebec, and Alberta, comprising approximately 63.4% of the immigrant population concentrated in three urban hubs—Toronto, Vancouver, and Montreal (Statistics Canada, 2022).

The term "immigrant" encompasses diverse individuals with distinct nationalities, cultures, races, and ethnicities. Immigrants can be classified based on their status as Temporary Foreign Workers (TFW), Permanent Residents and Refugees. TFWs (Temporary Foreign Workers) are individuals from another country authorized to work legally in a foreign nation who arrive in Canada

holding a work permit and remain for a specific duration determined by their job offer or contract (Statistics Canada, 2022). Permanent residents are individuals from other countries who have chosen to establish permanent residence in Canada (Robert, 2012). They have the flexibility to enter Canada at any time and can remain as long as they fulfill the criteria to sustain their status, which necessitates being physically present in Canada for a minimum of 730 days over five years (Robert, 2012). Refugees are individuals who have left their native country out of apprehension related to war, violence, or persecution stemming from religious and political beliefs (Robert, 2012). In contrast to many immigrants, who voluntarily relocate, refugees are compelled to abandon their established lives, occupations, and belongings, embarking on a fresh start in a foreign land (Morton, 2005). Typically, refugees spend several months in refugee camps before securing a secure refuge in another nation (Pumariega et al., 2005). The prospect of returning to their home countries is usually improbable for them (Pumariega et al., 2005)

Socio-demographic Characteristics

Socio-demographic characteristics are considered to be a major risk factor for a variety of diseases, including mental illness (Varin et al., 2020). Immigrants may be exposed to various pre-migration stressors that may put them at a heightened health risk, and post-migration stressors such as separation from family, unemployment and poverty (Capaldi et al., 2021). The pattern of immigrants' mental well-being seems to differ from a healthy immigrant effect. There is a decline in both the mental health and physical health of immigrants over time (Ng & Zhang, 2020). This decline has been attributed to many factors, including socioeconomic status, financial and employment constraints, resettlement and acculturation challenges, multiple responsibilities, discriminatory treatment, and difficulty

obtaining services in a timely manner due to language challenges (Ng & Zhang, 2020). A scoping review by George et al. (2015) found that the odds of immigrants having high self-rated mental health differed based on source, world region, and duration since landing. Other findings from a national longitudinal study of immigrants in Canada found that visible minority status, female gender, low income, and refugee status were associated with elevated risk and the study findings revealed that immigrant parents are at risk for emotional health problems during the post-migration period (Browne et al., 2017).

The demographic factor of age at migration may influence mental health. Research suggests that age at arrival has an important influence on mental health, at least among youth, as there is an inverse relationship between age at arrival and mental health vulnerability (Browne et al., 2017). Those who arrive at an early age may have weaker identification with the cultural values of their own ethnic group, and are exposed to more risky attitudes and behaviours in the host society. Racial minorities are also more likely to experience discrimination and receive unfair treatment, which may compromise their mental health (George et al., 2015).

Similar findings can be observed in a recent study by Gadermann et al. (2022), who identified that mental disorder diagnoses varied by age and sex within immigrant, refugee, and nonimmigrant groups. Furthermore, they found that compared with nonimmigrant youth, children and youth from immigrant and refugee backgrounds, generally have a lower prevalence of conduct disorders, ADHD and mood/anxiety disorders. However, there is a higher prevalence of these mental illnesses in 2nd generation immigrants compared to 1st generation immigrants (Gadermann et al., 2021). In contrast, Kwak (2016) evaluated the healthy immigrant effect of adolescents in Canada and concluded that although the HIE was

confirmed with national community population samples of adolescents in Canada, foreign-born immigrant adolescents experienced better health than their native-born peers. In a survey on female refugee youth, Khanlou and Guruge (2004) found that this age group faced specific resettlement challenges due to traumatic premigration contexts and postmigration identity crises that make them vulnerable to adverse mental health outcomes.

A study by Anderson et al. (2017), demonstrated that postpartum depression (PPD) is highly prevalent in women who have immigrated, with a prevalence of 20% reported in high-income countries and 6 to 37% reported in Canadian studies (Ganann et al., 2016). In fact, studies have shown higher risks for both elevated antenatal and postnatal depressive symptoms associated with immigrant status compared to native-born counterparts, which has been reported in several Canadian studies (Anderson et al., 2017; Dennis et al., 2018). Similar findings were observed in another study that the prevalence of depressive symptoms was highest for recent immigrants (25.3–30.8%) compared to long-term immigrants (16.9–19.2%) and Canadian-born women 11.7–13.8% (Vaillancourt et al., 2022).

Sex

Sex is a crucial category of social stratification for the migratory process itself - in terms of who migrates, how, and when - and the associated health implications (Yeretzian et al., 2023). Specifically, women, men and sex-diverse people are exposed to different health risks and resources throughout the migration process, in the countries of origin, during transit, and once they have reached their destination. Social locations such as sex/gender, sexual orientation, social class, ethnicity, race/racialization, age and many more are considered to be interconnected rather than separated, thereby creating systems of advantages and discrimination/disadvantages.

Lou and Beaujot (2005), in their study, described that men were found to be less likely to report poor mental health compared to women. Immigrant women experience more gender discrimination as they work in informal and different sectors than men and occupy lower professional ranks and lower-wage jobs; as a result, they experience differential employment conditions and work-related mental health risks (World Health Organization, 2022). In addition, some legislation in host societies is gender-based. For instance, Canadian immigration citizenship, through family class classification, places the newly sponsored immigrant woman in a dependent position in relation to the labour force, government benefits, and services (Abu-Laban & Nath, 2020). While Alvi et al. (2012) argue that patriarchal attitudes can be seen in both immigrant and nonimmigrant cultures, Guruge et al. (2012)) stated that these ideas are more common among immigrant women with mental health problems.

Sexual Orientation

Sexual orientation significantly influences mental health outcomes, with numerous studies indicating that individuals identifying as lesbian, gay, bisexual (LGB), or other sexual minorities experience higher rates of mental health challenges compared to their heterosexual counterparts (Hynie 2018; Slami, 2020; Statistics Canada). Many factors that appear to affect the mental health of LGB people are in large part similar to those affecting the mental health of heterosexual people; however, LGB people tend to be more likely to report experiencing stressful life events and depression, exposure to discriminatory behaviour, mood disorders, low social supports and community belonging, and low mental health service utilization (Morrison, 2012). Several Canadian studies have examined associations between sexual orientation and mental health conditions (e.g., suicidality, depression, mood and anxiety

disorders), noting poorer outcomes for lesbian, gay, & bisexual (LGB) respondents (Hajo et al., 2024; Pakula & Shoveller, 2013). Furthermore, Chai (2024) conducted a systematic review and meta-analysis, revealing that lesbian, gay, and bisexual individuals are at greater risk for mental disorders, suicidal ideation, substance misuse, and deliberate self-harm compared to heterosexual individuals.

Total Household Income

Several studies have identified the importance of financial resources for the psychological and physical well-being of immigrants. Many immigrants experience prolonged periods of low income and social exclusion in the post-migration context, which increases health disparities (George et al., 2015). Compared to native-born persons, immigrants are more likely to be represented among the unemployed (Galarneau et al., 2013). On average, Canadian immigrants face a 1.5-2.5 times higher risk of low-income rates than the Canadian-born population, with recent immigrants experiencing the worst rates, with the exception of those settling in Toronto (Picot & Hou, 2014). The impact of poverty can be severe, specifically for new immigrants in the process of establishing themselves. Moreover, recent immigrants in the lowest-income quality were significantly more likely to report experiencing high levels of stress and emotional problems compared to those in the highest-income quartile (Picot & Hou, 2014). Beiser (2015) conducted a comparison of psychiatric illness in different cultures and demonstrated that though poverty created a risk of mental illness for both refugees and resident Canadians, the association between economic disadvantage and ill health proved stronger for refugees.

A systematic review found overwhelming evidence for the association between low SES and symptoms of mental illness in developed countries, with the most consistent

associations for unemployment, less education, and low income (Patel et al., 2023; Smith, 2022). Picot & Hou (2020) suggested that income inequality among immigrants persists between visible minorities and individuals of European origin, even after controlling for their level of education, with systemic racism potentially contributing to these findings. Moreover, recent studies indicate that migrants facing socioeconomic challenges may adopt unhealthy coping mechanisms, such as increased alcohol consumption and smoking, to manage stress and adversity. These behaviors can exacerbate their vulnerability to mental health issues. For instance, a study by Xiao et al. (2022) found that negative coping styles mediate the relationship between mental health challenges and increased suicide risk among migrant workers. These unhealthy behaviours make them more vulnerable to mental ill-health.

Low income is also related to un/underemployment (Fung & Guzder, 2021). Because of foreign status or lack of training, immigrants often work part-time, temporary, or contract jobs such as domestic servants or low-wage workers in informal sectors considered non-standard employment with low financial security (Watson & Osberg, 2018). All these working conditions are regarded as low status and demeaning, with little opportunity for advancement, which in turn sets the stage for mentally ill health. Immigrants with illegal documents are more likely to be exploited (Fung & Guzder, 2021). They are often forced to accept bad working conditions since they are afraid of being deported if they ask for better. Furthermore, an immigrant paid by the hour or by a piece of work is unwilling to seek health care during working hours as they find that missing work will reduce their income (Watson & Osberg, 2018).

Marital Status

Marriage has long been considered protective against mental issues such as isolation suicide (Bulloch et al., 2017). Numerous studies have examined the effects of marriage on mental health, with a particular focus on its impact on women compared to men (Lu & Ng, 2019). Jace and Makridis (2021) also found that married respondents were 1–2 percentage points less likely, relative to their unmarried counterparts, to experience mental health problems following declines in work- related income since the start of the pandemic (Jace & Makridis, 2021).

Education

Education is both a protective factor and a determinant of mental health among immigrants. It provides opportunities for economic stability and social integration but also represents unique challenges, particularly for immigrant children and youth. Immigrants to Canada generally arrive with varying levels of education, often influenced by their country of origin and socioeconomic status. Research has shown that immigrants tend to be highly educated compared to the Canadian-born population. For instance, Crossman et al. (2021) found that immigrants with higher education credentials often experience an initial advantage in the labor market, but this advantage diminishes over time due to challenges such as credential recognition and language barriers. Ali (2002) observed that highly educated immigrants are less likely to experience severe mental health issues due to their ability to navigate complex systems. However, the stress associated with credential devaluation and job mismatch disproportionately affects those with higher education, exacerbating mental health challenges (Kanas & Steinmetz, 2021).

Regarding intersectional challenges, gender, race, and age intersect with education and mental health outcomes. For instance, Hynie et al. (2023) noted that immigrant women face

unique challenges, including greater caregiving responsibilities and labor market discrimination, which can undermine the protective effects of education on mental health. Similarly, older immigrants may struggle with adapting their skills to a new context, which negatively impacts their psychological well-being (Montgomery et al., 2018).

Length of time in Canada since immigration

The effect of years since immigration is expected to be evident, with recent immigrants having a health advantage over long-term immigrants, that is, a decline of the "healthy immigrant effect" with longer residence in Canada. For example, Ali (2002) analyzed data from the Canadian Community Health Survey (CCHS) focusing on mental health and well-being, indicating that recent immigrants (who arrived in Canada in the previous 10 years) were in better mental health than those who arrived ten or more years ago. Lou and Beaujot (2005) also showed similar findings that recent immigrants were found to have better self-rated mental health compared to long-term immigrants.

More recent data from the 2011 Canadian Community Health Survey showed little signs of change in their health status over the last decade. In this study, 6.8% of immigrants reported that they suffered from an anxiety or mood disorder diagnosed by a health professional, lower than that of the general population (Agic, 2015). Robert (2012) also observed an advantage for recent immigrants (less than 10 years) but not for established immigrants (greater than 10 years). Salami et al. (2017) indicated that migrants to Canada do not have worse mental health. However, there is a trend toward a decline in immigrants' health after living in Canada for more than 10 years.

Chai (2023) examined the associations between length of residence in Canada and self-rated mental health and general health using data from the 2017-2018 Canadian Community Health Survey collected by Statistics Canada and suggested that long-term immigrants reported poorer self-rated mental health.

Household food security

Food security is a critical determinant of both physical and mental well-being. Research has shown that individuals experiencing food insecurity are more likely to report higher levels of stress, anxiety, and depression (Davison & Gondara, 2021). This relationship is particularly pronounced among vulnerable populations such as low-income families, immigrants, and those living in urban areas with limited access to nutritious food (Muldoon et al., 2013). In Canada, approximately 15.9% of households experienced some level of food insecurity in 2022, with higher rates among immigrants, single-parent families, and Indigenous populations (Tarasuk et al., 2019). Immigrants and refugees are disproportionately affected due to barriers such as low income, employment instability, and lack of access to social safety nets (Tarasuk et al., 2016). A study by Maynard et al. (2019) found that Canadian adults in food-insecure households had a twofold increase in the likelihood of experiencing moderate to severe depression compared to those in food-secure households. Similarly, children in food-insecure households exhibited higher levels of behavioral problems and emotional distress (Melchior et al., 2012).

The relationship between food insecurity and mental health is multifaceted. The stress of inadequate food access can lead to chronic stress, negatively impacting mental health. Moreover, food insecurity often overlaps with other social determinants, such as unemployment and housing instability, further compounding mental health challenges (Tarasuk

et al., 2016). Nutritional deficiencies resulting from food insecurity also contribute to poor cognitive function and increased susceptibility to mental illnesses like depression (Davison & Gondara, 2021).

Social Provision

Social support is an essential determinant of health and is particularly pronounced in immigrant populations. The acculturation process, cultural adaptation, and the establishment of new social networks can significantly impact the mental well-being of immigrants (Guruge et al., 2015). In their study, (Chadwick & Collins, 2015) confirmed that a sense of belonging among immigrants was significantly lower for those living in Canada for five years or less.

Social support refers to the cognitive appraisal of being connected to others and knowing that support is needed (Chernomas & Clarke, 2001). Immigrants rely on three types of social support: family, peers, and outsiders: this social support can influence mental well-being via some psychological pathways (Puyat, 2013). Some studies have revealed that social support operates through its influence on emotion, mood, self-esteem, and perceived well-being and contributes to this perception (Guruge et al., 2015; Hynie et al., 2023; Makwarimba et al., 2010). Thus, social support has been identified as a protective factor that positively affects stress and overall well-being (Fenta et al., 2004). Having a support system plays a crucial role in helping immigrants adapt to their new environment and preventing depression and psychological distress (Guruge et al., 2015). The strength of the link between social support and mental health may vary based on immigrant status, with limited social support being particularly harmful to recent immigrants (Makwarimba et al., 2010; Puyat, 2013). For example, using the 2009/2010 Canadian Community Health Survey, Puyat (2013) found that individuals with high social support had lower odds of reporting mental disorders, and this

association appeared strongest among long-term immigrants compared with individuals who had moderate levels of social support.

Racial background

Racism is a key determinant of health and wellbeing (Public Health Agency of Canada, 2020, September 8). As indicated by a national survey conducted in 2009, one in five immigrants encounter racially discriminatory practices (Salam et al., 2024). Racial discrimination can impact the physical and mental health of immigrants in several ways. For example, a study focusing on Afghan immigrant youth in Canada revealed that 15% reported regular experiences of racism, within which 15% also reported symptoms of depression, and a quarter reported suicidal thoughts (Soltan et al., 2023). Another study on Korean Canadians found that overt discrimination diminished positive mood and was associated with depressive symptoms (Oh et al., 2022).

Furthermore, a study using data from Canada's General Social Survey (2014) found that immigrants reported higher levels of psychological distress than their White counterparts, largely due to experiences of systemic racism and discrimination (Kenny et al., 2024). Similarly, South Asian women, particularly those engaged in precarious employment, were found to be at higher risk for depression and anxiety disorders (Berrios-Riquelme PhD et al., 2022). Racism has been reported to be a bigger challenge for female immigrant youth since they have to deal with peer group pressure to adjust to a new culture and, while concurrently responding to their family's cultural expectations (Fung & Guzder, 2021). There is also some evidence that older immigrant women experience specific problems with isolation, abuse, language, culture, and mobility (Berrios-Riquelme PhD et al., 2022). Substantial literature shows that race and gender discrimination are major inhibitors for racialized immigrants to

attain economic and social inclusion (Berrios-Riquelme PhD et al., 2022; Cénat et al., 2022; Fung & Guzder, 2021; Williams et al., 2022). For instance, high rates of underemployment, unemployment, and poverty have been reported in Canadian immigrants. Racialized minority immigrants also experience wage discrimination in the labour market and many adverse living conditions which threaten their mental health as well as the overall health of the host society (Fung & Guzder, 2021).

Dwelling ownership

Home ownership for immigrants is paramount in developing this group's economic and social incorporation and advancement in the host country (Gellatly & Morissette, 2019). Dwelling ownership plays a critical role in determining the mental health outcomes of individuals, especially immigrants. For immigrants in Canada, home ownership is often seen as a marker of social and economic integration, and it may influence mental health through financial security, community belonging, and reduced stress associated with housing instability (Haan et al., 2023; Logan & Murdie, 2016; Wu et al., 2011). Homeownership may also solidify immigrants' intention to stay as they shift where they invest their time and money from their origin to their destination communities (Tesfai, 2016). Montazer (2022) revealed better mental health among immigrant homeowners compared to native-born and foreign-born renters and native-born homeowners.

Intersectionality Framework

Intersectionality, initially proposed by Kimberle Crenshaw, constitutes a theoretical framework highlighting the interconnectedness of social categories and identities.

Intersectionality, as a theoretical framework, was initially developed to understand how various dimensions of identity, such as race, gender, class, and more, interact and intersect to create unique and complex experiences of privilege and oppression (Crenshaw, 1991). In the context of mental health, intersectionality acknowledges that individuals may simultaneously encounter various forms of oppression or privilege due to the overlapping nature of their identities (Crenshaw, 2013). This theory argues that these factors are not isolated but interact in ways that can amplify or mitigate the impact of discrimination and disadvantage. In the realm of mental health, this means recognizing that a person's mental well-being is not solely determined by one factor but is shaped by the dynamic interconnections between different social categories (Cole, 2009).

Intersectionality and immigrants' mental health are interconnected through the recognition that individuals embody multiple social identities and experiences, and these intersections shape their mental health outcomes. Immigrants bring many identities, including but not limited to race, ethnicity, gender, sexual orientation, language, and socioeconomic status (Cairney et al., 2014). These identities intersect and interact, creating a complex web of experiences that influence mental health (van Mens-Verhulst & Radtke, 2008).

Intersectionality for Immigrant Groups

Numerous studies from a variety of countries found that Immigrants appear to be healthier than the native-born population, which can be described by the term "Healthy Immigrant effect" (Vang et al., 2017). However, there is variation in findings regarding the duration of this advantage before deterioration occurs. There is compelling evidence indicating that the healthy immigrant effect is not universally applicable across all categories of immigrants. A comprehensive literature review conducted by Vang et al. (2017) revealed that

while mental health studies in Canada generally support this phenomenon for adults, its presence may be weak or even absent in the case of youth or elderly immigrants. For example, an examination of mood disorders based on the 2011 Canadian Health Survey, which considered the age of immigration from childhood to adulthood, demonstrated higher rates of affective disorders among individuals who migrated in early childhood (Islam, 2015). Moreover, more immigrant women than men exhibited an increased risk of poor mental health (Vang et al., 2017). Therefore, it is crucial to take into account the specific immigrant subgroup, the unique challenges faced by an ethnic group, age, gender, etc., within a particular context under investigation when assessing the mental health risk among Canadian immigrants.

Intersectional analyses are now increasingly conducted in public health research to allow for a more precise mapping of health inequalities and the associated mechanisms of social change (Savaş et al., 2021). For example, intersectional analyses of immigrant health in Europe and North America indicate that the "healthy immigrant effect" is not consistently applicable to all immigrants (Morrow et al., 2020). Referring to the work of Crenshaw (1991), intersectionality theory emphasizes the interconnectedness of multiple social identities and how they intersect to shape experiences and outcomes. For example, research conducted with immigrants, refugees, and non-status individuals of African-Caribbean, Asian, and Latino descent living with HIV in Toronto revealed that they faced stigma and discrimination rooted in intersecting dimensions of race, class, gender, citizenship, sexualities, body norms, and HIV status (Pui-Hing Wong et al., 2013). These variations in research outcomes highlight the complexity of the relationship.

Conclusion

This literature review reveals that social and demographic factors, such as race, gender, housing stability, employment status, and access to resources, significantly intersect to shape the mental health outcomes of Canadian immigrants. Experiences of systemic racism, economic disparities, and social exclusion disproportionately affect racialized immigrants, compounding stress and psychological distress. Gendered dynamics, particularly among women, and challenges related to housing and food security further exacerbate mental health vulnerabilities. However, cultural resilience and community support provide critical buffers against these adversities. Addressing these intersecting factors requires targeted, equity-focused policies and culturally appropriate mental health interventions to promote well-being and social inclusion for all immigrant groups in Canada.

CHAPTER 3: METHODS

Study design

This study used the 2017-2018 cross-sectional Canadian Community Health Survey (CCHS) public-use micro-data file to explore the research questions. These cross-sectional data have been chosen as they can be used to assess the prevalence of disease in a representative sample of the Canadian population at a specific point in time while also allowing for the exploration of associations between various socio-demographic and health access variables and the outcome of perceived mental health. The CCHS study used the Strengthening and Reporting of Observational Studies in Epidemiology (STROBE) guidelines for cross-sectional studies to ensure it will be of the highest quality possible (Vandenbroucke et al., 2007).

Setting

CCHS data were collected from persons aged 12 and over living in private dwellings in over 100 Canadian health regions. The 2017-2018 combined CCHS survey collected data from respondents across the ten provinces and territories over two years (Statistics Canada, 2020).

Participants

Data were collected from persons aged 12 and over living in private dwellings. Individuals living on Indian Reserves and Crown Lands, institutional residents (health institutions, prisons, religious institutions, convents, etc.), full-time members of the Canadian forces, youth aged 12 to 17 living in foster homes, and residents of certain remote regions were excluded from the study. The CCHS claims to represent approximately 98% of the Canadian population aged 12 and over (CCHS, 2020).

Data collection

This current study accessed the 2017-2018 combined Canadian Community Health Survey (CCHS) public-use dataset. The CCHS is a Statistics Canada cross-sectional survey that collects information related to health status, healthcare utilization, and health determinants for the Canadian population. The survey collected data from 113,290 Canadian respondents in 2017 and 2018. Within this combined two-year sample, 18,061 respondents identified as immigrants.

In completing the CCHS, trained Statistics Canada interviewers conducted computer-assisted telephone and personal interviews in various languages between January and December 2017 and 2018 to form the pooled sample represented in the 2017/2018 CCHS combined dataset. Approximately 75% of these completed case interviews were conducted over the phone (CATI), and 25% were conducted in person using personal interviews (CAPI). The CCHS included three content components: common content- core content and theme content, optional content, and rapid response content. The core content component includes questions asked of respondents in all provinces and territories. In contrast, theme content was asked of all survey respondents and comprised modules, or in some cases, groups of questions within modules related to a specific topic. The optional content was designed to allow provinces and territories to collect particular data that addresses their public health priorities (CCHS, 2020).

The interviewer might be required to follow up by calling, emailing, texting, or visiting the respondent if a completed online questionnaire is not received within a limited period. Rapid response rates are offered on a cost-recovery basis to organizations interested in obtaining national estimates on an emerging or specific topic related to the health of the

population. Proxy reporting (when a selected respondent is unable to answer for themselves) is allowed on CCHS, although specific questions may be skipped. These data are freely available through Statistics Canada, and the public-use version of these combined 2017-2018 data requires no application to access these data, and it is not necessary to engage in data analysis within a secure Research Data Centre.

Quality Control

Several methods for data controlling and monitoring measures were put in place. Throughout the data collection process, systems of validation, a series of reports, and a new data collection management approach were implemented to ensure data quality and to optimize collection. The recorded computer-assisted personal interviews (CAPI) and computer-assisted telephone interviews (CATI) were randomly chosen for validation with senior interviewers to ensure proper techniques and procedures. Feedback was provided to detect issues promptly, and reports were produced to manage data collection.

A responsive collection design was implemented where the interviewer group changed during each collection phase to maximize response rates, productivity, and the representativeness of the collected sample. For individuals who refused to participate in the survey, a letter was sent from the nearest Statistics Canada Regional Office to the respondent, focusing the importance of the survey and the household's collaboration. A senior interviewer or a project supervisor gave a second call (or visit) to convince respondents about the importance of participating in the survey. To remove the language barriers in interviews, the interviewers were recruited with a competency in wide range of languages.

Sample size

The total sample size in the 2017- 2018 CCHS survey was 113,290, including 18,683 immigrant respondents. The samples for the youth population aged 12 to 17 and the adult population aged 18 and over were treated separately. The combined sample size is representative of the population over these two years. For the present analysis, the same sample size (113,290) was extracted

Table 1: CCHS Sample Size and Population Size Represented by that Sample by Age Group

Age group	Sample size	Canadian population size represented by the sample
12-17	8,654	2,251,067
18-34	22,128	8,253,263
34- 49	21,909	7,166,259
50-64	28,201	7,579,046
65+	32,398	6,024,720

Measures

Outcome: Perceived Mental Health

Perceived mental health generally refers to a person's perception of their mental health, either by the person themselves or, in the case of proxy response, by the person responding for an individual (Statistics Canada, 2018). Perceived mental health provides a general indication of the population suffering from some form of mental disorder, mental or emotional problems, or distress, not necessarily reflected in self-reported (physical) health.

In the CCHS survey, respondents were asked to rate their mental health as poor, fair, good, very good or excellent. For the purposes of logistic regression analysis, these categories

were recoded into binary data by merging excellent, very good and good as "good" and fair and poor as poor mental health.

During the fall of 2020, recent immigrants living in Canada for less than 10 years since immigration were more likely to report positive mental health (74.2%) in comparison to established landed immigrants (65.5%), and Canadian-born (62.5%) (Statistics Canada, 2021).

Explanatory variables of interest

Social-Demographic factors: Recent research has demonstrated associations between perceived mental health and demographic characteristics such as socio-economic status and education (Statistics Canada, 2018). The CCHS survey data includes several variables such as age, sex, household income, ethnicity, educational level, marital status, immigration status and household food security, social support. Age was classified into five groups: ≤ 24 , 25-34, 35-50, 51-64 and 65+ years old. Ethnicity was grouped as a white, Aboriginal, or visible minority. Respondents' educational status was categorized into less than secondary school graduation, secondary school graduation, and post-secondary certificate diploma/ university education. Marital status was defined as married, common-law, widowed/ divorced/separated, and single/never married. Respondents were grouped into five household income categories, with \$20,000 increments beginning with zero. It was categorized as no income or less than \$20,000, \$20,000 to \$39,999, \$40,000 to \$59,999, \$60,000 to \$79,999, and \$80,000 or more per year. Household food access was categorized into food secured, moderately food insecure, and severely food insecure. Immigrants often have lack of social support, which has been found to exacerbate mental illness (Alvi et al., 2012). Social support in these CCHS data has been categorized as "yes" or "no." Declining mental health status among immigrants is likely to be influenced by social support networks (Dunn & Dyck, 2000). Immigrants report having fewer

close friends and relatives and that their mental health is affected to a greater degree by their levels of social support compared to their Canadian-born counterparts (Lou & Beaujot, 2005; Puyat, 2013). U.S. studies have also revealed that low social support for immigrant workers is associated with mental health problems (Ornelas & Perreira, 2011; Tran et al., 2014; Tsai & Thompson, 2013). CCHS data categorizes immigrant status as landed immigrants (non-permanent residents) and non-immigrants (Canadian-born).

Table 2: Details of variables of interest used in the study

S.N.	Variables (Independent)	Name of variable in the dataset	Measures used
1	Immigrant status(D)	Sdcdvim	Landed immigrant/non- permanent resident (1) Non- immigrant (Canadian born) (2)
2	Sex	DHH_SEX	Male Female
3	Sexual Orientation Considers heterosexual /homo/bi/sexual	SDC_035	Heterosexual Homosexual, that is lesbian or gay Bisexual
4	Marital status	dhhgms	Married Common in law Widowed /divorced/separated Single
5	Household size (D)	dhdghsz	Exact no. of person living in house =1,2,3,4 5 or more persons
6	The highest level of education(respondent) (D)	EHG2DVR3	Less than secondary school graduation Secondary school graduation, No-post secondary certificate diploma or u
7	Total Household Income all sources (D)	incdghh	No/less than \$20k 20- 39,999k 40 – 59,999k \$60 – 79,999k \$80k or more
8	Social provision	Dosps	Yes No
9	Age	dhhgage	≤24 25-34 35-49 50-64 65+
10	Dwelling ownership	DHH_OWEN	Owned by member of hhld, even if it is still being paid for Rented, even if no cash rent is paid (2 categories)

11	Length of time in Canada since immigration	sdcldgres	0-9yrs 10-21 yrs
12	Racial background (D)	SDCDGCGT	White Non-white
13	Household food security status (D)(including marginally)	FSCDVHF2	Marginally food insecurity Moderately food insecurity Severely food insecurity
14	Total Household Income all sources (D)	incdghh	No income/<\$20k 20- 39,999k 40 – 59,999k \$60 – 79,999k \$80k or more

Table 3: Details of Outcome variable used in the study

S.N	Outcome Variable (Dependent)	Name of variable in the dataset	Measures used
1	Perceived Mental Health	GEN_015	Poor Fair (4 categories) Good Very Good Excellent

CHAPTER 4: RESULTS

Using the Canadian Community Health Survey, the associations between socio-demographic factors and perceived mental health outcomes using the Canadian Community Health Survey (CCHS) 2017 & 2018 combined public use dataset were explored. To account for the complex survey design of the CCHS, estimates were weighted with the survey sampling weights provided by Statistics Canada and variance was estimated using the bootstrap method (CCHS, 2020). Adjusted logistic regression models were utilized to explore the association and chi-squared, Cramer's V and Phi test to explore the interactions between the variables of interest. All statistical analyses were performed using STATA (17, Stata Corp LLC, College Station, TX).

The prevalence of poor mental health is first presented for each population group. Then, logistic regression models are fitted to estimate the unadjusted odds ratios to report poor mental health stepwise by selected demographic and socioeconomic characteristics. A series of nested and parallel models are built to examine the intersection of various demographic characteristics.

Perceived mental health

Self-rated mental health is measured using the CCHS 2017-2018 -Annual component data. Respondents were asked, "In general, would you say your mental health is"? Response options were: "excellent", "very good," "good," "fair," or "poor." This study defines good mental health as reporting mental health as "excellent, very good and good" and poor mental health as "fair and poor". The "fair" and "poor" categories have been combined into the category of "poor" mental health, and good, very good, and excellent categories have been combined into the category of "good" mental health.

Table 1 shows the weighted Canadian population prevalence by perceived mental health status (rounded to the nearest 100), stratified by immigration status and a variety of socio-demographic characteristics explored in this study.

Table 4: Proportion of the Total population and Immigrant population by Perceived mental health

Socio-demographic variables	Total Estimated Population (Weighted proportion of population)		Estimated Immigrant Population (Weighted proportion of immigrant population))	
	Good	Poor	Good	Poor
Age				
<=24	4,631,600 (16.53)	483,900 (21.65)	872,600(11.93)	68,500 (16.07)
25-34	4,737,100 (16.91)	388,700(17.39)	1,315,700 (17.99)	47,400 (11.13)
35-49	6,543,000 (23.35)	518,900 (23.21)	2,104,800 (28.78)	106,200 (24.92)
50-64	6,862,900 (24.49)	558,000 (24.97)	1,675,100 (22.90)	115,600 (27.12)
65+	5,244,100 (18.72)	285,800 (12.78)	1,346,000 (18.40)	88,500 (20.76)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200(100)
Sex				
Male	13,893,200 (49.59)	957,600 (42.84)	3,605,100 (49.29)	169,200 (39.71)
Female	14,125,600 (50.41)	1,277,600 (57.16)	3,709,100 (50.71)	257,000 (60.29)
Total	28,018,800 (100)	2 235,300 (100)	7,314,200 (100)	426,200 (100)
Sexual orientation				
Heterosexual	25,411,200 (90.69)	1,909,300 (85.42)	6,791,100 (92.85)	377,800 (88.63)
Homosexual/Bisexual	749,400 (2.67)	195,300 (8.74)	165,800(2.27)	27,400 (6.42)
Missing	1,858,200 (6.63)	130,700 (0.24)	357,300 (0.17) (4.88)	21,100 (4.94)

Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)
Total household income	Good	Poor	Good	Poor
no income/>\$20,000	1,683,800 (6.01)	301,900 (13.51)	591,000 (8.08)	52,500 (12.32)
\$20,000 to \$39,999	3,431,000 (12.25)	410,000 (18.34)	1,008,600 (13.79)	98,100 (23.02)
\$40,000 to \$59,999	3,907,900 (13.95)	336,900 (15.07)	1,145,600 (15.66)	62,000 (14.55)
\$60,000 to \$79,999	3,592,500 (12.82)	279,200 (12.49)	919,800 (12.58)	48,800 (11.44)
\$80,000 or more	15,387,300 (54.92)	904,500 (40.47)	3,644,900 (49.83)	164,700 (38.63)
Missing	16,200 (0.06)	2,800 (0.13)	4,300 (0.06)	200 (0.03)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)
Marital status				
Married /c.law	16,709,300 (59.64)	923,100 (41.30)	4,891,100 (66.87)	218,900 (51.36)
Widowed/divorced/ Separated/Single	11,263,800 (40.20)	1,307,500 (58.49)	2,412,300 (32.98)	206,500 (48.44)
Missing	45,700 (0.16)	4,700 (0.21)	10,800 (0.15)	900 (0.20)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)
Education				
Less than secondary school graduation	4,545,400(16.22)	453,700 (20.30)	807,700 (11.04)	76,500 (17.94)
Secondary school graduation, no post- secondary education	6,242,500(22.28)	617,900 (27.64)	1,440,700 (19.70)	101,200 (23.73)
Post-secondary certificate diploma or univ degree	16,794,500 (59.94)	1,119,400 (50.08)	4,935,100 (67.47)	237,900 (55.81)
Missing	436,300(1.56)	44,300 (1.98)	130,800 (1.79)	10,700 (2.52)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)
Food Security				
Food secured	25,471,800 (90.91)	1,664,800 (74.48)	6,612,800 (90.41)	325,200 (76.31)
Moderately food insecure	1,467,400 (5.24)	257,970 (11.54)	515,350 (7.05)	48,480 (11.37)
Severely food insecure	514,200 (1.84)	246,200 (11.01)	94,900 (1.30)	37,400 (8.77)
Missing	565,400 (2.02)	66,300 (2.96)	91,200 (1.25)	15,100 (3.55)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)
Length of time in Canada since immigration	-	-		
0-9 years			1,853,000 (25.33)	66,500 (15.59)
10 or more years			4,575,700 (62.56)	309,300 (72.58)
Missing			885,500 (12.11)	50,400 (11.83)
Total			7,314,200 (100)	426,200 (100)
Household size				
1	4,101,000 (14.64)	475,900 (21.29)	6,422,200 (87.80)	344,200 (80.77)
2 or more	23,907,700 (89.33)	1,758,500 (6.60)	889,500 (12.16)	81,700 (19.17)
Missing	10,000 (0.04)	900 (0.04)	2,500 (0.03)	200 (0.06)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)

Racial Background				
White	20,119,400 (71.81)	1,610,300 (72.04)	2,317,000 (31.68)	150,700 (35.36)
Non-White	6,390,800(22.81)	440,500 (19.71)	4,894,200 (66.91)	269,700 (63.27)
Missing	1,508,600 (5.38)	184,500 (8.25)	103,100 (1.41)	5,900 (1.37)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)
Social provisions				
Yes	7,400,900 (26.41)	648,900 (29.03)	2,112,000 (28.88)	1,40,000 (32.83)
No	20,617,900 (73.59)	1,586,400 (70.79)	5,202,200 (71.12)	286,300 (67.17)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)
Dwelling ownership				
owned	20,404,200 (72.82)	1,304,800 (58.37)	4,797,100 (65.59)	240,700 (56.48)
Rented	7,193,300 (25.67)	893,700 (39.98)	2,486,300 (33.99)	181,100 (42.50)
Missing	421,300 (1.50)	36,800 (1.64)	30,800 (0.42)	4,400 (1.02)
Total	28,018,800 (100)	2,235,300 (100)	7,314,200 (100)	426,200 (100)

Table 5: Unadjusted Odds of Poor Mental Health by Socio-demographic Variables

Socio-demographic Variables	OR (95% C I)^a Total Canadian Sample Population	OR (95% CI)^a Immigrant Sample Population
Independent variables		
Age		
≤24	1.21 (1.13 1.30)***	1.19 (0.83 1.72) p=0.343
25-34	1.17 (1.08 1.26)***	0.55 (0.39 0.76) ***
35-49	1.13 (1.07 1.20)***	0.77 (0.58 1.02) P = 0.071
50-64	1.11 (1.05 1.17)***	1.05 (0.79 1.40) P = 0.743
65+	Reference	Reference
Sex		
Male	Reference	Reference
Female	1.26 (1.21 1.32) ***	1.48 (1.20 1.82) ***
Sexual orientation		
Heterosexual	Reference	Reference
Lesbian/Gay/Bisexual	2.39 (2.11 2.71)***	2.97 (1.88 4.70) ***

Total household income		
no income/<\$20,000	2.26 (2.08 2.46) ***	1.97 (1.46 2.65) ***
\$20,000 to \$39,999	1.68 (1.57 1.80) ***	2.15 (1.64 2.82) ***
\$40,000 to \$59,999	1.46 (1.37 1.56) ***	1.20 (0.87 1.64) P = 0.262
\$60,000 to \$79,999	1.24 (1.15 1.33) ***	1.17 (0.79 1.75) p = 0.432
\$80,000 or more	Reference	Reference
Marital status		
Married /c.law	0.67 (0.64 0.70) ***	1.91 (1.54 2.37) ***
Widowed/separated/divorced/single	Reference	Reference
Education		
Less than secondary school graduation	Reference	Reference
Secondary school graduation	0.98 (0.92 1.05) P=0.56	0.74 (0.53 1.03) P= 0.073
Post-secondary	0.73 (0.69 0.78) ***	0.51 (0.38 0.68)***
Food Security		
Food secured	Reference	Reference
Moderately food insecure	2.18 (1.99 2.40) ***	1.91 (1.37 2.67)***
Severely food insecure	4.49 (3.94 5.12) ***	8.01 (5.31 12.08)***
Length of time in Canada		
0-9yrs	-	Reference
10 or more years	-	1.89 (1.38 2.58) ***
Household size		
1	1.37 (1.31 1.43) ***	1.71 (1.42 2.06)***
≥2	Reference	Reference
Racial Background		
White	Reference	Reference
Non-White	1.03 (0.96 1.10) p=0.412	0.85 (0.69 1.04) p=0.116

Social provisions		
Yes	0.92 (0.88 0.97) ***	0.83 (0.68 1.02), P=0.077
No	Reference	Reference
Dwelling ownership		
owned	Reference	Reference
Rented	1.46 (1.38 1.53) ***	1.45 (1.17 1.81) ***

*Notes: ^a Estimates Calculated utilizing bootstrap weights; * $p<0.05$; ** $p<0.01$; *** $p<0.001$; CI = Confidence Interval*

Age

Canadian individuals aged ≤ 24 (OR =1.21, 95% CI: 1.13-1.30, $p<0.001$) had a significantly higher likelihood of reporting poor mental health compared to the reference group (65+ years). The second highest odds were observed in the 25-34 age group (OR =1.17, 95% CI: 1.08-1.26, $p<0.001$) and these odds steadily decrease with increasing age groups, with the 50-64 age group (OR: 1.11, 95% CI: 1.05-1.17, $p<0.001$) being slightly less at risk. The proportion of individuals aged ≤ 24 with poor mental health is 21.65%, which is higher than their representation in the general population (16.53%).

For immigrants, the trend is reversed for the 25-34 age group with a 45% reduced odds of poor mental health (OR=0.55, 95% CI: 0.39-0.76, $p<0.001$). However, outside this age group, no statistically significant increased or decreased odds of poor mental health was noted. Among immigrants reporting poor mental health, the greatest proportion was noted among those between 50 and 64 years-old (27.12%) followed by those between 35 and 49 years-old (24.92%).

Sex

Females were significantly more likely to report poor mental health (OR=1.26, 95% CI: 1.21-1.32, $p<0.001$) compared to males. These data showed that 57.16% of females reported

poor mental health, while 42.84% of males reported poor mental health in the general Canadian sample.

Immigrant females (OR=1.48, 95% CI: 1.20-1.82, $p<0.001$) were at even higher risk for poor mental health compared to immigrant males and were overrepresented among those with poor mental health (60.29%) compared to immigrant males (39.71%). These findings suggest that females, in both the general and immigrant populations, are at increased risk of poor mental health compared to males.

Sexual Orientation

Sexual minority respondents in the estimated Canadian population (Lesbian, Gay, or bisexual) were significantly more likely to report poor mental health (OR: 2.39) compared to heterosexuals; however, only 8.74% of the total sample population identified as homosexual or bisexual while also reporting poor mental health.

Sexual minority immigrants showed an even greater odds of poor mental health (OR=2.97, 95% CI: 1.88-4.70, $p<0.001$). Among immigrants reporting poor mental health 6.42% identified as lesbian, gay, or bisexual.

These results highlight that sexual minority immigrants face an almost 3 fold increased in the odds of reporting poor mental health outcomes compared to their heterosexual counterparts, which exceeds the odds of reporting poor mental health among LGB individuals in the general Canadian population (OR=2.39, 95% CI: 2.11-2.71, $p<0.001$).

Total Household Income

Canadians consistently demonstrated higher odds of reporting poor mental health as their household income level decreased, with the lowest income bracket (<\$20,000) reporting

almost 2.3 times higher odds of poor mental health (OR=2.26, 95% CI: 2.08 – 2.46, $p<0.001$), compared to those earning \$80,000.

Among immigrants, the income group between \$20,000-\$39,999 had the highest odds of reporting poor mental health (OR=2.15, 95% CI: 1.64-2.82, $p<0.001$), with the second highest odds being seen in those with a household income less than \$20, 000 (OR=1.97, 95% CI: 1.46-2.65, $p<0.001$). These results suggest that low-to-moderate household income levels may be particularly impactful on immigrant's mental health. Other higher income groups demonstrated decreasing odds of poor mental health as household income increased.

Marital status

The comparison between the total and immigrant population reveals distinct differences in the correlation between marital status and poor mental health. Married or common-law individuals in the general Canadian population were less likely to report poor mental health (OR=0.67, 95% CI: 0.64-0.70, $p<0.001$) than those who are widowed, separated, divorced, or single. Among those in the total Canadian population reporting poor mental health, 41.30% reported being married or common law and 58.49% reported being single/widowed/divorced/separated.

Immigrants demonstrated a reversed trend compared to the general population, with married or common-law individuals (OR=1.91, 95% CI: 1.54-2.37, $p<0.001$) being more likely to report poor mental health compared to their widowed, separated, divorced, and single counterparts. Unlike the total population, 51.36% of the married/common-law immigrant population reported poor mental health compared to 48.44% of widowed, separated, divorced,

and single immigrants. These findings may reflect a unique pattern of risk for poor mental health among immigrant domestic partnerships.

Education

Among the whole Canadian population, those with post-secondary education had a significantly reduced odds of reporting poor mental health (OR=0.73, 95% CI: 0.69-0.78, $p<0.001$) with only 6.25% of those with post-secondary education reporting poor mental health. Secondary school graduation neither increased nor decreased the odds of poor mental health (OR=0.98, 95% CI: 0.92-1.05, $p=0.56$) in the general population. Similarly, the odds of poor mental health were significantly reduced by 49% (OR= 0.51, 95% CI: 0.38-0.68, $p<0.001$) in immigrants with post-secondary education, with 55.81% of those immigrants reporting poor mental health also possessing post-secondary education. Immigrants with secondary school graduation were not at significantly increased or decreased risk of reporting poor mental health (OR=0.74, 95% CI: 0.53-1.03, $p=0.073$).

Food Security

In the food-secured group, immigrants had a higher proportion of poor mental health (76.31%) compared to the total sample population of Canadians (74.48%), while in the severely food-insecure group, the total sample has a higher proportion of poor mental health (11.01%) compared to immigrants (8.77%).

As food insecurity increased, the odds of poor mental health increased in both the immigrant sample and total population sample. Canadians who were moderately food insecure, demonstrated over twice the odds of reporting poor mental health with an OR of 2.18 (95% CI: 1.99-2.40, $p < 0.001$), while the odds of poor mental health in the immigrant population was

slightly lower with an OR of 1.91 (95% CI: 1.37-2.67, $p < 0.001$). However, the odds of poor mental health were particularly high among those who were severely food insecure, with an OR of 4.49 (95% CI: 3.94-5.12, $p < 0.001$) in the total sample population of Canadians, while the immigrant population exhibited an alarmingly high OR of 8.01 (95% CI: 5.31-12.08, $p < 0.001$). While moderate food insecurity was a significant risk factor for poor mental health in both immigrants and the total sample, severe food security is a particularly significant risk with an over four-fold increase in the odds of poor mental health among the total Canadian sample, and an eight-fold increase in odds among immigrants.

Immigration Status and Length of Stay

The longer an immigrant resides in Canada, the greater their odds of reporting poor mental health. Immigrant respondents, who had been in Canada for 10 or more years demonstrated a significantly increased odds of poor mental health compared to those who had resided in Canada for nine years or less (OR = 1.89, 95% CI 1.38, 2.58, $p < 0.001$). This translated to a higher prevalence of poor mental health (72.58%) among immigrants residing in Canada for 10 or more years compared to those who had been in Canada for nine years or less (15.59%).

Household size

This result revealed significant differences in the distribution of poor mental health based on household size between immigrants and the total sample population.

While 21.9% of the total sample population living alone reported poor mental health, a striking 80.77% of immigrants, who lived alone, experienced poor mental health. In households with two or more persons, the proportion of poor mental health was lower in both

groups, but immigrants still reported a higher prevalence of poor mental health (19.17%) compared to the total population (6.60%).

For single-person households, the total sample population exhibited a significantly increased odds of reporting poor mental health (OR=1.37, 95% CI: 1.31-1.43, $p < 0.001$), compared to households of two or more persons. In the immigrant population, the odds of poor mental health among those who lived alone was even greater (OR=1.71, 95% CI: 1.42-2.06, $p < 0.001$), suggesting that immigrants living alone may be at an even higher risk of poor mental health compared to their counterparts in multi-person households.

Racial background

In the total population, the prevalence of White individuals experiencing poor mental health was 72.04% compared to 19.71% non-white individuals. Among the immigrant population, 35.36% of Whites reported poor mental health, while 63.27% of Non-Whites, experienced poor mental health. However, the calculated odds of reporting poor mental health (See Table 2) were not significantly increased based on racial background in the immigrant population or the total sample.

Social Provisions

The proportion of poor mental health is higher in the total population without social provisions (70.79%) compared to the immigrant population without social provisions (67.17%). However, among those reporting social provisions, immigrants had a higher prevalence of poor mental health (32.83%) compared to the total sample (29.03%).

Among those in the general population, the odds of poor mental health was significantly reduced by approximately 8% among those with social provisions (OR = 0.92, 95% CI: 0.88-0.97, $p < 0.001$), indicating a significant reduction in the odds of poor mental

health compared to those without social provisions. In contrast, the odds of poor mental health among the immigrant sample population with social provisions was also reduced but not statistically significant (OR=0.83, 95% CI: 0.68- 1.02), p=0.077).

Dwelling ownership

Renting was associated with increased odds of poor mental health outcomes in both the total sample and the immigrant populations. In the group who owned dwellings, the total sample had a slightly higher proportion of poor mental health (58.37%) compared to immigrants (56.48%). In contrast, among those who rented their dwellings, immigrants had a slightly higher proportion of poor mental health (42.50%) compared to the total sample (39.98%).

Immigrants who rented their homes had approximately 46% higher odds of poor mental health (OR=1.45, 95% CI: 1.17-1.81, p < 0.001) compared to those who owned their home. A similar trend was observed in the total population, with renters having significantly higher odds of poor mental health (OR=1.46, 95% CI: 1.38-1.53, p < 0.001) than homeowners.

Table 6: Adjusted Odds of Poor Mental Health by Socio-demographic Variables

Socio-demographic Variables	OR_{adj} by Total sample population	OR_{adj} by Immigrant Population
Independent variables		
Age		
≤24	1.57 (1.33 1.84) ***	0.73 (0.30 1.76) p= 0.483
25-34	1.49 (1.30 1.71) P ***	0.88 (0.43 1.81) p= 0.733
35-49	1.67 (1.47 1.91) P ***	0.87 (0.51 1.49) p= 0.618
50-64	1.66 (1.47 1.87) ***	0.97 (0.56 1.66) p= 0.904
65+	Reference	Reference
Sex		
Male	Reference	Reference
Female	1.27 (1.16 1.38) ***	1.23 (0.83 1.83) p=0.304
Sexual orientation		
Heterosexual	Reference	Reference

Homosexual/Bisexual	2.55 (2.18 2.98) ***	2.72 (0.99 7.48) p= 0.053
Total household income		
no income/<\$20,000	1.59 (1.35 1.86)***	3.16 (1.48 6.74) **
\$20,000 to \$39,999	1.44 (1.24 1.68) ***	2.14 (1.19 3.83) *
\$40,000 to \$59,999	1.18 (1.02 1.36) p=0.023	1.15 (0.65 2.03) p=0.634
\$60,000 to \$79,999	1.17 (1.01 1.35) p=0.042	1.38 (0.72 2.67) p=0.336
\$80,000 or more	Reference	Reference
Marital status		
Married /c.law	0.59 (0.53 0.66) ***	1.91 (1.15 3.17) *
Widowed/separated/divorced/single	Reference	Reference
Education		
Less than secondary school graduation	Reference	Reference
Secondary school graduation, no post-secondary education	0.91 (0.80 1.05) p=0.119	0.83 (0.42 1.64) p= 0.583
Post-secondary certificate diploma or univ degree	0.72 (0.63 0.81) ***	0.51 (0.28 0.93) *
Food Security		
Food secured	Reference	Reference
Moderately food insecure	1.90 (1.67 2.17) ***	1.47 (0.59 3.68) p=0.412
Severely food insecure	4.66 (4.03 5.38) ***	3.86 (1.89 7.88) ***
Length of time in Canada		
0-9yrs	NA	Reference
10 or more years	NA	2.68 (1.54 4.68) ***
Household size		
1	0.80 (0.65 0.98) *	0.68 (0.39 1.18) p=0.171
≥2	Reference	Reference
Racial Background		
White	Reference	Reference
Non-White	0.68 (0.55 0.83) ***	1.27 (0.85 1.90) p=0.238
Social provisions		
Yes	1.15 (1.06 1.26) **	.50 (0.31 0.79) **
No	Reference	Reference
Dwelling ownership		
Owned	Reference	Reference
Rented	1.10 (0.99 1.23) p=0.073	1.07 (0.70 1.62) p=0.763

The adjusted odds ratios show that various socio-demographic factors remain significantly associated with mental health even in the presence of other intersecting socio-demographic variables. In the total population, younger individuals, females, those with lower incomes and food insecurity, and those identifying as homosexual or bisexual are more likely to report poorer mental health. For the immigrant population, older individuals, females, those with lower incomes, married individuals, those experiencing severe food insecurity, and those identifying as homosexual or bisexual were more likely to report poorer mental health. In contrast, having a higher education, lower length of stay in Canada, and being non-white are protective factors against poor mental health.

Age

In the total population, younger age groups had significantly higher adjusted odds of reporting poor mental health compared to those aged 65 and older, indicating that age may be a strong predictor of mental health issues. In contrast, among the immigrant population, this association was non-significant, suggesting that age might not play a clear role in determining mental health among immigrants. The 95% confidence intervals for the adjusted odds of poor perceived mental health for all age groups of immigrants were reasonably large, suggesting that some immigrants were at reduced odds while others were at increased odds of reporting perceived mental health; therefore, the role of age in immigrant perceived mental health is quite variable.

Sex

For both populations, females consistently reported higher odds of poor mental health compared to males. However, the adjusted odds ratio for reporting poor mental health was slightly lower among immigrants (OR_{adj} : 1.23, 95% CI: 0.83–1.83) than the total population (OR_{adj} : 1.27, 95% CI: 1.16–1.38), indicating a similar pattern across both groups.

Sexual Orientation

Sexual orientation was only a significant predictor of poor mental health in the total population. Homosexual and bisexual individuals were more likely to report poor mental health in the Canadian population (OR_{adj} = 2.55, 95% CI: 2.18–2.98); however, although the adjusted odds of poor mental health are similarly increased (OR_{adj} = 2.72, 95% CI: 0.99–7.48) this is not statistically significant despite the upper end of the confidence interval for the adjusted odds ratio being 7.48.

Income

Immigrants earning between \$20,000 and \$39,999 (OR_{adj} = 2.14, 95% CI: 1.19–3.83) or having no income (OR_{adj} = 3.16, 95% CI: 1.48–6.74) had significantly higher odds of reporting poor mental health. In the total population, the adjusted odds of poor mental health in the \$20,000 and \$39,999 income bracket (OR_{adj} = 1.44, 95% CI: 1.24–1.68) and the no income bracket (OR_{adj} = 1.59, 95% CI: 1.35–1.86), was lower than that seen in the immigrant population, although still significantly increased. In both populations, reporting a household income of \$40 000 or more did not result in significantly higher adjusted odds of reporting poor mental health. These findings suggest that income disparity may have a more profound

impact on mental health among immigrants than the total population, even when controlling for other intersecting socio-demographic variables.

Education

Post-secondary education significantly reduced the adjusted odds of reporting poor mental health in the total population ($OR_{adj}=0.72$, 95% CI: 0.63–0.81) and the immigrant population ($OR_{adj}=0.51$, 95% CI: 0.28–0.93). However, only secondary education was not statistically significant in both populations.

Marital Status

For the total population, being married was associated with lower odds of poor mental health ($OR_{adj}=0.59$, 95% CI: 0.53–0.66), while in the immigrant population, being single, widowed, or separated was linked to higher odds of poor mental health ($OR_{adj}=1.91$, 95% CI: 1.15–3.17). This suggests that marital status may play a more pronounced role in protecting mental health in the general population. In contrast, it may have the opposite effect on immigrants, potentially due to different stressors or social support dynamics in immigrant communities.

Food Security

Although food insecurity was a significant predictor of poor mental health in both populations, the impact was more pronounced in the total population. Severely food-insecure individuals in the total population reported extremely high odds of poor mental health ($OR_{adj}=4.66$, 95% CI: 4.03–5.38), whereas immigrants had somewhat lower but still significant odds of reporting poor mental health ($OR_{adj}=3.86$, 95% CI: 1.89–7.88). In the general population, reporting moderate food insecurity was also associated with an increased adjusted odds of

reporting poor mental health ($OR_{adj} = 1.90$, 95% CI: 1.67–2.17); however, among immigrants a significant adjusted odds was not noted in the same group.

Length of Stay

Immigrants who have been in Canada for ten or more years have significantly higher odds of reporting poor mental health ($OR_{adj} = 2.68$, 95% CI: 1.54–4.68) compared to those who have been in the country for 0-9 years, who serve as the reference group.

Social Provisions

Social provisions are crucial in mental health outcomes, but the effect differs significantly between the total and immigrant populations. In the general population, those with social provisions had higher adjusted odds of reporting poor mental health ($OR_{adj} = 1.15$, 95% CI: 1.06–1.26) compared to those without social provisions. In contrast, social provisions appear to have a protective effect on immigrants, with significantly lower odds of reporting poor mental health ($OR_{adj} = 0.50$, 95% CI: 0.31–0.79) than those without social provisions.

Racial Background

Non-White individuals had lower odds of reporting poor mental health in the total population ($OR_{adj} = 0.68$, 95% CI: 0.55–0.83), while among immigrants identifying as Non-White immigrants did not significantly increase or decrease their adjusted odds of reporting poor mental health.

Household Size

A similar pattern was observed related to household size where a single person in the total population experienced a lower adjusted odds of having poor mental health ($OR_{adj} = 0.80$, 95% CI: 0.65–0.98) compared to households with two or more members; however, no

significant change in the odds of poor mental health was observed in the immigrant population based on household size.

Dwelling Ownership

Renting was not associated with an increase in adjusted odds of reporting poor mental health in both the total and immigrant populations (see Table 3).

CHAPTER 5: DISCUSSION

This study used nationally representative 2017-18 public-use Canadian Community Health Survey data to assess differences in the prevalence of perceived mental health in Canada across sociodemographic characteristics and explore possible associations and interactions between those sociodemographic characteristics and perceived mental health. Several social and demographic characteristics were associated with poor perceived mental health among immigrants and the general Canadian population. Overall, it was found that among the immigrant population, who were sampled by the CCHS survey, mental health is significantly associated with various factors such as age, race, ethnicity, sexual orientation, length of stay in Canada, education, income, household size, food security, marital status, and type of housing. In the following chapter, we discuss the importance of these findings through the theoretical lens of intersectionality and in the context of existing literature in the field. As an analytic framework, intersectionality helps to articulate the complex interactions between the above-mentioned sociodemographic characteristics and the perceived mental health of immigrants in Canada.

Sociodemographic Representation

Our exploratory analysis showed that young immigrants (≤ 24) self-reported a smaller proportion of poor mental health than the total population (16.07% vs. 21.65%). In the 25-34 age group, immigrants also demonstrated a lower proportion of poor perceived mental health (11.13% vs. 17.39%). However, immigrants reported higher proportions of poor perceived mental health in older age groups, particularly for those aged 50-64 (27.12% vs. 24.97% in the total population) and 65+ (20.76% vs. 12.78%). Regarding gender, a significantly larger

proportion of immigrant females reported poor perceived mental health compared to immigrant males (60.29% vs. 57.16%).

Heterosexual immigrants showed a slightly higher proportion of poor perceived mental health (88.63% vs. 85.42%), while lesbian, gay, and bisexual (LGB) immigrants who reported poor perceived mental health represented a lower proportion of the total immigrant population (6.42%) compared to the proportion of LGB individuals in the total Canadian sample (8.74%).

A higher proportion of immigrants with household incomes between \$20,000 to \$39,999 reported poor mental health (23.02% vs. 18.34%) compared to the total population, but a smaller proportion of immigrants in the highest income bracket ($\geq$ \$80,000) reported poor mental health (38.63% vs. 40.47%), which seems to suggest they may perceive greater economic stability at lower income levels. However, previous research indicates that income alone does not shield immigrants from mental health challenges (Lai & Surood, 2008; Guo, 2013).

Immigrants who were married or in common-law relationships reported a higher proportion of poor mental health (51.36% vs. 41.30%), while those who were widowed, divorced, or single showed a lower proportion (48.44% vs. 58.49%). Previous research has shown mixed results on marital status and mental health, with some findings suggesting marriage can offer support, while others suggest it can exacerbate stress if accompanied by acculturation pressures or economic hardships within families (Guruge et al., 2010; Canadian Immigrant, 2023; Statistics Canada, 2020).

A larger percentage of immigrants with a post-secondary certificate diploma or university degree reported poor mental health (55.81% vs. 50.08%). These trends reflect Canada's emphasis on skilled migration, although recent immigrants sometimes experience

challenges in having their foreign credentials recognized (Statistics Canada, 2023). Recent studies by Statistics Canada (2020) and further findings by (Kirkbride, 2024) indicate that immigrants with lower education levels face heightened barriers to stable employment and economic security, factors that contribute significantly to stress and mental health issues. These challenges are more pronounced in comparison to the Canadian-born population, who generally encounter fewer barriers related to credential recognition and employment integration.

Of those immigrants reporting poor mental health, the majority (76.31 vs. 74.48% in the total population) are food secure, and 11.54% are moderately food insecure. This suggests that while food security is generally higher, being food secure does not necessarily shield individuals from poor mental health, as other factors like social support, employment, and cultural adaptation challenges may contribute to mental health issues among immigrants and other vulnerable groups (CAMH, 2022; Statistics Canada, 2023; Zhang et al., 2020).

Of immigrants with poor mental health, 15.59% had been in Canada for nine years or less, while 72.58% had lived for ten or more years in the country. Studies suggest that immigrants who live in Canada for longer periods often experience worse mental health outcomes due to cumulative stressors, such as difficulties with job-market integration, unmet career aspirations, and economic instability (Vang et al., 2019). Research also indicates that the “healthy immigrant effect, which initially benefits newcomers’ mental health, often diminishes as immigrants face prolonged adaptation challenges and potential discrimination (Setia et al., 2018; Salami et al., 2019).

Regarding household size, among immigrants reporting poor mental health, 80.77% had a household size of one. Studies show that immigrants, particularly those who lack

immediate family support, or who are recent arrivals, often experience heightened loneliness, which has a direct impact on self-reported mental health (Niedzwiedz et al., 2021; Qasim & Khalid, 2022). Research on older adults living alone in Canada indicates that approximately one-third report high levels of loneliness, a condition closely associated with poor mental health outcomes (Meisner & Joseph, 2021; Novak & Vickers, 2020). The experience of living alone can exacerbate feelings of isolation among immigrants, particularly those without established community connections or sufficient support networks, further increasing their vulnerability to mental health challenges (Beiser & Hou, 2017; Hynie, 2018).

Non-white immigrants have a higher proportion of poor mental health (63.27%) compared to non-white Canadians (19.71%). These findings are consistent with previous studies of non-white immigrant Canadians which report that discrimination, economic exclusion, and social isolation contribute significantly to poorer mental health outcomes among non-white immigrants compared to white Canadians and non-white Canadian-born individuals (Hyman et al., 2020).

These results indicate that among immigrants with poor mental health, 67.17% lacked social support, with 70.79% lacking social provision. This disparity aligns with evidence showing that limited social support significantly impacts mental health outcomes in immigrant populations, who often face distinct barriers to forming social connections due to language difficulties, cultural differences, and limited access to community resources and social provisions, which may play a crucial role in buffering stressors associated with migration (Hynie, 2018; Beiser & Hou, 2017). Recent research highlights that immigrants who lack support systems experience higher levels of stress and depression compared to those who have established networks of family and friends (Niedzwiedz et al., 2021). Studies also suggest that

social provisions positively impact well-being by offering emotional support, a sense of belonging, and practical assistance, which are essential for mental health resilience, especially among immigrants in their first few years in Canada (Meisner & Joseph, 2021; Qasim & Khalid, 2022).

Finally, for immigrants reporting poor mental health, the rate of home ownership was 56.48%. The higher rate of rental occupancy among immigrants—39.98% compared to 25.67% for the general Canadian population—aligns with findings in recent studies, which suggest that immigrants often face barriers to home ownership due to factors like income disparity, limited access to credit, and the challenges of settling in higher-cost urban areas (Xue, 2022; Hou & Picot, 2020). The rental market, particularly in large cities where many immigrants reside, may present fewer financial barriers initially, but the instability associated with renting can contribute to increased stress and poorer mental health outcomes (Khan & Kobayashi, 2022).

Furthermore, homeownership is often associated with increased stability and community integration, which can positively affect mental health by providing a sense of control and permanence (Fuller-Thomson et al., 2021). Conversely, the stress of housing insecurity and high housing costs in the rental market can negatively impact immigrants' mental health, especially for those experiencing financial strain and other settlement stressors (Teixeira, 2020). These findings highlight the intersection of housing stability and mental health, especially for recent immigrants who may have limited resources upon arrival.

Self-reported Poor Mental Health

We carefully examined the association of socio-demographic factors with the unadjusted and adjusted odds of having self-rated poor mental health. The current findings of

better self-reported mental health are contrary to the findings of a study conducted in Europe that found immigrants to be at greater risk of mental illness compared to non-migrants (Mindlis & Bofetta, 2017). Mental health risks varied significantly across different age groups, with the 50-64 age group experiencing higher rates of poor mental health in both the general and immigrant populations. Canadian evidence from a nationally linked database indicated that midlife and older adults face unique stressors such as physical health declines, retirement concerns, and social isolation, which can contribute to mental health issues (Statistics Canada, 2020).

Raina et al. (2020) from the *Canadian Longitudinal Study on Aging* also found that individuals aged 50 and older experience increased mental health risks due to factors like physical health decline, financial insecurities related to retirement and reduced social connections. These findings are corroborated by research from Gilmour (2018), which highlighted that social isolation and health-related issues are key contributors to mental health decline in older adults in Canada. Furthermore, Ng et al. (2020) found that retirement concerns and financial insecurity add to mental health challenges among older Canadians, and these factors are particularly impactful for immigrants, who may have fewer social supports or more precarious employment histories.

These findings underscore the compounded nature of mental health risk factors for older immigrants, where socio-demographic challenges like age, language, financial instability, and health access barriers intersect to create distinct vulnerabilities (Ahmed et al., 2020; Fuller-Thomson et al., 2019; Salami et al., 2019; Vang et al., 2019).

The Influence of Age on Self-reported Mental Health

A higher proportion of poor mental health was reported by older immigrants (50-64 years) compared to the total Canadian population. This result aligns with recent studies that show the unique mental health vulnerabilities faced by older immigrants, who may face challenges such as acculturation stress, economic difficulties, and lack of social support (Guo et al., 2018; StatCan, 2023). A recent review emphasizes that older immigrants frequently encounter mental health obstacles that can be exacerbated by cultural stigma, difficulty accessing health services, and the perceived inadequacy of mental health care tailored to their specific backgrounds.

These issues are particularly relevant among non-European immigrant groups, who often have fewer resources, and community supports compared to Canadian-born seniors, who often benefit from a more established support system, including family, community, and accessible healthcare, which can buffer against mental health stressors (Mental Health Commission of Canada, 2018). Moreover, the economic pressures among immigrant seniors, including those linked to underemployment or unrecognized foreign credentials, contribute to financial stress, thereby compounding mental health challenges, especially for those who experience marginalization due to language or cultural barriers.

Thus, older immigrant populations may require more targeted mental health interventions that account for their distinct socio-economic and cultural contexts, as suggested by ongoing Canadian research on aging and mental health disparities (Cambridge Core, 2023; Sadavoy et al., 2022). These findings underline the necessity for culturally sensitive and age-specific mental health services to address the unique needs of aging immigrants in Canada.

The Influence of Sex on Self-reported Mental Health

Sex differences in self-reported mental health revealed a higher prevalence of poor mental health among women than men, a trend that aligns with findings in various global studies (Hynie, 2018; Hynie, 2018; Statistics Canada, 2020; Salami, 2020). Women's higher prevalence of mental health issues is often attributed to the more significant social and economic stressors they face, including caregiving responsibilities, gender-based discrimination, and unique biological factors (World Health Organization, 2022). However, this study reflects this pattern only in general populations.

Females in the total Canadian population reported higher adjusted odds of reporting poor mental health ($OR_{adj}: 1.27, 95\%CI: 1.16 - 1.38$). However, in the immigrant population, this association was not statistically significant ($p=0.304$). These results are contrary to other studies, which suggest that females disclose mental health concerns more readily than males, which might correspond to the reported trend of differences based on sex that have been observed over time (Salas-Wright et al., 2016; Vaughn et al., 2014).

This result may suggest that the immigrant resilience factors, such as strong family support networks, cultural beliefs emphasizing endurance, and potentially lower expectations regarding mental health care engagements, may somewhat buffer these challenges. For instance, research from the Centre for Addiction and Mental Health (CAMH) highlights that social support and community cohesion within certain immigrant groups can mitigate stress and improve mental health outcomes, especially among women from collectivist cultures where family support is highly valued (Hynie, 2018). This dynamic may help explain why the mental health disparity seen in Canadian-born women is not as pronounced among immigrant females despite their unique challenges.

The Influence of Sexual Orientation on Self-reported Mental Health

Research indicates that Canadian sexual minorities are at increased risk for mental health issues due to factors like stigma, discrimination, and a lack of social support (Ross et al., 2020). This mental health disparity is reflected in these study findings, showing significantly higher adjusted odds of reporting poor mental health among Canadian sexual minorities compared to heterosexual individuals ($OR_{adj} = 2.55$, 95% CI: 2.18–2.98). Previous studies suggest that LGB immigrants face intersectional disadvantages that exacerbate mental health challenges, which may include but are not limited to, discrimination related to both immigrant and LGBTQ+ status (Meyer, 2003; Bostwick et al., 2014).

For LBG immigrants, the stress associated with being a sexual minority may be compounded by the challenges of adapting to a new cultural context, where attitudes toward LGB identities can vary widely. In contrast, in this study, the non-significant odds among LGB immigrants may suggest that, while elevated risks exist, immigrant status may influence the degree to which these disparities impact mental health, potentially due to the varied effects of social support systems, cultural beliefs within immigrant communities (Hynie, 2018; Ross et al., 2020).

It may also be related to the evidence that many immigrants come from cultures that are less supportive of LGBTQ+ identities. Alternately, the effect size indicated by the adjusted odds of poor mental health among sexual minority immigrants ($OR_{adj} = 2.72$, 95% CI: 0.99–7.48) may under-represent the actual odds of experiencing poor mental health in this population because there are only a few members of this population included in these data. The large confidence interval suggests the statistical power for this estimate is not strong, and that there is likely significant variation among the sample used to calculate this adjusted odds ratio.

It is difficult to know to what degree these data ultimately represent the reality for sexual minority immigrants, or whether there is a response bias among immigrant respondents, who may come from cultures where belonging to a sexual minority is not accepted.

The Influence of Marital Status on Self-reported Mental Health

Marital status significantly impacts self-reported mental health outcomes, with married individuals generally reporting better mental health than those who are single, widowed, or separated. This association is primarily attributed to the social and emotional support that marriage or cohabitation provides, which can act as a buffer against mental health stressors (Ng et al., 2019). For immigrants, marital status similarly influences mental health but may be influenced by additional migration-related stressors, such as family separation and adapting to a new cultural environment. Research highlights that immigrants with supportive marital or cohabitating relationships often report better mental health outcomes compared to their single or separated counterparts, possibly due to increased familial support and shared resources (Burge et al., 2020).

This study revealed that married or cohabiting individuals in the general population exhibit a lower likelihood ($OR_{adj}: 0.59$, CI: 0.53-0.66) of poor mental health compared to single, widowed, or separated individuals. Interestingly, in the immigrant population, the odds are reversed, showing that married or cohabiting immigrants are more likely to report poor mental health ($OR_{adj}: 1.91$, CI: 1.15-3.17) than their single or separated counterparts, which could be a result of unique pressures faced by immigrant couples, such as economic hardships and limited social networks that can strain marital relationships (de Maio, 2020). The worsening mental health among married people might also be because of challenges navigating shifting gender roles or the pressure associated with supporting another person through this

transition (Caarls & Mazzucato, 2015; Creese, 2012; Manuh, 2003; Okeke-Ihejirika et al., 2019; Oppong & Kellett, 2021; Shirpak et al., 2011).

The Influence of Time since Immigration to Canada & Self-Reported Mental Health

Early in their residency (0-9 years), immigrants often experience the "healthy immigrant effect," where they report better mental health compared to native-born Canadians, attributed to the selective immigration process that favors healthy individuals (Statistics Canada, 2020). However, this effect tends to diminish over time as immigrants face stressors such as socioeconomic challenges, underemployment, and discrimination, which can negatively impact mental health over the long term (Vang et al., 2019; Ng & Omariba, 2021).

In this study, the odds ratio (OR) associated with reporting poor mental health among immigrants living in Canada for ten or more years is significantly higher ($OR_{adj} = 2.68$, 95% CI: 1.54–4.68) than recent immigrants who have lived in Canada for less than ten years. This aligns with previous literature, which showed that prolonged exposure to acculturative stress, challenges in maintaining social connections, and possible experiences of discrimination contribute to poorer mental health outcomes among long-term immigrants (Beiser & Hou, 2017; McKenzie et al., 2021).

Additionally, social integration difficulties, changes in family dynamics over time, exposure to racism, or greater alignment with Western conceptualizations of mental health also contribute to these elevated risks (Bhugra & Becker, 2005; Creese, 2012; DesBordes, 2021; Hilario et al., 2018; Sher & Vilens, 2010).

The Influence of Race and Self-reported Mental Health.

Race has a notable impact on self-reported mental health, with studies indicating that racial minority immigrants often experience unique challenges affecting their mental well-being (Kenny et al., 2024). White Canadians typically report lower rates of poor mental health compared to non-White individuals, partly due to systemic issues such as discrimination, barriers to healthcare, and socioeconomic inequities that disproportionately affect racialized groups (Vang et al., 2019; Ng & Omariba, 2021). Immigrants of racial minority backgrounds may face additional acculturative stress, linguistic barriers, and racial discrimination, all of which contribute to mental health disparities compared to their White counterparts (McKenzie et al., 2021).

In this study, the odds ratio (OR) for non-White immigrants in reporting poor mental health was not statistically significant. This result suggests that non-White immigrants may have resilience factors that mitigate these stressors or may have community, and family supports that buffer mental health impacts. For instance, some studies have noted that social and cultural networks within immigrant communities can provide essential support that alleviates mental health struggles, even in the face of systemic challenges (Beiser & Hou, 2017).

This result might also reflect a reporting bias or a difference in mental health expression across cultural groups, as some groups may underreport mental health issues due to cultural stigmas or language barriers (McKenzie et al., 2021). Additionally, the "healthy immigrant effect," which posits that newcomers are generally healthier upon arrival than native-born populations, could partly explain these results, though this effect often diminishes over time as

immigrants acclimate to Canadian society and experience greater exposure to social and economic inequalities (Vang et al., 2019).

Influence of Education on Perceived Mental Health.

Education is a crucial determinant of self-reported mental health (SRMH), with individuals with higher education levels generally reporting better mental health outcomes (Lu & Ng, 2019). Education often equips individuals with better economic opportunities, social networks, and coping mechanisms, which are protective factors against mental health issues (Salami et al., 2020). Those with lower educational attainment frequently face increased stressors, including unemployment, underemployment, and financial insecurity, negatively impacting SRMH (Lu & Ng, 2019). The "healthy immigrant effect" also suggests that despite better mental health upon arrival, the mental health of immigrants, particularly among those with lower education, deteriorates over time due to the cumulative stress of navigating the socio-economic and cultural challenges of settling in a new country (Statistics Canada, 2020; Salami et al., 2020).

The results of this study also align with established research emphasizing the protective effects of education on mental health (Lu & Ng, 2019; Salami et al., 2020; Rana et al., 2022). The immigrant and general Canadian populations with post-secondary education are shown to have consistently and significantly lower odds of having poor SRMH than those with lower education level (secondary school or less). These findings are similar to the findings of a Statistics Canada study on the "Perceived Mental Health of Immigrants and Refugees in Canada," which concluded that higher education correlates with lower poor mental health odds, with post-secondary education providing the most significant benefit, especially for immigrants (Lu & Ng, 2019).

This result may be due to enhanced access to employment opportunities, economic stability, and healthcare services for highly educated immigrants. In the context of Canadian immigrants, highly educated individuals are often better positioned to navigate settlement challenges, such as credential recognition and social integration, reducing their stress and enhancing mental health (Salami et al., 2020). Additionally, higher education equips immigrants with the skills needed to access resources, including mental health services, and builds resilience against stressors such as discrimination and social exclusion, which are more common in marginalized groups (Rana et al., 2022). However, it is essential to note that even among educated immigrants, other factors, such as underemployment, language barriers, and cultural stigma, can still contribute to mental health issues. The intersection of education with other social determinants, like race and employment status, further complicates the mental health outcomes of immigrants.

Influence of Income on Self-rated Mental Health.

Individuals with lower income levels generally report poorer mental health due to financial stress, limited access to health care, and increased exposure to other social determinants of poor health, such as unemployment, housing insecurity, and food insecurity (Chiu et al., 2020). Research has consistently shown a strong correlation between income levels and mental health, with those in lower-income brackets experiencing disproportionately higher rates of poor SRMH (Mental Health Commission of Canada, 2021).

This study's findings showed that like the general Canadian population, immigrants with an annual household income of less than \$20,000 have notably higher odds ($OR_{adj} = 3.16$, 95% CI: 1.48–6.74) of reporting poor mental health compared to those earning \$80,000 or more. This aligns with the "social gradient of health," which indicates that individuals with

fewer economic resources tend to have poorer health outcomes across multiple dimensions, including mental health. This study's results showing a high likelihood of poor SRMH in no- and low-income groups aligns with research that finds a similar trend across Canada's immigrant population (Rana et al., 2022). Economic insecurity contributes directly to higher levels of anxiety, depression, and overall stress, especially among those in precarious employment or without stable income (Mental Health Commission of Canada, 2021).

Influence of Food Security on Self-reported Mental Health.

Studies have shown that food insecurity is closely associated with poorer self-reported mental health (SRMH), with those facing moderate to severe food insecurity reporting higher instances of depression, anxiety, and other mental health concerns compared to those with food security (Tarasuk et al., 2020). Food insecurity, as a stressor, often leads to chronic mental health challenges, as it is intertwined with financial strain, limited access to healthcare, and social isolation. Immigrant populations in Canada face additional barriers to food security, including employment instability, discrimination, and cultural barriers, which place them at a higher risk for adverse mental health outcomes (Salami et al., 2020; Public Health Agency of Canada, 2021).

This study shows a significant impact of food insecurity on SRMH, with moderately food-insecure individuals in the general population at increased odds of reporting poor mental health ($OR_{adj} = 1.90$, 95% CI: 1.67–2.17), and severely food-insecure individuals having an even higher adjusted odds of poor mental health ($OR_{adj} = 4.66$ 95% CI: 4.03–5.38). However, among immigrants, while moderate food insecurity is not significantly associated with an SRMH, severe food insecurity is strongly associated with poor SRMH ($OR_{adj} = 3.86$, 95% CI: 1.89–7.88). These results are consistent with research suggesting that immigrants, who are

already vulnerable to financial instability and social stressors, experience compounding effects of food insecurity that directly impact mental health (Tarasuk et al., 2020). For racialized immigrant groups, the link between food insecurity and poor SRMH can be attributed to both structural and socioeconomic factors, where limited access to culturally appropriate mental health resources further exacerbates food-related stress (Rana et al., 2022).

Influence of Dwelling Ownership and Self-rated Mental Health.

Housing stability is considered a significant determinant of mental health outcomes, with dwelling ownership often linked to improved mental well-being due to reduced housing instability and financial stress (Vang et al., 2021). Homeownership can provide a sense of security and belonging, which contributes positively to mental health, whereas renting, which may be associated with lower socioeconomic status and more transient living situations, has been correlated with higher levels of stress and poorer self-reported mental health outcomes (Salami et al., 2020). For immigrants, dwelling ownership can play a similar or even greater role in shaping mental health due to the challenges they face when entering the housing market, including discrimination and limited financial resources (Hiebert & Mendez, 2020). Housing stability is especially important for immigrants adjusting to a new country, as it aids in building social networks and provides a sense of belonging. However, barriers such as lower income, credit history, and systemic discrimination can make homeownership difficult, placing many immigrants at a higher risk of renting, which may increase their vulnerability to stress and mental health issues (Murdie & Logan, 2019).

However, in this study, individuals in the general population and immigrant population who rented their home had no significant association with poor self-rated mental health. This

difference could reflect immigrants' resilience or reliance on community support despite housing challenges, though limited economic resources still present barriers to mental health for many renters (Garcia et al., 2021). This result may also suggest that factors beyond ownership, such as social support and length of time in Canada, may play a more substantial role in immigrant mental health outcomes. These findings align with the idea that while housing stability is universally important, the mental health impact of renting versus owning may be moderated by immigrants' unique social and economic contexts.

Influence of the Household Size and Self-reported Mental Health.

Household size has been identified as an important factor affecting mental health, as larger households can often provide greater social support, which positively impacts mental well-being (Statistics Canada, 2020). Living alone, on the other hand, is linked to higher levels of stress, loneliness, and a greater likelihood of experiencing poor mental health, as it may limit opportunities for social interaction and emotional support (Public Health Agency of Canada, 2021). For immigrants, household size may further impact mental health as larger family units may offer protective benefits against the stress of adapting to a new culture, while smaller or single-person households may face unique challenges due to limited support networks (Simich et al., 2019).

This study found that Canadians living alone had lower odds ($OR_{adj} = 0.80$, 95% CI: 0.65–0.98, $p < 0.05$) of reporting poor mental health compared to those in households of two or more. Among immigrants, there was no statistically significant association of single-person households with self-reported poor mental health, suggesting that other social and contextual factors, such as length of stay in Canada or community support, might play a larger role for this

group in shaping mental health outcomes. These findings may indicate that for immigrants, household composition may not directly correlate with mental health as strongly, potentially due to other adaptive strategies or differences in social networks and access to resources.

Influence of Social Support on Self-reported Mental Health.

Social support is a crucial determinant of self-reported mental health (SRMH), particularly for immigrant populations. High levels of social support are consistently associated with better mental health outcomes by providing individuals with a sense of community, resources for coping, and emotional support during stressful life events (Salami et al., 2020; Vang et al., 2021). Immigrants often encounter unique challenges that can affect their mental health, including cultural adaptation stress, separation from family networks, and sometimes reduced social support due to migration (Vang et al., 2021). Limited social connections may exacerbate mental health issues, highlighting the role of social integration and community programs for this population.

In this study, immigrants who reported having social provisions exhibited significantly lower odds of poor SRMH ($OR_{adj} = 0.50$, CI: 0.31 0.79) compared to their counterparts in the general population with social support, who had slightly increased odds of reporting poor mental health ($OR_{adj} = 1.15$, CI: 1.06 1.26). This might suggest that social support exerts a protective effect on immigrant mental health more profoundly than on the general population, potentially due to the additional stressors that immigrants face or the fact that many immigrants come from collectivistic societies. The disparity in odds ratios may also reflect how integration into supportive communities can help mitigate the mental health risks associated with factors like language barriers, financial strain, and lack of extended family (Garcia et al., 2021; Rana

et al., 2022). These findings also align with literature emphasizing the importance of culturally tailored support systems, which can help immigrants establish connections and reduce social isolation, thus enhancing mental health outcomes (Mental Health Commission of Canada, 2021).

How does the intersection of significant associations contribute to immigrant's perceived mental health?

The intersection of sociodemographic factors—such as age, sex, sexual orientation, income, education, dwelling ownership, household size, social provisions, racial background, food security, and marital status—profoundly impacts immigrants' perceived mental health. Each characteristic contributes uniquely, with certain combinations exacerbating vulnerability to mental health challenges. For instance, low-income immigrants often experience higher mental health risks due to financial insecurity, which can limit access to quality healthcare, secure housing, and stable food sources. Food insecurity, in turn, is closely linked to increased stress and anxiety, negatively impacting mental health (Vang et al., 2021; Salami et al., 2020).

Age and racial background intersect as well, with older racialized immigrants potentially facing compounded barriers in accessing mental health resources due to both age-related health declines and potential discrimination, which can lead to higher stress and feelings of isolation. Similarly, social support plays a crucial role in mitigating these stressors. Regardless of other sociodemographic factors, immigrants with a strong support network often report better mental health outcomes, as social connections provide emotional and practical support for navigating the challenges of integration (Garcia et al., 2021; Rana et al., 2022).

Educational attainment and household size further illustrate how these factors intersect. Immigrants with post-secondary education reported better mental health, likely due to enhanced economic opportunities and social mobility. At the same time, larger households may provide social and emotional support, even though they may also heighten financial strain. These interactions underscore the importance of policies and community support systems tailored to address the diverse and intersecting needs.

Knowledge Translation Strategy

The results of this study will be primarily disseminated to other researchers and health practitioners, such as counsellors and psychiatrists. This will be done by presenting findings from this study at immigrant settlement agencies and mental health conferences. The results of this study will be shared with frontline people. Infographics will be created summarizing this study's findings and will be published in an open access manner. Local immigrant organizations will be contacted, and the study findings will be shared via blogs, podcasts or magazines to explain the research findings and how they will benefit communities.

Study Limitations and Alternate Approaches

This is a cross-sectional study, so caution should be exerted when interpreting the results of this study. This study cannot determine the potential direction of any effects between perceived mental health and social, demographic, and health access variables. The use of a depression scale and distress scale are essential measures to understand the status of the mental health of these survey participants. However, these scales, while available in the CCHS, were only administered as optional content for selected provinces. As a result, we were limited in terms of accessing distress and depression data that represented these Canadian data as a whole. The sample size of immigrant groups is relatively small, which may decrease the statistical

power during calculation of estimates in the immigrant population. There is also a possibility of response bias among immigrant respondents, particularly those from cultures where discussing mental health openly is stigmatized. This bias might lead to underreporting of mental health issues, potentially skewing these findings.

Recommendations for Future Research

Future research could examine the interaction between multiple intersecting identities, such as ethnicity, gender, age, and income, to understand their combined impact on mental health among diverse immigrant groups. Alternatively, future research could focus on underrepresented groups within the immigrant population, such as refugees, LGBTQ+ individuals, etc. to capture unique mental health challenges. Additional insights into the complex intersectional impact of socio-demographic qualities on the mental health of the highly heterogeneous immigrant population could also be gained by collecting larger random samples of Canadian immigrants or large longitudinal samples in the future. While it can certainly be argued that the CCHS already collects a large sample of respondents, even greater sampling of the immigrant population could aid in the calculation of more precise statistical estimates, or

Conclusion

Perceived mental health is a general indication of the burden of mental or emotional problems or distress (Statistics Canada, 2016). The results of this study contribute to greater understanding surrounding how social and demographic variables can intersect with mental health. This study's results may inform policymakers in the creation of future immigration, social, and health policy to address deficiencies in economic support, assistance, and health access among Canadian immigrants to mitigate adverse mental health outcomes. Health professionals may also be better informed about the need for mental health outreach programs

for immigrants, which can be responsive to the unique mental health needs of the immigrants compared to non-immigrant populations in Canada.

REFERENCES

- Abu-Laban, Y., & Nath, N. (2020). Citizenship, multiculturalism, and immigration: Mapping the complexities of inclusion and exclusion through intersectionality. *The Palgrave handbook of gender, sexuality, and Canadian politics*, 507-527.
- Agic, B. (2015). *Mental health of Canada's immigrants*, Centre for Addiction and Mental Health. https://olip-plio.ca/wp-content/uploads/2015/08/Immigrant-Mental-Health_June22_Branka-Agic1.pdf
- Ahmed, S., Shommu, N., Rumana, N., Barron, G., Wicklum, S., & Turin, T. (2016). Barriers to Access of Primary Healthcare by Immigrant Populations in Canada: A Literature Review. *Journal of Immigrant & Minority Health*, 18(6), 1522-1540. <https://doi.org/10.1007/s10903-015-0276-z>
- Alegría, M., Yip, T., Marks, A., Juang, L., Cohen, L., & Cuervo-Torello, F. (2021). improving Mental Health for immigrant populations. In (Vol. 12, pp. 785137): Frontiers Media SA.
- Ali, J. (2002). *Mental Health of Canada's Immigrants* (Catalogue 82-003). (Health Reports, Issue. <https://www150.statcan.gc.ca/n1/en/pub/82-003-s/2002001/pdf/82-003-s2002006-eng.pdf?st=cNwJSTWH>
- Alvi, S., Zaidi, A., Ammar, N., & Culbert, L. (2012). A Comparative and Exploratory Analysis of Socio-cultural Factors and Immigrant Women's Mental Health within a Canadian Context [Article]. *Journal of Immigrant & Minority Health*, 14(3), 420-432. <https://doi.org/10.1007/s10903-011-9567-1>
- Anderson, F. M., Hatch, S. L., Comacchio, C., & Howard, L. M. (2017). Prevalence and risk of mental disorders in the perinatal period among migrant women: a systematic review and meta-analysis. *Archives of women's mental health*, 20, 449-462.
- Beiser, M. (2015). The health of immigrants and refugees. *Immigrant Experiences in North America: Understanding Settlement and Integration*, 312.
- Berrios-Riquelme PhD, J., Maluenda-Albornoz PhD, J., & Castillo-Rozas PhD, G. (2022). Perceived discrimination and mental health of South American immigrants in Chile: the mediator role of the self-esteem in four nationalities [Article]. *Social Work in Mental Health*, 20(3), 282-298. <https://doi.org/10.1080/15332985.2021.2007438>
- Bhugra, D., & Becker, M. A. (2005a). Migration, cultural bereavement and cultural identity. *World psychiatry*, 4(1), 18.

- Browne, D. T., Kumar, A., Puente-Duran, S., Georgiades, K., Leckie, G., & Jenkins, J. (2017). Emotional problems among recent immigrants and parenting status: Findings from a national longitudinal study of immigrants in Canada. *PloS one*, 12(4), e0175023.
- Bulloch, A. G., Williams, J. V., Lavorato, D. H., & Patten, S. B. (2017). The depression and marital status relationship is modified by both age and gender. *Journal of affective disorders*, 223, 65-68.
- Caarls, K., & Mazzucato, V. (2015). Does International Migration Lead to Divorce? Ghanaian Couples in Ghana and Abroad. *Population*, 70(1), 127-151.
- Cairney, J., Veldhuizen, S., Vigod, S., Streiner, D. L., Wade, T. J., & Kurdyak, P. (2014). Exploring the social determinants of mental health service use using intersectionality theory and CART analysis. *J Epidemiol Community Health*, 68(2), 145-150.
- Capaldi, C. A., Li, L., & Dopko, R. L. (2021). Positive mental health and perceived change in mental health among adults in Canada during the second wave of the COVID-19 pandemic. *Promotion de la Santé et Prévention des Maladies Chroniques au Canada*, 41(11), 359-377. <https://doi.org/10.24095/hpcdp.41.11.05>
- Cénat, J. M., Hajizadeh, S., Dalexis, R. D., Ndengeyingoma, A., Guerrier, M., & Kogan, C. (2022). Prevalence and effects of daily and major experiences of racial discrimination and microaggressions among Black individuals in Canada. *Journal of interpersonal violence*, 37(17-18), NP16750-NP16778.
- Chadwick, K. A., & Collins, P. A. (2015). Examining the relationship between social support availability, urban center size, and self-perceived mental health of recent immigrants to Canada: A mixed-methods analysis. *Social Science & Medicine*, 128, 220-230. <https://doi.org/10.1016/j.socscimed.2015.01.036>
- Chai, L. (2023). Unpacking the Association Between Length of Residence and Health Among Immigrants in Canada: A Moderated Mediation Approach [Article]. *Journal of Immigrant & Minority Health*, 25(1), 38-49. <https://doi.org/10.1007/s10903-022-01377-x>
- Chai, L. (2024). Perceived community belonging as a moderator of the association between sexual orientation and health and well-being. *American Journal of Health Promotion*, 38(3), 325-338.
- Chernomas, W. M., & Clarke, D. E. (2001). *Social support and women living with serious mental illness*. Prairie Women's Health Centre of Excellence.
- Cole, E. R. (2009). Intersectionality and research in psychology. *The American psychologist*, 64(3), 170-180. <https://doi.org/10.1037/a0014564>

- Crenshaw, K. (1991). Mapping the Margins: Intersectionality, Identity Politics, and Violence against Women of Color. *Stanford Law Review*, 43(6), 1241-1299.
<https://doi.org/10.2307/1229039>
- Crenshaw, K. (2013). Demarginalizing the intersection of race and sex: A black feminist critique of antidiscrimination doctrine, feminist theory and antiracist politics. In *Feminist legal theories* (pp. 23-51). Routledge.
- Crossman, E., Hou, F., & Picot, G. (2021). Are the gaps in labour market outcomes between immigrants and their Canadian-born counterparts starting to close? In: Statistics Canada Ottawa, Canada.
- Davison, K. M., & Gondara, L. (2021). A comparison of mental health, food insecurity, and diet quality indicators between foreign-born immigrants of Canada and native-born Canadians. *Journal of hunger & environmental nutrition*, 16(1), 109-132.
- Dennis, C.-L., Brown, H. K., Wanigaratne, S., Fung, K., Vigod, S. N., Grigoriadis, S., Marini, F., & Brennenstuhl, S. (2018). Prevalence, incidence, and persistence of postpartum depression, anxiety, and comorbidity among Chinese immigrant and nonimmigrant women: a longitudinal cohort study. *The Canadian Journal of Psychiatry*, 63(1), 44-53.
- Dunn, J. R., & Dyck, I. (2000). Social determinants of health in Canada's immigrant population: results from the National. *Social Science & Medicine*, 51(11), 1573.
[https://doi.org/10.1016/S0277-9536\(00\)00053-8](https://doi.org/10.1016/S0277-9536(00)00053-8)
- Evra, R., & Mongrain, E. (2020). *Mental Health Status of Canadian Immigrants During the COVID-19 Pandemic*. Statistics Canada. <https://www150.statcan.gc.ca/n1/pub/45-28-0001/2020001/article/00050-eng.htm>
- Fenta, H., Hyman, I., & Noh, S. (2004). Determinants of depression among Ethiopian immigrants and refugees in Toronto. *The Journal of nervous and mental disease*, 192(5), 363-372.
- Fung, K., & Guzder, J. (2021). Canadian immigrant mental health. *Mental Health, Mental Illness and Migration*, 187-207.
- Gadermann, A. C., Thomson, K. C., Richardson, C. G., Gagné, M., McAuliffe, C., Hirani, S., & Jenkins, E. (2021). Examining the impacts of the COVID-19 pandemic on family mental health in Canada: findings from a national cross-sectional study. *BMJ open*, 11(1), e042871.
- Gadermann, A. M., Gagne Petteni, M., Janus, M., Payut H, J., Guhn, M., & Georgiades, K. (2022). Prevalence of Mental Health Disorders Among Immigrant, Refugee, and Nonimmigrant Children and Youth in British Columbia, Canada. *JAMA network open*, 5(2)(e2144934). <https://doi.org/https://doi.org/10.1001/jamanetworkopen.2021.44934>

- Galarneau, D., Morissette, R., & Usalcas, J. (2013). *What has changed for young people in Canada?* Statistics Canada= Statistique Canada.
- Ganann, R., Sword, W., Thabane, L., Newbold, B., & Black, M. (2016). Predictors of postpartum depression among immigrant women in the year after childbirth. *Journal of women's health, 25*(2), 155-165.
- George, Mary S. Thomson, Ferzana Chaze, & Guruge, S. (2015). Immigrant Mental Health, A Public Health Issue: Looking Back and Moving Forward. *International Journal of Environmental Research and Public Health(IJERPH)*.
<https://doi.org/10.3390/ijerph121013624>
- Guruge, S., Roche, B., & Catallo, C. (2012). Violence against women: an exploration of the physical and mental health trends among immigrant and refugee women in Canada. *Nursing research and practice, 2012*(1), 434592.
- Guruge, S., Thomson, M. S., George, U., & Chaze, F. (2015). Social support, social conflict, and immigrant women's mental health in a Canadian context: a scoping review. *Journal of psychiatric and mental health nursing, 22*(9), 655-667.
- Haan, M., Yu, Z., & Draghici, E. (2023). Household Formation in Canada and the United States: Insights Into Differences by Race, Ethnicity, Immigrant Populations, and Country. *Housing Policy Debate, 33*(3), 619-640.
- Hajo, S., Capaldi, C. A., & Liu, L. (2024). Disparities in positive mental health of sexual and gender minority adults in Canada. *Health Promotion and Chronic Disease Prevention in Canada: Research, Policy and Practice, 44*(5).
<https://doi.org/10.24095/hpcdp.44.5.01>
- Hilario, C. T., Oliffe, J. L., Wong, J. P., Browne, A. J., & Johnson, J. L. (2018). “Just as Canadian as anyone Else”? Experiences of second-class citizenship and the mental health of young immigrant and refugee men in Canada. *American journal of men's health, 12*(2), 210-220.
- Hynie, M., Oda, A., Calaresu, M., Kuo, B. C., Ives, N., Jaimes, A., Bokore, N., Beukeboom, C., Ahmad, F., & Arya, N. (2023). Access to virtual mental healthcare and support for refugee and immigrant groups: A scoping review. *Journal of immigrant and minority health, 25*(5), 1171-1195.
- Immigration, Refugees and Citizenship Canada(2017). Notice – Supplementary Information 2018-2020 Immigration Levels Plan. Retrieved July 21 from <https://www.canada.ca/en/immigration-refugees-citizenship/news/notices/supplementary-immigration-levels-2018.html>
- Islam, F., Khanlou, N., & Tamim, H. (2014). South Asian populations in Canada: migration and mental health. *BMC Psychiatry, 14*(1), 301-323. <https://doi.org/10.1186/1471-244X-14->

- Jace, C. E., & Makridis, C. A. (2021). Does marriage protect mental health? Evidence from the COVID-19 pandemic. *Social Science Quarterly*, 102(6), 2499-2515.
- Kalich, A., Heinemann, L., & Ghahari, S. (2016). A Scoping Review of Immigrant Experience of Health Care Access Barriers in Canada. *Journal of Immigrant & Minority Health*, 18(3), 697-709. <https://doi.org/10.1007/s10903-015-0237-6>
- Kanas, A., & Steinmetz, S. (2021). Economic outcomes of immigrants with different migration motives: The role of labour market policies. *European Sociological Review*, 37(3), 449-464.
- Kang, W.-M., Lim, J., & Park, H.-J. (2022). Reflecting on a second-migration experience: Issues and implications for social work practice. *International Social Work*, 65(5), 842-855. <https://doi.org/10.1177/0020872820962180>
- Kaushik, V., & Walsh, C. A. (2018). A Critical Analysis of the Use of Intersectionality Theory to Understand the Settlement and Integration Needs of Skilled Immigrants to Canada. *Canadian Ethnic Studies*, 50(3), 27-47. <https://doi.org/10.1353/ces.2018.0021>
- Kirmayer, L. J., Narasiah, L., Munoz, M., Rashid, M., Ryder, A. G., Guzder, J., Hassan, G., Rousseau, C., & Pottie, K. (2011). Common mental health problems in immigrants and refugees: general approach in primary care. *Canadian Medical Association Journal* (CMAJ), 183(12), E959-E967. <https://doi.org/10.1503/cmaj.090292>
- Kenny, K. S., Wanigaratne, S., Merry, L., Siddiqi, A., & Urquia, M. L. (2024). Discrimination and Racial Inequities in Self-reported Mental Health Among Immigrants and Canadian-Born Individuals in a Large, Nationally Representative Canadian Survey. *Journal of Racial and Ethnic Health Disparities*, 1-13.
- Kwak, K. (2016). An evaluation of the healthy immigrant effect with adolescents in Canada: Examinations of gender and length of residence. *Social science & Medicine* (1982), 157, 87-95. <https://doi.org/10.1016/j.socscimed.2016.03.017>
- Logan, J., & Murdie, R. (2016). Home in Canada? The Settlement Experiences of Tibetans in Parkdale, Toronto. *Journal of International Migration and Integration*, 17, 95-113.
- Lou, Y., & Beaujot, R. (2005). What happens to the 'healthy immigrant effect': the mental health of immigrants to Canada. *PSC Discussion Papers Series*, 19(15), 1.
- Lu, C., & Ng, E. (2019). Healthy immigrant effect by immigrant category in Canada. *Health Rep*, 30(4), 3-11. <https://doi.org/https://www.doi.org/10.25318/82-003-x201900400001-eng>

- Makwarimba, E., Stewart, M. J., Beiser, M., Neufeld, A., Simich, L., & Spitzer, D. (2010). Social support and health: immigrants' and refugees' perspectives. *Diversity and Equality in Health and Care*, 7(2).
- Manuh, T. (2003). 'Efie Or The Meanings Of 'Home' Among Female And Male Ghanaian Migrants In Toronto, Canada And Returned Migrants To Ghana. *In New African Diasporas* (pp. 140-159). Routledge.
- Maynard, M., Dean, J., Rodriguez, P. I., Sriranganathan, G., Qutub, M., & Kirkpatrick, S. I. (2019). The experience of food insecurity among immigrants: a scoping review. *Journal of International Migration and Integration*, 20, 375-417.
- McBride, D. E., & Mazur, A. G. (2008). 10 Women's movements, feminism, and feminist movements. *Politics, Gender, and Concepts*, 233. [https://doi.org/DOI: 10.1017/CBO9780511755910.010](https://doi.org/DOI:10.1017/CBO9780511755910.010)
- Melchior, M., Chastang, J.-F., Falissard, B., Galera, C., Tremblay, R. E., Côté, S. M., & Boivin, M. (2012). Food insecurity and children's mental health: a prospective birth cohort study. *PloS one*, 7(12), e52615.
- Montazer, S. (2022). Immigration, Homeownership, and Mental Health. *Socius*, 8, 23780231221139361.
- Montgomery, P., Nangia, P., Mossey, S., & Rancourt, S. (2018). Self-perceived Mental Health of Older Adults in Canada. *Diversity of Research in Health Journal*, 2, 30-49.
- Morrison, M. A. (2012). Psychological health correlates of perceived discrimination among Canadian gay men and lesbian women. *Canadian Journal of Community Mental Health*, 30(2), 81-98.
- Morrow, M., Bryson, S., Lal, R., Hoong, P., Jiang, C., Jordan, S., Patel, N. B., & Guruge, S. (2020). Intersectionality as an analytic framework for understanding the experiences of mental health stigma among racialized men. *International Journal of Mental Health and Addiction*, 18, 1304-1317.
- Morton, B. (2005). The Health of Immigrants and Refugees in Canada. *Canadian Journal of Public Health*, 96, S30-S44 <https://doi.org/10.1007/BF03403701>
- Muldoon, K. A., Duff, P. K., Fielden, S., & Anema, A. (2013). Food insufficiency is associated with psychiatric morbidity in a nationally representative study of mental illness among food insecure Canadians. *Social Psychiatry and Psychiatric Epidemiology*, 48, 795-803.
- Ng, E., & Zhang, H. (2020). The mental health of immigrants and refugees: Canadian evidence from a nationally linked database. *Health Rep*, 3-12. <https://doi.org/https://www.doi.org/10.25318/82-003-x202000800001-eng>

- Oh, S., Arañez Litam, S. D., & Chang, C. Y. (2022). COVID-19 racial discrimination and mental health of Korean Americans: Role of ethnic identity and coping strategy. *Stigma and Health*, 7(4), 461.
- Okeke-Ihejirika, P., Salami, B., & Karimi, A. (2019). African immigrant women's transition and integration into Canadian society: Expectations, stressors, and tensions. *Gender, Place & Culture*, 26(4), 581-601.
- Olawo, O., Pilkington, B., & Khanlou, N. (2021). Identity-Related Factors Affecting the Mental Health of African Immigrant Youth Living in Canada. *International Journal of Mental Health and Addiction*, 19(3), 701-713. <https://doi.org/10.1007/s11469-019-00177-z>
- Oppong, E., & Kellett, P. (2006). Leaving that Thing Behind : Shifting Gender Dynamics among Recent Ghanain Immigrants to Canada, and their Implications for Health. *Gender and Population Studies (GAPS) in Health*. <https://doi.org/http://www.gapsinhealth.ca/wp-content/uploads/2021/03/Oppong-and-Kellett-2021-Leaving-that-thing-Behind.pdf>
- Ornelas, I. J., & Perreira, K. M. (2011). The role of migration in the development of depressive symptoms among Latino immigrant parents in the USA . *Social Science & Medicine*, 73(8), 1169-1177. <https://doi.org/10.1016/j.socscimed.2011.07.002>
- Pandey, M., Kamrul, R., Michaels, C. R., & McCarron, M. (2022). Identifying Barriers to Healthcare Access for New Immigrants: A Qualitative Study in Regina, Saskatchewan, Canada. *Journal of Immigrant & Minority Health*, 24(1), 188-198. <https://doi.org/10.1007/s10903-021-01262-z>
- Pakula, B., & Shoveller, J. A. (2013). Sexual orientation and self-reported mood disorder diagnosis among Canadian adults. *BMC Public Health*, 13, 1-7.
- Patel, S. G., Bouche, V., Thomas, I., & Martinez, W. (2023). Mental health and adaptation among newcomer immigrant youth in United States educational settings. *Current Opinion in Psychology*, 49, 101459.
- Picot, G., & Hou, F. (2020). *A Canada-US Comparison of the Economic Outcomes of STEM Immigrants. Analytical Studies Branch Research Paper Series*. ERIC.
- Picot, W., & Hou, F. (2014). Immigration, low income and income inequality in Canada: what's new in the 2000s? In: Citeseer.
- Public Health Agency of Canada. (2014, May 6). Mental health promotion: Promoting mental health means promoting ourselves. [tps://www.canada.ca/en/public-health/services/health-promotion/mental-health/mental-health-promotion.html](https://www.canada.ca/en/public-health/services/health-promotion/mental-health/mental-health-promotion.html)

- Public Health Agency of Canada. (2020, September 8). *Social Determinants and Inequities in Health for Black Canadians*. Retrieved from <https://www.canada.ca/en/public-health/services/health-promotion/population-health/what-determines-health/social-determinants-inequities-black-canadians-snapshot.html>
- Pui-Hing Wong, J., Tai-Wai Li, A., Kwong-Lai Poon, M., & Po-Lun Fung, K. (2013). An exploratory study on the mental health of immigrants, refugees and non-status people living with HIV in Toronto. *International Journal of Migration, Health and Social Care*, 9(3), 122-134.
- Pumariiega, A. J., Rothe, E., & Pumariiega, J. B. (2005). Mental health of immigrants and refugees [Journal Article]. *Community Mental Health Journal*, 41(5), 581-597. <https://doi.org/10.1007/s10597-005-6363-1>
- Puyat, J. H. (2013). Is the influence of social support on mental health the same for immigrants and non-immigrants? *Journal of immigrant and minority health*, 15, 598-605.
- Robert, A.-M. (2012). *Mental health and well-being of recent immigrants in Canada: Evidence from the Longitudinal Survey of Immigrants to Canada*. <https://www.canada.ca/content/dam/ircc/migration/ircc/english/pdf/research-stats/mental-health.pdf>
- Ravichandiran, N., Mathews, M., & Ryan, B. L. (2022). Utilization of healthcare by immigrants in Canada: a cross-sectional analysis of the Canadian Community Health Survey. *BMC Primary Care*, 23(1), 1-11. <https://doi.org/10.1186/s12875-022-01682-2>
- Salam, Z., Carranza, M., Newbold, B., Wahoush, O., & Joseph, A. (2024). Racialized Immigrants' Encounters of Barriers and Facilitators in Seeking Mental Healthcare Services in Ontario, Canada. *Community Mental Health Journal*, 1-12.
- Salami, B., Hegadoren, K., Bautista, L., Ben-Shlmomo, Y., Diaz, E., Rammohan, A., & Meherali, S. (2017). Mental Health of Immigrants and Non-Immigrants in Canada: Evidence from the Canadian Health Measures Survey and Service Provider Interviews in Alberta. <https://policywise.com/wp-content/uploads/resources/2017/04/2017-04APR-27-Executive-Summary-15SM-SalamiHegadoren.pdf>
- Savaş, Ö., Greenwood, R. M., Blankenship, B. T., Stewart, A. J., & Deaux, K. (2021). All immigrants are not alike: Intersectionality matters in views of immigrant groups. *Journal of Social and Political Psychology*, 9(1), 86-104.
- Sher, L., & Vilens, A. (2010). *Immigration and mental health: stress, psychiatric disorders, and suicidal behavior among immigrants and refugees*. Nova Science.
- Shirpak, K. R., Maticka-Tyndale, E., & Chinichian, M. (2011). Post Migration Changes in Iranian Immigrants' Couple Relationships in Canada. *Journal of Comparative Family Studies*, 42(6), 751-770. <https://doi.org/10.3138/jcfs.42.6.751>

- Smith, P. (2022). Black immigrants in the United States: Transraciolinguistic justice for imagined futures in a global metaverse. *Annual Review of Applied Linguistics*, 42, 109-118.
- Soltan, H., Giguere, B., & Safdar, S. (2023). Acculturation gaps among Afghan refugee families in Canada: Implications for family relationships, adaptation outcomes, and subjective wellbeing of emerging adults. *International Journal of Intercultural Relations*, 97, 101877.
- Statistics Canada. (2018, July 18). *Canadian community health survey (CCHS) - 2017*. https://www23.statcan.gc.ca/imdb/p3Instr.pl?Function=getInstrumentList&Item_Id=507367&UL=1V
- Statistics Canada. (2019, October 22). *Canadian community health survey: Combined data, 2017 and 2018*. <https://www150.statcan.gc.ca/n1/daily-quotidien/191022/dq191022d-eng.htm>
- Statistics Canada. (2020 June 4). *Perceived Mental Health*. https://publications.gc.ca/collections/collection_2020/statcan/45-28/CS45-28-1-2020-3-eng.pdf
- Statistics Canada. (2022). *Immigrants make up the largest share of the population in over 150 years and continue to shape who we are as Canadians*. (022-10-26), Article 11-001-X. <https://www150.statcan.gc.ca/n1/daily-quotidien/221026/dq221026a-eng.htm>
- Statistics Canada. (June 19, 2020). Canadian Community Health Survey: Public Use Microdata File, 2017/2018. <https://www150.statcan.gc.ca/n1/en/catalogue/82M0013X>
- Statistics Canada. (June 19, 2020). *Canadian Community Health Survey: Public Use Microdata File, 2017/2018*. <https://www150.statcan.gc.ca/n1/en/catalogue/82M0013X>
- Szklo, M., & Nieto, J. (2018). *Epidemiology: Beyond the Basics*. <https://shmu.ac.ir/file/download/page/1610441140-1564213580-epidemiology-beyod.pdf>
- Szklo, M., & Nieto, J. (2018). *Epidemiology: Beyond the Basics* (4th Edition ed.). Jones & Bartlett Learning.
- Tran, A. N., Ornelas, I. J., Kim, M., Perez, G., Green, M., Lyn, M. J., & Corbie-Smith, G. (2014). Results From a Pilot Promotora Program to Reduce Depression and Stress Among Immigrant Latinas [Article]. *Health Promotion Practice*, 15(3), 365-372. <https://doi.org/10.1177/1524839913511635>
- Tsai, P.-L., & Ghahari, S. (2023). Immigrants' Experience of Health Care Access in Canada: A Recent Scoping Review. *Journal of Immigrant & Minority Health*, 25(3), 712-727. <https://doi.org/10.1007/s10903-023-01461-w>

- Tsai, P. L., & Ghahari, S. (2023). Immigrants' Experience of Health Care Access in Canada: A Recent Scoping Review. *Journal of Immigrant & Minority Health*, 25(3), 712-727. <https://doi.org/10.1007/s10903-023-01461-w>
- Tarasuk, V., Fafard St-Germain, A.-A., & Mitchell, A. (2019). Geographic and socio-demographic predictors of household food insecurity in Canada, 2011–12. *BMC Public Health*, 19, 1-12.
- Tarasuk, V., Li, T., & Fafard St-Germain, A.-A. (2016). Household food insecurity in Canada, 2021.
- Tesfai, R. (2016). The interaction between race and nativity on the housing market: Homeownership and house value of black immigrants in the United States. *International Migration Review*, 50(4), 1005-1045.
- Usha George, M. S. T., Ferzana Chaze, Sepali Guruge. (2015). Immigrant Mental Health, A Public Health Issue: Looking Back and Moving Forward. *International Journal of Environmental Research and Public Health(IJERPH)*.<https://doi.org/10.3390/ijerph121013624>
- Vaillancourt, M., Lane, V., Ditto, B., & Costa, D. D. (2022). Parity and Psychological Risk Factors Increase the Risk of Depression During Pregnancy Among Immigrant Women in Canada. *J Immigrant Minority Health* 24, 570-579. <https://doi.org/10.1007/s10903-021-01284-7>
- van Mens-Verhulst, J., & Radtke, L. (2008). Intersectionality and mental health: A case study. *Health Care*, 1, 1-19.
- Vang, Z. M., Sigouin, J., Flenon, A., & Gagnon, A. (2017). Are immigrants healthier than native-born Canadians? A systematic review of the healthy immigrant effect in Canada. *Ethnicity & Health*, 22(3), 209-241. <https://doi.org/10.1080/13557858.2016.1246518>
- Varin, M., Palladino, E., Lary, T., & Baker, M. (2020). An update on positive mental health among adults in Canada [Article]. *Promotion de la Santé et Prévention des Maladies Chroniques au Canada*, 40(3), 86-91. <https://doi.org/10.24095/hpcdp.40.3.04>
- Viruell-Fuentes, E. A., Miranda, P. Y., & Abdulrahim, S. (2012). More than culture: Structural racism, intersectionality theory, and immigrant health [Article]. *Social Science & Medicine*, 75(12), 2099-2106. <https://doi.org/10.1016/j.socscimed.2011.12.037>
- Vittinghoff, E., Glidden, D., Shiboski, S., & McCulloch, C. (2014). *Regression methods in biostatistics: Linear, logistic, survival, and repeated measures models* (2nd ed, softcover version ed.). Springer.

- Watson, B., & Osberg, L. (2018). Job insecurity and mental health in Canada. *Applied Economics*, 50(38), 4137-4152.
- Williams, M. T., Khanna Roy, A., MacIntyre, M.-P., & Faber, S. (2022). The traumatizing impact of racism in Canadians of colour. *Current Trauma Reports*, 8(2), 17-34.
- World Health Organization. (2022). *WHO guidelines on mental health at work*. World Health Organization.
- World Health Organization. (2023). *Mental Health*. https://www.who.int/health-topics/mental-health#tab=tab_1
- Wu, Z., Hou, F., & Schimmele, C. M. (2011). Racial diversity and sense of belonging in urban neighborhoods. *City & Community*, 10(4), 373-392.
- Xiao, H., Li, X., Zhou, Z., Liu, H., Hu, C., Liu, T., Chen, D., & You, L. (2022). Negative coping style mediates the relationship between negative mental and suicide risk among migrant workers in China. *Scientific Reports*, 12(1), 305.
- Yeretzian, S. T., Sahakyan, Y., Kozloff, N., & Abrahamyan, L. (2023). Sex differences in the prevalence and factors associated with anxiety disorders in Canada: A population-based study [Article]. *Journal of Psychiatric Research*, 164, 125-132. <https://doi.org/10.1016/j.jpsychires.2023.06.018>