Canada's Aging Population:

Does Immigrant Status Matter?

by

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Abstract

Immigrants, like everyone else, age. Given that well over 13 million immigrants have arrived in Canada since 1901 (Statistics Canada, 2001), it is surprising that researchers have largely failed to examine their mental health in later life. This thesis utilizes data from the Canadian Community Health Survey—Healthy Aging (2010) to compare the mental health of immigrants to that of Canadian-born among the population over the age of 60. Anthony Giddens' (1984) structuration theory provides a theoretical framework which facilitates examination of the complex relationship among various structural and behavioural independent variables. Findings show that connecting immigrant women with health care providers, encouraging healthy behaviours among immigrant men, ensuring nutritional needs are met in Canada, and boosting opportunities for social support are all ways that we can increase life satisfaction and decrease mood and anxiety conditions in our society.

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Instead of “old,”

Let us consider

“Older,”

Or maybe, “oldish,”

Or something, anything,

That isn’t always dressed

In sensible shoes

And fading underwear.

-Judith Viorst, “At Seventy” (2005, p. 13)

Chapter One: Introduction

We live in a society where people are living longer, and are living vibrant, productive lives well into their later years. It is difficult to define who can be described as “aging” or “older” in a world where, at the age of 75, Dustin Hoffman is described as an “up and coming first-timer” in his directorial debut in *Quartet*, a film about retired musicians and their passion for life (Ghomeshi, 2012). In an interview about this experience, Hoffman rightly says, “‘there is a third act. Or if not, there’s a fourth act’…noting that 103-year-old director Manoel de Oliveria continues to make films, while a 94-year-old American man is renowned as a champion in the multisport (triathlon, dualthlon) community” (CBC News, 2012). Our society is aging, and often aging with exuberance. The purpose of this thesis is to investigate one neglected group of our aging population.

More specifically, the goal of this research is to compare the mental health of immigrant Canadians to that of Canadian-born among the population over the age of 60. The focus is on understanding the relationship between immigrant status and mental health, as well as the influence of other factors such as demographics, socioeconomic gradient, health behaviours, social support, and health-related variables. As this thesis outlines below, there are important reasons for choosing to focus on immigrant status and on an older population.

1.1 Demographics of Aging in Canada

As the age structure of Canada's population changes, research focusing on an older population is becoming more important. According to the 2006 Census, the number of Canadians aged 65 and older increased by 11.5 percent in the previous five years, while the number of children under 15 declined by 2.5 percent over the same period (Statistics Canada, 2007c). The report states,

> according to the most recent population projections, the proportion of seniors in the Canadian population could nearly double in the next 25 years, while the proportion of children is expected to continue falling. If these demographic changes occur, they will have a major impact on the labour force, on public pension and health insurance plans and, in general, on the Canadian economy and society. (Statistics Canada, 2007c, p. 7)

The median age of the Canadian population rose 17.5 years between 1881 and 2001(Novak & Campbell, 2010). By 2006, the median age was 39.5 and it is projected to

be 46.9 by 2056 (Novak & Campbell, 2010). Demographic shifts such as these are changing the composition of the Canadian population.

At the same time as the population is aging, immigration is also changing the social characteristics of Canadian society. In recent decades, people from non-European nations have constituted the majority of Canada's immigrants. According to Canadian Census data, the percentage of racialized minorities has increased from 11.2 percent to 16.2 percent between 1996 and 2006, and the percentage of immigrants has increased from 17.4 percent to 19.8 percent in the same time period (Statistics Canada, 2008). If trends such as these persist, the racialized minority and immigrant population[1] will continue to constitute a sizeable and growing proportion of the Canadian population.

It is useful for us to know some of the characteristics of Canada's older population. Table 1 shows 2006 Census data on the population of older immigrants in Canada.

[1] It should be noted that while some immigrants are also members of racialized minority groups, these are not necessarily the same groups of people. There are many immigrants who are not considered racialized minorities, and conversely, a segment of the Canadian-born population are racialized minorities.

Table 1: Older immigrants by place of birth, and percentage of the immigrant population in Canada, 2006

	Between age 60 and 74	Age 75 and up	Total "Older" Population
Total Canadian Population	**12.2%**	**5.8%**	**18.1%**
Immigrants Only	**17.9%**	**8.8%**	**26.7%**
Immigrants by Area of Origin			
Immigrants born in US	3.4%	4.9%	3.9%
Immigrants born in Europe	57.6%	68.5%	61.2%
Immigrants born in Caribbean, Central and South America	8.4%	4.7%	7.2%
Immigrants born in Africa	3.4%	2.1%	3.0%
Immigrants born in India or Pakistan	7.1%	3.8%	6.0%
Immigrants born in China	6.6%	7.6%	6.9%
Immigrants born in other Asian countries	9.6%	5.8%	8.4%
Immigrants born in other countries	3.8%	2.4%	3.3%

Statistics Canada. (2009) *The 2006 Census of Canada*: PUMF Individual File.

This table shows that the proportion of those who are over the age of 60 is larger in the immigrant population than in the overall Canadian population. While 18 percent of the Canadian population is over 60 years of age, 26.7 percent of the immigrant population is over age 60. Looking at the percentage of older immigrants by place of birth in two age categories (between age 60 and 74, and age 75 and up) illustrates additional interesting characteristics about immigrants in Canada. Sixty-eight and a half percent of those aged 75 and older were born in Europe compared with 57.6 percent of those between age 60 and 74. This reflects the now abolished policy preference of the Government of Canada for European immigrants. Looking at the between 60 and 74 age group, there are higher proportions of immigrants from Caribbean/ Central, and South America, Africa, India and Pakistan, and other Asian countries (excluding China) compared to the older age group. This is a reflection of changing source countries, which began in the 1970s and continues to the present.

Table 2, shown below, shows the age at immigration for two age categories of the population of older immigrants. It is clear that the majority of immigrants arrive in Canada between the ages of 20 to 34. Close to half of immigrants between the ages of 60 and 74 immigrated at this age, reflecting the fact that a majority of immigrants come to Canada when they are working-age. However, there is also an important proportion of the population of older immigrants who immigrate at age 55 or older. In fact, about 14 percent of immigrants who are now 60 or older came to Canada after age 55.

Table 2: Older immigrants by age at immigration, 2006

Age at Immigration	Between age 60 and 74	Age 75 and up	Total "Older" Population
0 to 19 years old	19.1%	11.1%	16.4%
20 to 34 years old	48.0%	43.3%	46.5%
35 to 54 years old	21.8%	24.7%	22.8%
55+	11.1%	20.9%	14.3%

Statistics Canada. (2009) *The 2006 Census of Canada*: PUMF Individual File.

Among immigrants who are now older than 75, over 20 percent immigrated after age 55. This group of people may have unique health and integration challenges as they age. It is often the case that immigrants who come to Canada later in life leave behind family, friends, and their homelands to live as dependents of their adult children (MacKinnon, et al, 2001). As a result, there is evidence that some people in this situation may feel isolated, and this affects their health status. To complicate matters, they may feel uncomfortable discussing their health needs with their families, fearing that they have become a burden. MacKinnon and his colleagues (2001) report that some

elderly Chinese, for example, "refused to ask for money to buy medication, even when it was critically important, for example, for diabetic treatment" (p.10). Issues with communicating with health professionals may also contribute to dangerous health practices among immigrants, if for example, there is miscommunication in the way a medication should be administered. People who settle in Canada at a later age may have unique health concerns.

1.2 Research Question

Aging is a complex phenomenon as experiences across the life course intersect with gender, socioeconomic status, immigration status, isolation, and health status. The focus of my research is on the mental health status of older adults, comparing immigrants with the Canadian-born population. One research question guides this research: What structural factors and health-protective behaviours of the aging population influence mental health outcomes?

The demographic transition that is reflected in the aging baby boomer population, along with a lower birth rate and the necessity of immigration to maintain the workforce in Canada, is an important starting point for sociological inquiry as the framework of our population is changing with important effects on society. As a significant proportion of Canadian population reaches an age above 60 years and a lower portion of the population is contributing to the *Old Age Security Plan* and the *Canada Pension Plan*, there will be increased discussion surrounding the role of the state in caring for older individuals, and also whether or not the state has a

responsibility to care for the unique needs of an aging immigrant population. People in society experience intersecting systems of oppression, and ethnicity, gender, racism, and class are necessary considerations when creating policy initiatives that foster social equality and justice. Are differential health services and mental health security a right for all Canadians to enjoy, or should such things be viewed as commodities to be bought and sold? Will unequal distribution of health care resources contribute to or decrease social inequality? These are key questions that will become increasingly important in the coming decades. What will be the policy response? This research contributes to knowledge on the presence of mental health disparities of key groups in the Canadian population. It provides information that will aid the formulation of long-term policies that will affect the health of Canadians.

The next chapter describes some of the literature and relevant theoretical perspectives that provide a framework for this research and guide the investigation of the main research question. Information about the data source, the Canadian Community Health Survey- Healthy Aging (2010), is presented along with some demographic characteristics of the study population and a description of the main dependent and independent variables in the third chapter. The fourth and fifth chapters describe the statistical models for satisfaction with life and mood and/or anxiety disorders and discuss the findings. Finally, in the last chapter, the findings are summarized and their contribution to integration research is highlighted. Limitations of this study are also acknowledged, followed by suggestions for further research on this topic.

Invisible Woman

you have to serve

your time

why not volunteer

if meaningful activity

is what you seek?

do not mind that

other hands

are paid for what they do

-Madeline Coopsammy, “Invisible Woman” (2004, p. 37)

Chapter Two: Theoretical and Literature Review

One important aspect of sociological thinking is the ability to view everyday experiences through a wider lens that takes into account larger societal forces. The above excerpt from a poem lends insight into one woman’s experience, but one can easily see how factors such as immigration status, racism, and gender may be playing a role. This study examines variables related to mental health, specifically life satisfaction and presence of mood and/or anxiety conditions—which are very personal issues—among older adults born in and outside of Canada, using a quantitative approach. This approach is only one of many ways to investigate this topic sociologically, and it is one among many ways to

try to make sense of complex phenomena. This chapter contains an overview of the theoretical paradigm, structuration theory, which is used in this thesis to aid investigation of the research topic. This is followed by a discussion of the literature surrounding this research topic, and its relevance in sociology as well as in terms of policy.

2.1 Giddens' Structuration Theory

Anthony Giddens' structuration theory (1984) acts as a framework to understand how individual agency and social structure can affect an individual's life chances. Giddens' theory is an attempt to integrate the complex relationship between human agency and the constraints of structure. Historically, sociologists tended to use functionalist theories to explain human interaction, but in the 1960s, various viewpoints offered many alternative explanations. Many of these theoretical perspectives placed emphasis on the individual actor, such as phenomenology. Giddens' focus is to bridge these two major schools of thought in a way that brings more understanding to social phenomena, and to explain the dualistic relationship between structure and agency. In sociology, agency and structure are often seen as axiomatic, however it is crucial that they be defined. Below, the definitions of agency and structure for the purposes of this thesis are outlined.

2.1.1 Agency and Structure

There are two central elements in Giddens' theory: agency and structure. Agency can be seen not as "the intentions people have in doing things but to their capability of

doing those things in the first place" (Giddens, 1984, p. 9) . In other words, agency is an individual's capacity to "act otherwise" if he or she decides to do so. This means "being able to intervene in the world, or to refrain from such intervention, with the effect of influencing a specific process or state of affairs. . . Action depends upon the capability of the individual to 'make a difference', that is, to exercise some sort of power" (Giddens, 1984, p. 14).

Structure, conversely, is understood as patterns that order human interaction (Giddens, 1984). These structuring properties allow for the "'binding' of time-space in social systems. . .[and] make it possible for discernibly similar social practices to exist across varying spans of time and space and which lend them 'systemic' form" (Giddens, 1984, p. 17). Giddens speaks of structure as the "rules and resources" (Giddens, 1984, p. 19) that help order our lives. They help us to make meaning out of what is happening in our lives, and also sanction social conduct (Giddens, 1984).

2.1.2 Duality of Structure

Structure and agency cannot be examined separately. They exist as a duality. Structuration theory "allows one to understand both how actors are at the same time the creators of social systems yet created by them" (Giddens, 1991b, p. 204). Neither the human agent nor society have an overarching advantage in that structure is both "medium and outcome" of the reproduction of practices (Giddens, 1984, p. 25). Structure exists only temporarily, and only inasmuch human actors draw upon their prior knowledge and act accordingly, reproducing social life through every encounter.

Humans do this often unintentionally. An example that Giddens gives is that of language. He writes,

> One of the regular consequences of my speaking or writing English in a correct way is to contribute to the reproduction of the English language as a whole. My speaking English correctly is intentional; the contribution I make to the reproduction of language is not. (Giddens, 1984, p. 8)

Social systems exist because human agents are reproducing the systems. These systems can become routine and stable over time and place but can also be transformed. The English language is constantly evolving. This is an example of the power people have to transform structures.

2.1.3 Agency and Power

People are not powerless. They are not forced to live out lives entirely prescribed by existing structures. He writes that "in structuration theory, the core concern of the social sciences is with recurrent social practices and their transformations"(Giddens, 1991b, p. 203). Indeed, social structures do profoundly affect and sometimes impinge upon peoples' lives. The rules and resources that govern one's ability to integrate into a new society can constrain *and* enable one's choices and agency in this process. With regard to immigrant mental health, supportive integration initiatives, such as access to training in and knowledge of the host country's language can have positive and negative effects on mental health. One study finds that for men, social integration has a positive effect on mental health because it increases the possibility of being involved in paid employment, which is by itself positive for health (Dalgard & Thapa, 2007). However,

integration is linked with psychological distress for women from “non-western” countries, perhaps because integration “may easily lead to conflict with social norms, threats to the self and/or loss of identity, which could be a burden on mental health” (Dalgard & Thapa, 2007). Even as society reproduces the same practices that create inhibiting and liberating structures, people can take action to modify them, and therefore influence their life chances. Human actors are constantly making choices, albeit choices that are constrained by an evolving structural context. Giddens argues that all actors have power, even those who seem at first to be relatively powerless. He writes that “actors in subordinate positions are never wholly dependent, and are often very adept at converting whatever resources they possess into some degree of control over the conditions of reproduction of the system” (Giddens, 1982, p. 199).

Structuration theory provides an analytical lens to examine the factors that influence mental health among the population in this study, and it has been used in previous research to aid investigation into the experiences of immigrants, refugees and other migrants (Goss & Lindquist, 1995; Healey, 2006; Lamba, 2003). Importantly, Giddens’ theory provides a foundation to examine processes of enablement and constraint. For example, immigrant agency is constrained and enabled by structural barriers, such as provincial immigration policies. Supportive policies can enhance the process by which recipients acquire more resources that positively shape the life course trajectory in mental health, while restrictive policies would do the opposite.

Structuration theory highlights the importance of acknowledging both structure and agency. It leads to many questions with regard to mental health. If ascribed statuses such as sex, gender, race, or ethnicity impact a group's mental health status in a negative way, what is the extent of the individual's ability to fight against structural constraints? Does a person passively accept her/his state of mental health? Does she/he wait for doctors, political activists and other "experts" to bring these health inequalities to mainstream attention? Does a person take direct action to meet with health professionals or exercise regularly, for example, in order to improve her/his own mental health status? What do housing decisions, access to money, access to services, social relationships, the consumption of goods, and the lack of all these resources have to do with mental health status? Structuration theory provides a framework to ask such questions about the patterning of health and illness in the population, and how the balance of structure, agency and power may shift to allow for social change.

A disadvantage of using this approach to analyze data from a population-based survey is that such breadth makes it difficult to fully understand the way that individuals strategically navigate their worlds and make specific choices that protect themselves from the effects of poor mental health. Utilizing this method of research is suitable in terms of Giddens' concern with structure, but a disadvantage of using a quantitative method is that it is less able to explore individuals' experience of mental health and their agency and transformative capacity to make changes.

Another disadvantage of structuration theory is that it tends to minimize the role of systematic oppression, as structuration theory tends to emphasize the choices people can make to alter their fate. It is important to acknowledge that while people always have a choice in how they act and relate to one another in the world, some people have more choice than others. Utilizing structuration theory with acknowledgement of this limitation and with attention to the way in which social inequality plays a role in mental health will help to compensate for some of the limitations of structuration theory.

Giddens' structuration theory clarifies questions to ask when investigating the dialectical relationship between structure and individual agency. It helps address the research question, "What structural factors and health-protective behaviours of the aging population influence mental health outcomes?" Investigating this question brings clarity to the way that inequalities are reproduced in society and how they can be transformed.

2.2 Literature Review: Mental Health Among Canadian-born and Immigrant Canadians

Many people view their process of aging as a positive experience, and as a society, Canadians are living longer, healthier lives than they have historically. Life satisfaction and presence of a mood and anxiety conditions are both indicators of mental health. This section provides an overview of some of the literature on life satisfaction and mood and anxiety conditions among aging and immigrant populations.

2.2.1 Satisfaction with Life

Satisfaction with life is a key aspect of quality of life. As a population ages, questions arise as to how people judge their lives in a global manner. Immigrants, some of whom make a choice to leave their country of origin to settle in Canada and some of whom do not, have expectations of what life will be like in their new country. Whether or not these expectations are met may affect their life satisfaction, even if they have been in Canada for a long time. This is why it is interesting to explore any differences with regard to quality of life among Canadian-born and immigrant populations in Canada.

In general, variables that are related to satisfaction with life include social support, higher levels of trust in others, feeling in control of one's life, income, and marital status (Canadian Institute for Health Information, 2009). When it comes to age, some studies tend to show a U-shaped pattern with respect to life satisfaction, in that young adults and older adults showing higher satisfaction than those in the age groups in between (Canadian Institute for Health Information, 2009).

A central variable that is seen to impact life satisfaction for an older population is physical health (Al-Windi, 2005; Fernandez-Ballesteros, Zamarron, et al., 2001; Lowenstein & Katz, 2005). A variable that is seen to have a negative impact on life satisfaction among an older population is living alone (An, An, et al., 2008; Yamashita, Iijima, et al., 1999). There is less consensus when it comes to the influence of education. Education has been seen to be negatively correlated with life satisfaction (Talpade & Talpade, 2011) in some studies, and not statistically significant in others (An, et al.,

2008), while showing a positive impact on life satisfaction in others. For example, a study by Fernandez-Ballesteros and colleagues (2001) finds that education, and also income, influences life satisfaction directly and indirectly through psychosocial factors such as activity, perceived health, and physical illness. This may be because people with higher education and income are able to participate more in sports, cultural and social activities (Fernandez-Ballesteros, et al., 2001). In their study, activity is the strongest psychosocial variable to have an impact on life satisfaction (Fernandez-Ballesteros, et al., 2001). We do not know its effect on immigrants and life satisfaction.

In a study of social support, it is found that formal support, in other words, support from those paid to help older adults, but not informal assistance (support from unpaid friends or family members) helps to buffer or reduce the detrimental effects of perceived health problems on changes in life satisfaction through time in a population of older adults (Krause, 1990). Work such as this suggests that there may be potential public policy recommendations that could help improve life satisfaction among an aging population.

Some studies find that the way immigrants evaluate their quality of life differs from the Canadian-born. For example, in a study by Vohra and Adair (2000) immigrants from India to Canada judge their life satisfaction based on a comparison to peers back home, the majority white community in Canada, and other Indian immigrants. Satisfaction is also predicted by the discrepancy between what they have in Canada and what they feel they could have had in India, perceived discrimination, guilt over leaving

their country of birth, and perception of social support (Vohra & Adair, 2000) . However in their study, life satisfaction is not predicted by education, socioeconomic status or perception of day-to-day comforts (Vohra and Adair, 2000).

In a study by Lowenstein and Katz (2005) that focused on Russian immigrants in Israel among two generations, adult children and their elderly parents, finds that for both generations, life satisfaction is higher when the generations lived in separate as opposed to shared households. This is attributed by the authors to the fact that most people live in shared household because of economic constraints (Lowenstein & Katz, 2005). The study also finds that for the older generation, the subjective evaluation of health is more influential with regard to life satisfaction, while standard of living and employment play a more important role for the younger generation (Lowenstein & Katz, 2005). This suggests that the process of evaluating life satisfaction may change as a person ages, or that there may have been a cohort effect in this population. These studies also indicate that factors affecting life satisfaction may be different for native-born and immigrant populations.

2.2.2 Presence of Mood and/or Anxiety Conditions

Along with life satisfaction, presence of mood and/or anxiety conditions is another dependent variable used in my study. Recent studies show that mental health and mental illness are separate, but correlated, dimensions (Keyes, 2005). A person can have an absence of mental illness, and still not flourish if emotional, psychological and

social wellbeing are absent. The two dependent variables in this study reflect this position.

Depression is the most common mood condition (Canadian Mental Health Association, 2012), and is frequently researched in the literature. However, the relationship of aging to occurrence of depression is not well understood, particularly among immigrants. While some studies consider age an important risk factor for depression (Le Couteur, Cogger, et al., 2007), other studies note a decline in the prevalence of depression with age (Cairney, Corna, et al., 2008; Østbye, Kristjansson, et al., 2005). Depression is an important public health problem, with connections to distress, relationship problems, inability to function in everyday roles, and even suicide. It is believed to be under-diagnosed and under-treated in the aging population (Østbye, et al., 2005).

Part of the problem with the limited understanding of the relationship of aging to depression is that there are relatively few studies that focus on depression among older Canadians, as most focus on examining it in the general community (Østbye, et al., 2005). Østbye and collegues (2005) combine earlier studies in a meta analysis and estimate that the overall prevalence of major depression among those 65 years of age and older to be 2.4 percent, and the prevalence of all forms of depression to be 23.3 percent in the same age group. Their study, which uses data from the Canadian Study of Health and Aging, finds that the prevalences of major and minor depression were 2.6 percent and 4.0 percent respectively, and that the overall prevalance of depression is

6.6 percent (Østbye, et al., 2005). This is lower than the overall rates of major depression in the population, as the Public Health Agency of Canada finds that 4.8 percent of the population aged 15 years and older meets the criteria for major depression (Public Health Agency of Canada, 2009) The study also finds women, people in institutions, and those whose health problems that limit their daily activities are at a greater risk for experiencing depression (Østbye, et al., 2005). People with dementia are twice as likely to have depression as those without dementia, although the presence of dementia may make the assessment of depression difficult (Østbye, et al., 2005). This study makes it clear that depression is an important health concern for older Canadians.

Gadalla (2009b) uses data from the National Population Health Survey on Canadians aged 65 and older to explore relationships between sense of mastery (SOM), social support, health, and chronic stress, using structural equation analysis. She finds that mastery is an important mediating factor between social support and health for both men and women, and argues that "mastery is an important protective resource against the detrimental effects of physical and psychological stressors for older people" (Gadalla, 2009b, p. 592). People with higher income have better health and more social support, which affects their sense of mastery over their life circumstances (Gadalla, 2009b). Results such as these are a reason why the socioeconomic gradient in health, discussed below, is important to include in studies of mental health and illness. Gadalla (Gadalla, 2009b) suggests that "prevention and intervention social programs should target older individuals at risk of low or diminishing SOM" (pp. 592-593). It would be prudent to connect older adults with low socioeconomic status to initiatives that

enhance their sense of mastery in order to improve physical and psychological health outcomes.

Cairney and colleagues (2008) also examine markers of social position and their effect on psychiatric disorder among older adults, with a focus on the mediating effect of social support. This study uses data from the Canadian Community Health Survey: Mental Health and Well-Being, and focuses on a population of older adults, age 55 years and older. Using a series of logistic regression analyses, Cairney and colleagues (2008) find a negative association between age and affective and anxiety disorders, and that the likelihood of reporting disorder is elevated among separated-divorced and widowed respondents relative to those who are currently married. Social support is statistically significant in their models, and mediates a considerable amount of the effect of marital status on disorder (Cairney, et al., 2008).

First language is statistically significant in some models, but is a bit confounding. Having a first language of French is associated with a lower likelihood of anxiety disorders, while those whose first language was neither English nor French are less likely to meet criteria for anxiety disorders (Cairney, et al., 2008). The authors state that their findings "confirm the importance of markers of social position as correlates of psychiatric disorder across the life course" (Cairney, et al., 2008, p. 107). The study finds a heightened risk of disorder among those who started but did not complete postsecondary education, and a lower risk among postsecondary graduates, however

there is no effect for less than secondary education (Cairney, et al., 2008). Overall, these findings emphasize the importance of social relationships on psychiatric disorder.

While the study by Cairney, et al. (2008) finds that the prevalence of psychiatric disorder decreases with age, another study by Crabb and Hunsley (2006) shows interesting findings with regard to depression and use of health care services among older adults. They compare patterns of mental health service utilization among three age groups: middle aged (45-64 years), younger old (65-74 years), and older old (75 years and older). This study finds that compared to middle-aged adults with depression, people who are 65 years or older are less likely to report mental health consultation in the past year, and especially unlikely to report consulting with professionals other than a family physician (Crabb & Hunsley, 2006). Even when variables such as gender, marital status, years of education, presence of a depression diagnosis, and chronic medical conditions are controlled, age remains a significant predictor of utilization of health services (Crabb & Hunsley, 2006). It is noteworthy that while many studies indicate that depression rates decrease with age, this study finds that health services are underutilized by older Canadians. This may indicate that depression may be going untreated in older populations, or that the decreased depression rates are more a consequence of people not having opportunity to be diagnosed, rather than improved mental health status with age. It is also possible that older adults are more likely to actively resist diagnosis by the medical community.

Similar to Canadian research on the mental health of older Canadians, the research that has been conducted with regard to the influence of immigration and acculturation on mental health tends to use population-based samples of adults age 18 and older without sustained attention to older immigrants in Canada (Markides, Salinas, et al., 2008-2009). In one general population-based study by Xu and McDonald (2010), mental health (defined by an aggregated index constructed by commonly used mental health indicators including stress, depression, alcoholism, and suicidal ideation) is expressed as a function of socioeconomic and demographic conditions in a series of regression models. The study, which utilizes data from the 2001-2005 files of the Canadian Community Health Survey and includes a population of immigrants aged 20 to 65, finds that mental health deteriorates with increased years of residence in Canada, and that period of arrival is also an important determinant of immigrant health—those arriving during 1961-1965 have poorer mental health than others, perhaps a reflection of Canada's large intake of immigrants and refugees during this period for humanitarian reasons (Xu & McDonald, 2010). It is also shown that men who arrive in Canada after age 50 have significantly better mental health than those who come to Canada at an earlier age, although this pattern is not the same for women (Xu & McDonald, 2010).

For immigrants, Xu and McDonald (2010) also find that it is it is beneficial with regard to mental health to live in a neighbourhood with a higher density of people from the same ethnicity or score high on indicators of social support. This supports other research. For example, Menezes and colleagues (2011) conduct a multilevel analysis, using the CCHS for individual level data along with the 2001 Census. Their study finds

that immigrants have a lower 12-month prevalence of psychiatric disorder compared to non-immigrants, and that there was an added benefit to immigrants as immigrant concentration increases in the communities (Menezes, et al., 2011). Another study which examines neighbourhood factors comes from Alvi and colleagues (2012) and finds that immigrant women's perceptions of social cohesion was a stronger predictor influencing mental health status compared to non-immigrant women, for whom social support was more influential (Alvi, et al., 2012). These are interesting studies into the way that broader factors seem to affect the mental health of individuals.

Xu and McDonald (2010), who focus on working age individuals ages 20 to 65, find that it is detrimental to mental health in their sample to be divorced or separated, live in a metro area, or have poor or fair physical health (Xu & McDonald, 2010). Their study finds that mental health is best among youth and those of older age, while the most mental health problems are among men and women of middle age (Xu & McDonald, 2010). Those who have postsecondary education were more likely to experience mental health conditions compared to secondary school graduates, but other indicators of socioeconomic status, such as home ownership is associated with a lower score on mental health indicators (Xu & McDonald, 2010).

Another study focusing on immigrants and utilizing data from the Canadian Community Health Survey (2000/2001) finds that immigrants have lower rates of depression and alcohol dependence than the Canadian-born population, with the strongest difference being between recently arrived immigrants and the Canadian born

(Ali, 2002). Long-term immigrants compare more similarly to the Canadian-born population in terms of mental health status (Ali, 2002). Related to this is that immigrants from Africa and Asia, who are more likely than immigrants from Europe to have arrived recently, tend to have better mental health status than the Canadian born.

Most research focusing on older immigrants and mental health examines a particular migrant community. An example is Lai and Surood's (2008) study which examines the prevalence and factors of depression among aging South Asians in Canada. Lai and Surood examine the effects of factors in predicting the probability of depression. Women have a greater likelihood of depression compared to men, and in addition, better physical health reduces one's probability of being depressed (Lai & Surood, 2008). The most important factor influencing depression is level of agreement with South Asian cultural values. Those with higher scores in South Asian cultural values had a 2.9 times increased likelihood of being depressed (Lai and Surood, 2008). This study suggests that mental health interventions should consider the cultural uniqueness of the older South Asian population, and should take steps to ensure that services are known and accessible to a culturally diverse, aging population (Lai and Surood, 2008).

2.2.3 Socioeconomic Gradient in Health

It is crucial to examine socioeconomic factors when researching mental health. Membership in different groups means differential access to resources, power, and prestige. Dowd (1980) writes, "the individual's experience of growing old and the nature of age relations vary so significantly by social class that there is a need for unified

analysis in which both age *and* class are considered" (p.21-22). This study focuses on variables related to economic status that are expected to affect mental health status.

Humphries and van Doorslaer (2000) write, "regardless of the SES measure employed or the health outcome measured, the link between SES and health status is evident in our earliest records and exists in every country in which the relationship has been examined" (p.663). Using data from the National Population Health Survey, the researchers report that "ill health shows a monotonic negative gradient across the entire income distribution, implying that the association is not merely a consequence of extreme poverty: even the very rich report better health than the not-so-very-rich"(Humphries & van Doorslaer, 2000, p. 668). Their findings clearly show that Canada's health inequality is high, and that the socioeconomic gradient in health is a useful lens to help make sense of the health disparities in Canadian society. This study explores the socioeconomic gradient in health with regard to older immigrants and their life satisfaction and mental health.

The influence of these socioeconomic factors on the experience of health and illness for immigrants is not well understood (Dunn & Dyck, 2000). Dunn and Dyck (2000), who set out to investigate the social determinants of health in Canada's immigrant population using Canada's National Population Health Survey, find "no obvious pattern of association between socioeconomic characteristics and immigration characteristics on the one hand, and health status on the other" (p.1590). They note several complexities in studying immigrant health that do not exist for other Canadians.

For example, the above noted health screening process for immigrants creates a self-selected (or government-selected) healthier group of people. This may translate into longer and healthier lives as they age. In addition, immigrants are often admitted on the basis of their own wealth, or the resources of a family member who is financially responsible for them for a period of time.

From a socioeconomic gradient in health perspective, this would give some groups an advantage (wealth), and make some groups dependent on their ability to rely on their sponsor rather than the health care system. Dunn and Dyck (2000) write,

> A proportion of immigrants are admitted on the basis of their wealth, and the investment they will bring to Canada, or alternatively, they are sponsored, usually by a family member, who agrees to take financial responsibility for their living needs (disqualifying them for welfare, for instance). This latter complexity could conceivably make people more or less able to cope in their new country, depending largely on the reliability of support they receive from their sponsor. Individuals in the former category of immigrants would presumably accrue relative health advantages following from their economic resources, although these may (or may not) be offset by disadvantages following from language difficulties or outright discrimination that affect social/or labour market participation. (p. 1591)

These complexities cannot be fully examined using population-based survey data.

It is also difficult using quantitative research to obtain a full picture of each individual's history. The conditions immigrants experience during early childhood may critically influence their health trajectory, especially if they immigrated later in life (Dunn & Dyck, 2000). Refugees who may have experienced trauma, are likely to have health experiences that are significantly different than immigrants who came to Canada for economic reasons. We do not know the effects that these traumatic health

experiences will have in the long-term.[2] This type of information is not readily available in large sample, population health surveys (Dunn & Dyck, 2000), and it cannot be ignored that immigrant health is complex and sensitive to context.

However, there are many studies that have shown a socioeconomic gradient in mental health (Dalgard, 2008; Fryers, Melzer, et al., 2005; Mutaner, Eaton, et al., 2004). The socioeconomic gradient contributes to our understanding of the patterning and distribution of mental health in society, and is an important aspect of this thesis. There is very little research on the socioeconomic gradient of mental health amongst immigrants to Canada, and the use of structuration theory to provide a framework for investigation attempts to address this gap in a way that ties individual, behaviour-related variables with more fixed, structural factors.

2.3 Discussion of Research Question

With a focus on examining whether or not there is a difference between the Canadian-born and immigrant population in Canada, the main research question of this thesis is, "What structural factors and health-protective behaviours of the aging population influence satisfaction with life and presence of mood and/or anxiety disorders?" This question is guided by structuration theory, and its application to explaining social phenomena based on the dualistic relationship between structure and agency. In this thesis, demographic, socioeconomic gradient, health behaviour, social support and

[2] Given the limitations of Canadian data, it is nearly impossible to compare the health outcomes of immigrants *and* refugees to the Canadian-born population. While the *Longitudinal Survey of Immigrants to Canada* gives ample information about immigrants and refugees, its population does not include the Canadian-born and only follows the cohort over a period of four years.

health-related variables are analyzed in terms of their relationship to mental health, conceptualized by life satisfaction measures and presence of mood and/or anxiety conditions. By using a large national sample, this thesis is able to contribute to the literature in sociology by examining the factors that affect mental health in this population in a collective way. While each experience of mental health is unique to every individual, this thesis and its use of structuration theory connects individual behaviours to a larger context, which includes demographic and economic factors. Fostering an environment where a healthy aging population can flourish is a priority for all Canadians, and this thesis clarifies some of the factors that influence mental health. There is a scarcity of literature on the mental health of older immigrants, especially that which utilizes a nationally-representative sample and incorporates the socioeconomic gradient in health.

While there are many important initiatives that focus on ways to support the physical health of older Canadians, this thesis contributes to research that may lead to policy suggestions that benefit this population in terms of mental health. What behaviours can people focus on in their lives, and how can we as a society contribute to a social structure that enables older Canadians in terms of mental health? While it may not be possible to eliminate all conditions that are limiting to a person's mental health, there may be ways in which society can create an environment that reduces the chances of experiencing a mood and/or anxiety condition and increases life satisfaction and in effect contributes to enhancing people's overall quality of life. Because of the comparison groups in this study (men and women, immigrant and Canadian-born), it

may be possible for there to be different policy suggestions for groups of people. For example, it may be that one group may benefit more from initiatives that make it easier for aging Canadians to incorporate physical or social activity into their lives, while others may benefit from support to keep families living together in the same home.

The next chapter is a discussion of the data and methodology used in this thesis, the sampling method and description of the sample, the operationalization of the variables, and the data analysis technique that is used to conduct this research.

About how many?

About one in six.

What kind of people?

People like us.

Who hasn't wanted

to scream the house down?

Felt there was no point

carrying on?

-Peter Reading, "About How Many?" (1997, p. 36)

Chapter Three: Data Source and Methodology

As the above poem illustrates, mental health and illness are personally experienced by each one of us. However, they are also phenomena that can be examined using a quantitative lens. This study analyses data from the Canadian Community Health Survey (CCHS), released to the public in 2010. In this chapter data and methodology are discussed. Below, the sampling method of the CCHS, the description of the sample used in this research, the rationale for the use of the chosen variables, and the data analysis technique are described.

3.1 Sampling Method

The Canadian Community Health Survey is a federal, cross-sectional survey conducted by Statistics Canada to provide estimates of health determinants, health status, and healthcare utilization of the Canadian population. In this study, the Public Use Microdata Files from the cycle released in 2010 titled CCHS- Healthy Aging are used. This cycle includes responses from persons aged 45 and over living in private dwellings in the ten provinces, however only data from those aged 60 and older are used for the purposes of this research. Data were collected between December 2008 and November 2009.

To select the sample of the CCHS-Healthy Aging respondents, a three-stage design was used. First, geographical areas called clusters were selected, second, households were selected within each sampled cluster, and third, one respondent was randomly selected from the households (Statistics Canada, 2010). The clusters in each province were stratified into urban and rural clusters, and the desired numbers of clusters were sampled proportional to the number of persons aged 45 and older in each cluster (Statistics Canada, 2010). Because of the stratified and clustered nature of the sampling design, the weighted variable, which is interpreted as the number of people each respondent represents in the Canadian population, is used in this analysis to compute statistical estimates in order to account for some of the sampling error attributed to using this method of selecting respondents.

In total, of the 41,496 households selected for the CCHS-Healthy Aging survey, 33,517 households agreed to participate resulting in a household-level response rate of 80.8 percent (Statistics Canada, 2010). Among the households that responded, 33,517 individuals were selected to participate in the survey, and 30,865 individuals chose to participate (Statistics Canada, 2010), resulting in a combined response rate of 74.4 percent. The interviews were conducted using computer-assisted personal interviewing (CAPI) which offers a case management system and data transmission functionality, and also the ability to allow for custom interviews for every respondent based on individual responses (Statistics Canada, 2010). CAPI interviewers were trained to make an initial personal contact with each sampled dwelling, and every effort was made to conduct face-to-face interviews. Ninety-four percent of interviews were conducted in person, while collection by telephone was only authorized when a respondent requested an interview in the other official language but no bilingual interviewer was available in the area, or when the respondent spoke neither official language but another interviewer was available to translate for the respondent (Statistics Canada, 2010).

Efforts, such as the sending of introductory letters, repeat visits to dwellings, attempts at refusal conversion, accommodations for language barriers, and the use of proxy interviews when physical or mental health limited a respondent's ability to complete an interview, were utilized in order to minimize non-response (Statistics Canada, 2010). While the privacy of respondents was prioritized, and effort was made to ensure that interviews were done in private, there were some situations in which this was not possible. In this case, flags on the microdata were placed when someone else

was present during the interview process, and when the interviewer felt that the respondent's answers were influenced by the presence of the other person.

Immigrants are well-represented in the survey. The number of respondents who completed the CCHS-Healthy Aging interviews that claim immigrant status is 6,017—19.6 percent of the sample population. This is very close to the proportion of immigrants in the Canadian population, which was 19.8 percent in 2006 (Statistics Canada, 2009). The sample population for the purposes of this study is adults over 60 years of age, with a median age of 70-74 years. The sex distribution is somewhat skewed, with 42 percent of immigrants who are male and 58 percent who indicated they are female. As a result, sex bias is somewhat larger for immigrants than in the overall Canadian population, as 54 percent of the Canadian population are female in 2006 Census data, while 46 percent are male (Statistics Canada, 2009).

The CCHS sampling method has several strengths, as it is a diverse sample which is distributed similar to the Canadian population. Its large size allows for statistical comparisons between immigrant and Canadian- born populations and between the sexes. As a Statistics Canada survey, ethical guidelines were strictly followed during data collection. During a qualitative test of the survey instrument, participants found the questionnaire to be straightforward, but lengthy. In general, respondents did not find the questions to be overly sensitive, aside from questions with regard to inheritance, social networks, and loneliness (Statistics Canada, 2010). After a pilot test, decisions were made to exclude longer, complex or more sensitive modules. The

questions on social networks, assets and inheritances, work history, spousal retirement and self-reported cognition were removed to avoid respondent fatigue and burden (Statistics Canada, 2010).

However, there are some disadvantages in the sample selection process. For example, excluded from this survey are residents of the three territories, those who live on Indian Reserves or Crown lands, those residing in institutions, full-time members of the Canadian Forces and residents from some remote regions. Because of this, entire segments of the Canadian population are excluded from the sample, and caution must be exercised when interpreting the results of this study to keep in mind the somewhat limited generalizability of the sample.

3.2 Description of the Sample

For the purposes of this study, the sample is restricted based on age. The reason restricting analysis to those aged 60 years or older is based on the rationale that this cutoff will allow for sufficient sample sizes for meaningful statistical analysis, while limiting the discussion to the "aging" population who have reached or are at least contemplating their retirement. This age cutoff has also been used in previous research (D'Augelli & Grossman, 2001; Fiori, Antonucci, et al., 2006; Kim, DeCoster, et al., 2011) Further, missing data are dealt with by use of listwise deletion. The sample, therefore, is limited to respondents aged 60 years or older who do not have missing data on the variables that are selected for analysis. When the data are weighted to represent the Canadian population, there are 4,116,983 people in the study, representing adults over

the age of 60 in the Canadian provinces (territories are excluded in this version of the CCHS). Of these, 75 percent are Canadian-born and 25 percent are born elsewhere. These two groups are the main populations that are compared, along with sex differences. Bivariate[3] and multivariate analyses are only run on cases which have a complete set of data. Table 3 shows a distribution of selected independent variables.

[3] Approximate Sampling Variability Tables have been consulted and have met guidelines set by Statistics Canada. See Statistics Canada (2010) for more information on using Approximate Sampling Variability Tables for categorical estimates and proportions.

Table 3: Distribution of selected independent variables, 2009, Weighted

n=4,116,983	Canadian-born ♀	Immigrant ♀	Canadian-born ♂	Immigrant ♂
Age ***				
60 to 64 years	33.5%	35.0%	35.2%	32.2%
65 to 69 years	22.70%	20.0%	23.6%	23.5%
70 to 74 years	16.1%	19.4%	17.6%	19.3%
75 to 79 years	13.8%	10.8%	11.1%	12.7%
80 to 84 years	8.1%	9.1%	8.1%	7.1%
85 and older	5.9%	5.8%	4.1%	5.1%
Education				
Less than high school	30.2%^{NS}	27.2%^{NS}	29.6%***	21.8%***
Graduated high school	19.6%^{NS}	21.9%^{NS}	14.6%***	16.3%***
Some postsecondary	5.8%^{NS}	5.3%^{NS}	5.6%***	2.8%***
Postsecondary graduate	44.5%^{NS}	45.6%^{NS}	50.2%***	59.1%***
Population Density ***				
CMA	61.1%	79.5%	55.9%	84.8%
Not CMA	38.9%	20.5%	44.1%	15.2%
Province ***				
Maritime Provinces	7.7%	1.2%	8.9%	1.1%
Quebec	31.8%	10.7%	31.2%	11.6%
Ontario	31.6%	60.4%	32.5%	55.3%
Manitoba/ Saskatchewan	7.2%	2.9%	7.4%	3.1%
Alberta	9.1%	5.0%	8.7%	8.8%
British Columbia	12.6%	19.8%	11.1%	20.2%
Racialized Status***				
Yes	2.2%	16.0%	2.6%	25.9%
No	97.8%	84.0%	97.4%	74.1%

(Table 3 continued on next page.)

Table 3 (Continued): Distribution of selected independent variables, 2009, Weighted

n=4,116,983	Canadian-born ♀	Immigrant ♀	Canadian-born ♂	Immigrant ♂
Official Language Knowledge ***				
English	61.4%	78.3%	60.1%	75.5%
French	20.1%	3.6%	15.7%	3.6%
English and French	18.5%	12.7%	24.0%	15.6%
Neither English nor French	0.0%	5.4%	0.1%	5.3%
Living Arrangement Status ***				
Single and living alone	30.9%	27.8%	14.6%	12.0%
Single and living with other(s)	7.9%	9.1%	3.0%	4.5%
Married and living alone	1.1%	1.2%	1.2%	2.2%
Married and living with other(s)	60.1%	61.9%	81.2%	81.3%
Participation in Social Activities * Range = 0--24**	$\bar{x}$ =9.31	$\bar{x}$ =8.09	$\bar{x}$ =8.57	$\bar{x}$ =7.97
Physical Activity Range= 0-536	$\bar{x}$ =114.16^{NS}	$\bar{x}$ =119.04^{NS}	$\bar{x}$ =141.21^{NS}	$\bar{x}$ =137.79^{NS}
Emotional Support Range= 0-32	$\bar{x}$=27.04***	$\bar{x}$ =26.63***	$\bar{x}$ =27.30^{NS}	$\bar{x}$ =27.30^{NS}

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada. ***$p \leq .001$. NS= Not Significant. Tests of significance based on chi-square tests at the nominal/ordinal level and t-tests for ratio level variables.

The immigrant study sample resembles the Canadian-born population in terms of age distribution. Immigrant men appear to be more highly educated, with 59.1 percent holding postsecondary degrees compared to 50.2 percent of Canadian-born men. This may be a consequence of Canada's immigration policies, which reward potential immigrants for their level of education. However, the same pattern does not hold for women, perhaps because many immigrant women come to Canada as dependents. About 45 percent of both immigrant and Canadian-born women have postsecondary degrees, and the differences between women are not statistically significant.

When it comes to area of residence, the immigrant population differs from the Canadian-born population. About 80 percent of immigrant women live in CMAs, while only about 60 percent of Canadian-born women live in CMAs. The same is true for men as 85 percent of immigrant men live in CMAs compared to 56 percent of Canadian-born men. This reflects the tendency of immigrants to settle in large urban centres. For example, in 2001 94 percent of immigrants who had arrived in Canada over the previous ten years resided in a CMA (Statistics Canada, 2007b). In terms of province of residence, a higher percentage of the Canadian-born live in the Maritime provinces, Quebec, Manitoba and Saskatchewan, and Alberta. An overwhelming tendency of the immigrant population is to live in Ontario—approximately 60 percent of immigrants live here while

only about 30 percent of the Canadian born live in Ontario. This pattern is also evident in British Columbia, where approximately 20 percent of immigrant men and women live compared to about 12 percent of Canadian-born.

Sixteen percent and 26 percent of immigrant women and men, respectively, are racialized[4], while 2.2 and 2.6 percent of Canadian-born women and men are racialized, meaning they are not white. A higher percentage of the immigrant population have knowledge of English, and the same is true for lacking knowledge of Canada's official languages—about five percent of immigrant men and women fall into this category.

Living arrangement is an interesting variable with greater differences between men and women than between the Canadian-born and immigrants in the study. While about 31 and 28 percent of Canadian-born and immigrant women, respectively, are single and living alone, 15 and 12 percent of Canadian-born and immigrant men belong to into this category. Just comparing men and women, about 80 percent of men are married and living together compared to 60 percent of women who are married and living together. This may be a reflection of the tendency of women in heterosexual relationships to outlive their spouses. This pattern is similar to a report published in 2007 by Statistics Canada which states that in 2001, senior women were twice as likely as senior men to live alone (Statistics Canada, 2007a). The report attributed this statistic to women's longer life expectancy in addition to men's tendency to marry younger women.

[4] The term "racialized" is used in this thesis instead of terms such as "visible minority" (used by Statistics Canada) as it expresses race as something that is socially constructed.

The Canadian-born have slightly higher means in participation in social activities. Men's physical activity means are higher than women's, with no statistically significant difference between immigrant and Canadian-born within the sexes. Emotional support means are similar among the four groups at about 27. In the next section, the variables that have been chosen for this study are described, along with the way in which they are operationalized.

3.3 Dependent Variables

Two dependent variables are used in this research. The first is a variable that is an indicator of life satisfaction. The second is presence of a mood and/or anxiety condition.

Satisfaction with life reflects one's positive emotions about one's past, present and future life, or in other words, one's ability to enjoy life (Canadian Institute for Health Information, 2009). It is one way of operationalizing positive mental health. In this current research, life satisfaction is measured by the Satisfaction with Life Scale (1985), based on a five-item questionnaire developed by E. Diener and colleagues. The Satisfaction with Life Scale (SWLS) is part of a larger area of research on the construct of subjective wellbeing, and is a complement to psychology's traditional goals of understanding unhappiness in the form of depression, anxiety and unpleasant emotions (Pavot & Diener, 1993). Satisfaction with life refers to the judgment that people make regarding the quality of their lives according to their own criteria (Pavot & Diener, 1993). The SWLS was developed in the United States and is "designed to assess a

person's global judgment of life satisfaction, which is theoretically predicted to depend on a comparison of life circumstances to one's standards" (Pavot & Diener, 1993, p. 165). Life satisfaction has been described as "a distinct construct representing a cognitive and global evaluation of the quality of one's life as a whole" (Pavot & Diener, 2008, p. 137).

The five items in the scale are answered using a seven point Likert style response scale ranging from 1= strongly disagree to 7= strongly agree. The items are all keyed in a positive direction, so the responses can be summed to arrive at a total score for the scale, making the range of scores five to 35. Pavot and Diener (2008) suggest that

> Scores between 5 and 9 indicate that the respondent is extremely dissatisfied with life, whereas scores ranging between 31 and 35 indicate that the respondent is extremely satisfied with life. Scores between 21 and 25 represent slightly satisfied, and scores from 15 to 19 are interpreted as falling in the slightly dissatisfied range (p.141).

For the purposes of this study, these guidelines are used to create a dichotomous variable indicating satisfaction with life. Those who score 1 through 19 on the scale are coded as being less satisfied with life while those who score between 20 and 35 are coded as being more satisfied with life.

Although it is brief in that it contains only five items, the SWLS has demonstrated good psychometric characteristics and has been used in hundreds of studies to assess the life satisfaction component of subjective wellbeing (Pavot & Diener, 2008). Pavot and Diener (1993) present data from six studies in which the coefficient alpha for the SWLS ranged from 0.79 to 0.89, indicating high internal consistency. Additionally, Alder

and Fagley (2005) report a coefficient alpha of 0.87 and Steger and colleagues (2006) report a coefficient alpha of 0.86 for the scale. In terms of test-retest reliability, Pavot and colleagues (1991) report a coefficient alpha of 0.84 and Steger and colleagues (2006) report a coefficient alpha of 0.86 for a one month interval. Over a four year span, an alpha coefficient of 0.54 has been reported (Magnus, Diener, et al., 1993). It has been shown that life satisfaction has moderate temporal stability, although it also changes in reaction to life events, and that it shows some degree of autonomy from related subjective wellbeing constructs (Pavot & Diener, 1993). This scale has also demonstrated internal consistency (Cronbach's α=.87; Diener, et al., 1985).

The five items of the SWLS are presented in the Appendix, and have been assessed to be usable with most adults as it is at the reading level of 6th to 10th graders (Pavot & Diener, 1993). The SWLS is appropriate for use in this thesis because normative data are available for diverse populations, including older adults. For example, Blais and colleagues (1989) found a group mean of 28 on the scale for a sample of older French-Canadian men, and a mean of 26 for women. On multiple administrations of the scale for a sample of older American adults, Pavot and colleagues (1991) found a mean of 24. In another study focusing on a sample of older North American adults, conducted by Strachan and colleagues (2010), the measures, which included the SWLS, were deemed appropriate by individuals who worked with older adults in the sample, and piloted for clarity on a focus group of older adults. The SWLS is available in several languages, and has been used in research conducted in French, Spanish, German, Japanese, Czech, Arabic, Dutch, Russian, Korean, Hebrew, and Mandarin Chinese (Pavot & Diener, 1993,

2008). This measure has been used to study immigrants in Portugal (Neto, 2001), immigrants in Switzerland (Neto & Barros, 2007), Indian immigrants in Canada (Vohra & Adair, 2000), and Turkish immigrants in Canada (Ataca & Berry, 2002). It has been applied to a lesser extent to immigrants as a whole in Canada, and to older immigrants in particular. In terms of cross-cultural research, it has been found that culture does influence the way in which people respond to the questions in the SWLS. For example, Diener and Diener (1995) found that people in more individualistic nations were likely to give more weight to self-esteem than people in more collectivist nations in their judgments about life satisfaction, and that financial satisfaction was a stronger correlate of life satisfaction in poorer nations compared to wealthier nations. While the same factorial structure were found among different groups, more research into the scale's cross-language and cross-culture validity would be valuable.

Overall, research that has been conducted has suggested that the items appear to measure a single, unified factor, indicating that there is coherence to life satisfaction (Pavot & Diener, 1993). In a study which set out to measure the discriminant validity of well-being measures including the SWLS, life satisfaction was able to be "discriminated from the affective components of subjective well-being and from the conceptually similar constructs of optimism and self-esteem" (Lucas, Diener, et al., 1996, p. 625). It has been shown to be associated with stronger social relationships (Diener & Seligman, 2002), marital satisfaction (Glenn & Weaver, 1981), reduced suicide risk (Koivumaa-Honkanen, Honkanen, et al., 2001), and reduced risk of aortic calcification in healthy women (Matthews, Owens, et al., 2006). Satisfaction with life is related to both physical

and mental health, and because it assesses a person's evaluative judgment of his or her life based on the person's own criteria, it is a complement to measures that focus more on psychopathology.

The second dependent variable in this study is presence of a mood and/or anxiety condition and is an indicator of mental illness. Saarni and colleagues (2007) find that depressive conditions account for 55 percent of quality-adjusted life years lost due to mental illness while anxiety conditions accounted for 30 percent of that loss. In Canada, it is estimated that 4.8 percent of those aged 15 and over experienced at least one major depressive episode in 2002 (Statistics Canada, 2002). In the United States, the 12-month prevalence of anxiety conditions was estimated at 18.1 percent, and 9.5 percent for mood conditions (Kessler, Chiu, et al., 2005). It has been found that untreated mental illness can lead to disruption in social relationships (Kessler, Walters, et al., 1998) and a higher risk of developing medical diseases (Bowen, Senthilselvan, et al., 2000). Mental illnesses increase risk for communicable and non-communicable diseases, and contribute to unintentional and intentional injury, while health services are not equitably provided to people with mental illnesses (Prince, Patel, et al., 2007). The presence of a mood and/or anxiety condition is significantly associated with short-term disability requiring help with daily activities and reduction/modification of work activity (Gadalla, 2009a). Presence of a mood and/ or anxiety condition is therefore an important factor which affects a person's quality of life.

In the CCHS, participants are asked the following question, “Now I’d like to ask about certain chronic health conditions which you may have. We are interested in long-term conditions which are expected to last or have already lasted 6 months or more and that have been diagnosed by a health professional” (Statistics Canada, 2010). The list of chronic conditions includes “mood disorders” (such as depression, bipolar disorder, mania or dysthymia) and “anxiety disorders” (such as any type of phobia, obsessive-compulsive disorder, or panic disorder). The variable has been transformed so that it is a dichotomous variable scoring “1” for those who have stated that they have mood and/or anxiety condition and “0” for those who do not have a mood and /or anxiety condition.

As the World Health Organization (WHO) has proposed, there can be “no health without mental health” (World Health Organization, 2005, p. 11). Taken together, the two dependent variables are indicators of mental health, which the WHO defines as “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” (World Health Organization, 2001, p. 1). The two measures complement one another as life satisfaction focuses on the more positive aspects of mental health while presence of a mood/anxiety condition focuses on a psychopathological view of mental health. Dependent variables are described in Table 4.

Table 4 : Description of the dependent variables

Variable Name	Variable Description
Satisfaction with Life	1 - More satisfied with life 0 - Less satisfied with life

3.4 Description of the Independent Variables

The independent variables are organized into several themes: demographic, socioeconomic gradient, health behaviours, social support, and health measures. All variables are socially constructed, and therefore not perfectly operationalized. With sex, there is an ongoing debate about whether or not it is an accurate assumption to conceptualize the variable as having only two categories, in this case, male and female. Herdt (1994) writes, "we need not accept such a dualistic system at all, for it perpetuates the false past dichotomies of nature and culture" (Herdt, 1994, p. 50). While these types of discussions are worthy of intellectual energies, they are, for the most part, beyond the scope of this project. The benefits of using the wealth of data provided by a population-based Statistics Canada survey outweigh the disadvantages of not being able to personally decide how to operationalize many of the variables. Below, each of the variables used in this study are discussed with regard to the way in which they measure various concepts.

3.4.1 Demographic Variables

Demographic variables are variables that are, in many instances, ascribed to the respondent or otherwise mostly static. For the purposes of this research, the variables categorized as being demographic include immigrant status, racialized status, sex, language knowledge, age, population density, and province.

Because immigrant status is a key independent variable by which the population will be compared, more attention is given to its definition. In this project, non-permanent residents have been excluded from the sample. Immigrant status is then defined as having either been born in Canada (Canadian-born) or born elsewhere (immigrant). Categorizing people in this way begs the question of whether or not a person classified as an immigrant can ever cease to be classified as such, and whose decision it is to dictate when this transition takes place. An example is the children of immigrants, who are sometimes referred to as second-generation immigrants by researchers despite the fact that they have been born and have grown up in their so-called "host country" (Li, 2003, p. 46). Li (2003) also writes about the social construction of immigrants, and some of the problems that have arisen in defining this concept. He writes, "the granting of Canadian citizenship is sometimes used to demarcate the transition from the immigrant status to the citizen status," (Li, 2003, p. 44) and that documents such as *The Immigration and Refugee Protection Act* use the term "immigrant" to refer to permanent residents, and not Canadian citizens who were born elsewhere. This term has also been associated with people who "appear foreign-looking to most Canadians" (Li, 2003, p. 44) in that "members of the visible minority, irrespective of whether they were born in Canada or not, are more likely than those of

European origin to be considered immigrants because of their superficial physical features" (Li, 2003, p. 45). Additionally, academic definitions of immigrant status often do not account for illegal immigrants, as it is in essence difficult to collect data on this group.

Even using nativity to conceptualize immigrant status can be problematic. Defining immigrant status as people who have permanently moved from the country in which they were born may be inaccurate, as children of Canadian citizens are born overseas, and may decide to move to their country of citizenship. Because the comparison of those who were born in Canada and those who were born elsewhere is a fundamental aspect of this research, consideration of problems in operationalizing immigrant status must be considered, especially when interpreting the data.

Racialized status is another demographic variable. In this study, the variable is defined as being either white, or non-white. It is a gross oversimplification to define a variable in this way. However, the version of the CCHS used in this study does not provide more detailed variables on race and ethnic origins, besides which the smaller sample size of immigrants necessitates broader categories for variables used for comparison. Regardless, race is a necessary aspect to this project. Race must be discussed because ignoring it risks the denial of the way that race affects our everyday lives. According to Cooks (2003, p. 246), implications of whiteness, "a set of rhetorical strategies employed to construct and maintain a dominant White culture and identities" or as indicated by McLaren, (1997, p. 9) "a refusal to acknowledge how white people are

implicated in certain social relations of privilege and relations of domination and subordination" must be acknowledged and discussed in order to move toward socially just practices and outcomes for all. Race affects all of our lives, however it has been shown that many people who are white have difficulty articulating the ways in which race applies to them (Cooks, 2003; Johnson, 1999). Oftentimes, "whites as the privileged group take their identity as the norm and the standard by which other groups are measured, and this identity is therefore invisible, even to the extent that many whites do not consciously think about the profound effect being white has on their everyday lives" (Martin, Krizek, et al., 1999, p. 28). The implications of whiteness must be understood before they can be changed. Therefore it is necessary to define a racialized status variable in terms of being (and not being) white, as it is meaningful to be white in this society.

There are a number of other demographic variables in this research. Sex is operationalized as female or male. Language knowledge falls into this group as well and is based on Canada's official languages. The categories for this variable are knowledge of English, knowledge of French, knowledge of both official languages, or no knowledge of either official language. Age is a grouped variable, and each category ranges five years. See Table 5 for further description of the operationalization of these variables.

There are two demographic variables that deal with area of residence. First, the population density variable is a dichotomous and describes whether or not the respondent lives in a Census Metropolitan Area (CMA). The use of this variable is to

distinguish between urban and rural. The general concept of a CMA is one of a very large urban area, together with adjacent urban and rural areas which have a high degree of integration with that urban area. A CMA is delineated around an urban area called the urbanized core, having a population of at least 100,000, based on the previous Census (Statistics Canada, 2010). Second, the province variable includes all Canadian provinces, however the Maritime provinces are grouped together as well as Manitoba and Saskatchewan as there were not enough immigrants in these regions to investigate them separately.

3.4.2 Socioeconomic Gradient Variables

There are three variables which stand for indicators of socioeconomic gradient. These include: difficulty meeting basic expenses, education, and nutritional risk. Difficulty meeting expenses is used as an overall indicator of the respondents' economic position and utilizes a variable which asks, "with your current household income, do you have any difficulty meeting basic expenses such as food, shelter and clothing?" to which the respondent would either reply "yes" or "no".

Education is also used as an indicator of socioeconomic gradient as is often the case in studies of health inequalities. Segall and Fries (2011) explain that education increases one's ability to acquire employment, and to understand complex health-related information. Health status therefore improves with level of education. For example, study by Hurt and colleagues (2004) finds that in rural Bangladesh, there is an inverse relationship between education (either formal education or religion-based

education verses no education) and mortality among both men and women. Men have the further advantage of decreased mortality rate if their wives were educated, independent of their own education (Hurt, et al., 2004). This suggests that education is related to longer, and perhaps healthier, lives. The variable which deals with education in this present study is grouped into four categories: less than high school education, high school graduate, some postsecondary education, and postsecondary graduate. These are the groupings given by Statistics Canada in this dataset.

Nutritional risk is a variable that is based on an eight-item index called The Seniors in the Community Risk Evaluation for Eating and Nutrition II (SCREEN II-AB), which is used to identify risk for impaired nutritional states in community-living older adults (Statistics Canada, 2011b). In accordance with the SCREENII-AB scoring method, the items, which ask about a respondent's eating habits on a typical day, are summed to a maximum total of 48. A cutoff point of <38 indicates a high nutritional risk. This cutoff point is used to create a dichotomous variable which shows whether or not an individual is at high nutritional risk. SCREEN II-AB is shown to have adequate test-retest reliability and inter-rater reliability and is shown to be a valid and reliable tool for the identification of risk for impaired nutritional states in community-living older adults (Keller, Goy, et al., 2005). Difficulty meeting expenses, lower education, and high nutritional risk are all expected to have a negative effect on mental health measures.

3.4.3 Health Behaviour Variables

Variables categorized as health behavior variables are those thought to be related to the respondent's health, that are also in some control of the respondent. These include: whether or not the respondent has done something to improve health in the past year, consultation of a health care professional in the past year, smoking behaviour, alcohol consumption behaviour, participation in social activities, and rate of physical activity.

The variable that deals with whether or not the respondent has done something to improve health in the past year is dichotomous. The question states, "in the past 12 months, did you do anything to improve your health? (For example, lost weight, quit smoking, increased exercise)" (Statistics Canada, 2011a). Those who have taken action to improve their health are expected to have better mental health scores. The codes for all independent variables are described in Table 5.

Smoking behaviour and drinking behaviour are also thought to be related to mental health. Smoking behaviour is measured by a variable which asks the respondents whether or not in their lifetime they have smoked "a total of 100 or more cigarettes (about 4 packs)" (Statistics Canada, 2011a). It is expected that there will be a difference, in terms of mental health, between those in the sample who have smoked more than 100 cigarettes and those who have not. Drinking behaviour is measured by the question which asks, "How often in the past 12 months, have you had 5 or more drinks on one occasion" (Statistics Canada, 2011a)? This variable is recoded into a dichotomous variable which distinguishes between those who have had five or more drinks on one occasion in the past year and those who have not. This measure can be

understood as an indicator of binge drinking (Miller, Naimi, et al., 2007; Naimi, Nelson, et al., 2009). Like the smoking measure, this variable is a rough indicator, as alcohol consumption and its effects can vary highly from person to person. For many people, it is unproblematic to have five drinks on one occasion.

Participation in social activities is a ratio level variable which uses eight questions that ask about the respondent's participation in social activities such as family/friendship activities, church or religious activities, sports or physical activities, educational and cultural activities, service clubs or fraternal organizations, neighbourhood/community/professional activities, volunteer or charity work, and any other recreational activity. The respondents answer whether they participate in each of these activities at least once a week, at least once a month, at least once a year or never (Statistics Canada, 2011a). The participation variable for this study is created by giving the respondents a score of three if they answer "at least once a week," a score of two if they answer "at least once a month" and so on. The scores on the eight questions are summed, which gives an indication of the respondent's frequency of participation in these activities. It is expected that a higher rate of participation will relate to better mental health scores.

Rate of physical activity is also a ratio level variable. It is a scale called The Physical Activity Scale for the Elderly (PASE) and was developed by the New England Research Institute to provide an overall assessment of physical activity in older persons (Statistics Canada, 2011b). It is based on 12 self-reported occupational, household, and

leisure activity items over the past seven days. Each of the activities are assigned a weight and the variable is calculated according to guidelines given by the NERI (Statistics Canada, 2011b). Higher values indicate higher levels of physical activity, and are expected to be related to better mental health scores.

3.4.4 Social Support

There are two variables in this study that give an indication of social support: emotional or information support and living arrangement status. Social support is thought to be related to health measures including mental health. In a study based on the 2005 cycle of the CCHS, Shields (2008) finds that nearly two-thirds of those who feel a very strong or somewhat strong sense of community belonging report excellent or very good general health, while 51 percent of those who feel a weak sense of belonging view their general health favourably. In terms of mental health, 81 percent of those who experience a very strong sense of community rate their mental health excellent or very good compared to only 64 percent among those who had a weak sense of community belonging (Shields, 2008). In this current study, emotional or information support is a ratio- level variable that is used as one indicator of social support. This variable uses a portion of the Medical Outcomes Study (MOS) Social Support Survey: Emotional or informational support. Emotional support is understood as "the expression of positive affect, empathetic understanding, and the encouragement of expressions of feelings" (Statistics Canada, 2011b, p. 146) while informational support is "the offering of advice, information, guidance or feedback" (Statistics Canada, 2011b, p. 146). A result of

empirical analysis indicated that emotional and informational support items should be scored together (Statistics Canada, 2011b, p. 146).

The rationale for using only this portion of the MOS Social Support Survey is because of its connection to high life satisfaction, which is a dependent variable in this study. In a report by the Canadian Population Health Initiative, those who stated that they "almost always" had available emotional support were twice as likely to also report high levels of life satisfaction compared to those who "not always" had emotional support (Canadian Institute for Health Information, 2009). The variable in this study uses eight questions related to whether the respondent has someone to listen and to advise them in a crisis, someone to give information and confide in and talk to, or someone who understands his/her problems. The respondents give an answer on a five-point scale which ranges from "none of the time" to "all of the time" and their answers are summed so that a higher score indicates more emotional and informational support (Statistics Canada, 2011b).

Living arrangement is also thought to be related to mental health. Those who are married report higher life satisfaction than those who are never-married, divorced/separated and widowed (Williams, 2003). Those who are married are also more likely to feel more connected to the community, along with those living with small children, who are slightly more likely to feel more connected to the community (Shields, 2008). Living arrangement is dealt with by combining two variables in this study: marital status and household size. Those who are married and living with someone else

are given the highest score, followed by those who are married and living alone. A lower score is given to those who are not married but who are living with someone else. The lowest score is given to those who are not married and living alone. The reason for combining the marital status and a dichotomous household size variable in this way is because while both were thought to be theoretically important, they were highly correlated with one another and needed to be changed in order to be used in regression analysis. This variable is an indicator of living arrangement status and it is expected that a higher score is related to better mental health scores.

3.4.5 Health-Related Measures

Health-related measures are also included in the analysis as it is likely that those who experience less stress and better physical health will also experience better mental health. Variables categorized under this theme include perceived life stress, self-perceived health, and instrumental and basic activities of daily living. Perceived life stress is included as people who experience high levels of stress, such as those that lack job security, work in part-time or temporary positions, or work long or irregular hours or shift work may experience negative health outcomes (Segall & Fries, 2011). Perceived life stress is measured by the question, "thinking about the amount of stress in your life, would you say that most days are: (not at all stressful, not very stressful, a bit stressful, or extremely stressful)?" (Statistics Canada, 2011a, p. 12).

A self-perceived health measure is also used. This question asks respondents to describe their health as excellent, very good, good, fair or poor. Global self-rated health

measures such as this one are often used in population health surveys. This is only a single-item measure of physical health, and it must be noted that health can mean different things to different people. When an individual assesses their own health, various factors come into play, such as health and functioning, characteristics and conditions related to individuals' heath behaviors and lifestyle, psychosocial and socioeconomic status, culture, social environment and genetic endowment (Shooshtari, Menec, et al., 2007). In addition, it has been found that "physical, mental, and social dimensions of health are not valued equally by everyone" (Shooshtari, et al., 2007, p. 540).

It has been shown, however, that "self-rated health has proven to be a useful proxy measure for clinically assessed health status" (Segall & Fries, 2011, p. 72), and that there is a "correlation between the self-rated health of older adults and more objective indicators such as physical functioning based on clinical assessments" (Segall & Fries, 2011, p. 72). There is a persistent relationship between self-rated health and physician assessments (LaRue, Bank, et al., 1979; Thorslund & Norstrom, 1993) and there is evidence that older adults' self-assessed health can be a strong predictor of mortality (Benyamini & Idler, 1999; Idler & Kasl, 1991; Kaplan, Barell, et al., 1988; Mossey & Shapiro, 1982; Rakowski, Fleishman, et al., 1993). In a meta-analysis by DeSalvo and colleagues (2005) utilizing community-based studies, a statistically significant relationship between worse global self-rated health and increased risk of death existed, even after covariates such as functional status, depression, and co-

morbidity were accounted for, irrespective of sex and country of origin. Self-rated health is therefore used as a health-related measure in this study.

A final health-related measure that is used is a ratio-level variable called Instrumental and Basic Activities of Daily Living. This is a variable that classifies respondents on a five-point scale from no impairment to total impairment based on 14 activities of daily living (Statistics Canada, 2011b). This instrument is developed from the activities of daily living component of the Older Americans' Resources and Services Multidimensional Functional Assessment Questionnaire and represents an indicator of functional status (Statistics Canada, 2011b). Higher values on this variable indicate greater functional impairment. An inverse relationship between this variable and mental health are expected. A summary of all independent variables is found in Table 5.

Table 5: Description of the independent variables

Variable Name	Variable Description
Immigrant Status	0=Canadian-born 1=Immigrant-born
Racialized Minority Status	0=Not a racialized minority 1=Racialized minority
Sex	0=Female 1=Male
Knows Other Language*	0=Does not know other language 1: Knows other language
Knowledge of English	0=Does not know English 1=Knows English
Knowledge of French	0=Does not know French 1=Knows French
Knowledge of Both Official Languages	0=Does not know both 1=Knows Both
Age	1=60-64 Years 2=65-69 Years 3=70-74 Years 4=75-79 Years 5=80-84 Years 6=85 and older
Population Density	0=Not living in a Census Metropolitan Area 1= Living in a CMA
Province: Manitoba*	0=Not living in Manitoba 1=Living in Manitoba
Province: Quebec	0=Not living in Quebec 1= Living in Quebec
Province: Ontario	0=Not living in Ontario 1= Living in Ontario
Province: Alberta	0=Not living in Alberta 1=Living in Alberta
Province: British Columbia	0=Not living in B.C. 1=Living in B.C.
Province: Maritime Provinces	0=Not living in Maritimes 1=Living in Maritimes
Socioeconomic Gradient Variables	
Difficulty Meeting Basic Expenses	0=No difficulty 1= Difficulty
	0=Other Education 1=Less than high

*Reference Variable

(Table 5 continued on next page.)

Table 5 (Continued): Description of the independent variables

Variable Name	Variable Description
High School Graduation	0=Other education 1= High school graduation
Some Postsecondary	0=Other Education 1= Some postsecondary
Postsecondary Graduation	0=Other Education 1= Graduated postsecondary
Nutritional Risk	0=Not at nutritional risk 1=High nutritional risk
Health Behaviour Variables	
Did Something to Improve Health (Past Year)	0= Did not do something 1=Did something to improve
Consultation with Health Professional	0=Did not consult 1=Consult
Alcohol Consumption	0=Did not have 5+ drinks on a single occasion (past year) 1= Had five+ drinks on a single occasion (past year)
Smoking	0=Did not smoke 100 or more cigarettes (lifetime) 1=Smoked 100 or more cigarettes (lifetime)
Frequency of Participation in Social Activities	Ratio: Higher score indicates more activity α=0.618
Physical Activity	Ratio: Higher score indicates more activity
Living Arrangement Status	0=Single and living alone 1=Single and living together 3=Married and living alone 4= Married and living together
Emotional or Information Support	Ratio
Perceived Life Stress	1=Not at all 2=Not very 3= A bit 4=Quite a bit 5=Extremely
	1=Excellent 2=Very good 3=Good

Source: Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada.

Several variables have been selected for bivariate analysis. Table 6 shows the results of selected bivariate relationships by immigrant status.

Table 6: Bivariate analysis of selected independent variables by immigrant status and sex, 2009, Weighted

	Females		Males		Total
	Immigrant	**Canadian**	**Immigrant**	**Canadian**	
Difficulty Meeting Basic Expenses* **					
No Difficulty	84.4%	88.9%	86.7%	92.0%	89.2%
Difficulty	15.6%	11.1%	13.3%	8.0%	10.8%
χ^2	6,733.9 (p<.001)		131,168.6 (p<.001)		
Nutritional Risk* **					
Not at high risk	63.6%	63.1%	74.4%	68.2%	66.4%
High Nutritional Risk	36.4%	36.9%	25.6%	31.8%	33.6%
χ^2	39.2 (p<.001)		7203.6(p<.001)		
Alcohol Consumption * **					
≥ 5 drinks on a single occasion (past year)	8.8%	13.3%	23.2%	37.1%	22.6%
Did not have ≥ 5 drinks on a single occasion	91.2%	86.7%	76.8%	62.9%	77.4%
χ^2	6,909.2(p<.001)		34,827.1(p<.001)		
Smoking * **					
Smoked ≥ 100 cigarettes (lifetime)	35.9%	55.4%	59.5%	71.6%	59.5%

(Table 6 continued on next page)

Table 6 (Continued): Bivariate analysis of selected independent variables by immigrant status and sex, 2009, Weighted

	Females		Males		Total
	Immigrant	Canadian	Immigrant	Canadian	
Highest Level of Education* **					
Less than high school	27.2%	30.2%	21.8%	29.6%	28.5%
High School Graduation	21.9%	19.6%	16.3%	14.6%	17.6%
Some postsecondary	5.3%	5.8%	2.8%	5.6%	5.3%
Graduated postsecondary	45.6%	44.5%	59.1%	50.2%	48.6%
χ^2	2,329.4(p<.001)		21,924(p<.001)		
N	467,030	1,637,954	544,611	1,467,388	4,116,983

Source: Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada.

***$p \leq .001$.

Difficulty meeting basic expenses and nutritional risk are indicators of socioeconomic gradient. In terms of difficulty meeting basic expenses, Canadian-born men fare the best with only 8 percent of them having difficulty meeting basic expenses. Eleven

percent of Canadian-born women have difficulty meeting basic expenses. Immigrant men and women, at 13.3 percent and 15.6 percent respectively, have the highest percentage among those who have difficulty meeting basic expenses.

While immigration status seems to play a larger role than sex in terms of meeting basic expenses, this does not seem to be as big of a factor when it comes to nutritional risk. On this variable, men, and in particular immigrant men, have the lowest percentage on high nutritional risk—25.6 percent. The percentage of Canadian-born men who experience high nutritional risk is 6.2 percent higher than immigrant men. Immigrant and Canadian-born women are more similar on this variable, as 36.4 percent of immigrant women experience high nutritional risk and 36.9 percent of Canadian-born women are at high nutritional risk. Overall, women fare worse than men on this variable.

A pattern emerges when variables that deal with alcohol consumption and smoking are examined. Canadian-born men have the highest percentage of those who binge drink on a single occasion in the past year at 37.1 percent, and they also score the highest among those who have smoked 100 or more cigarettes in a lifetime at 71.6 percent. Immigrant men have the second-highest percentage on both the alcohol and smoking variable, followed by Canadian-born women and then immigrant women. The average of Canadian-born women who have smoked 100 or more cigarettes in a lifetime is 55.4 percent. The rate for immigrant women is only 35.9 percent. If these alcohol

consumption and smoking behaviours are taken as indicators of health behaviours, then immigrant women have the healthiest behaviours, in terms of avoiding risky behaviours.

In terms of education, it seems that immigrants are more likely to have completed high school than their Canadian-born counterparts, likely a product of Canadian immigration policies, which reward immigrants for their education. Among women, 30.2 percent of Canadian-born women have not completed high school, compared to 27.2 percent of immigrant women. The percentages show even more disparity among men. While 29.6 percent of Canadian men have not graduated from high school, only 21.8 percent of immigrant men have not completed high school. Immigrant men are also well represented among those who have completed a postsecondary degree. Sixty percent of immigrant men have graduated from a postsecondary institution, compared to 50 percent of Canadian-born men. Canadian-born and immigrant women are more similar to each other in terms of postsecondary graduation, with 44.5 and 45.6 percent completion, respectively.

Summarizing these bivariate results, it seems that multivariate analyses may show some interesting results. For immigrant women, while they are among the worse off when it comes to socioeconomic gradient variables such as difficulty meeting basic expenses and nutritional risk, their health behaviours such as smoking and alcohol consumption show that this group trends toward healthier behaviours. Unfortunately, it is shown in the next chapters that immigrant women fare among the worst when looking at the two mental health variables, contrary to what one would predict,

especially when the literature on the 'healthy immigrant effect' is taken into account. Additionally, immigrant men fare worse than Canadian-born men on most measures when it comes to life satisfaction and difficulty meeting basic expenses. The way in which all chosen independent variables have an effect on life satisfaction and occurrence of a mood and/or anxiety condition will be explored in the next chapters using multivariate analysis techniques.

3.5 Description of Data Analysis Technique

The data analyses are performed on two main populations: the immigrant population and the Canadian-born population. Because it is expected that sex will be an influence on the other variables, the sample is further subdivided by sex for bivariate analyses for a total of four models for each dependent variable. Multivariate logistic regressions are performed on the two main populations for each of the dependent variables. Independent variables relating to demographics, socioeconomic gradient, health behaviours, social support, and health-related indicators are entered into logistic regression equations. Variables that were determined to correlate to a problematic extent had to be eliminated or combined into one variable. This was the case only for marital status and household size, which were combined (see section 3.4.4). The

equations from the logistic regressions give the odds probability of the dependent variables occurring as the values of the independent variables change.

Logistic regression is deemed appropriate because the dependent variables are dichotomous. It allows for the examination of the relationships between the independent and dependent variables while controlling for the effects of the other variables in the model. Like all regression analyses, it has its limitations in that it does not identify indirect and spurious effects. This should be taken into account when interpreting the results. When examining the results of the logistic regressions, independent variables with values lower than one decrease the probability of having a score of one on the dependent variables, and independent variables with values higher than one increase the probability of having a score of one on the dependent variables.

There are several other limitations of this study, and its use of quantitative data analysis. Because this research uses a large national sample, and reports on aggregate measures, it is taking a very broad approach. The experience of being a person who has immigrated in Canada, and furthermore, the experience of being an immigrant who experiences difficulties with regard to their mental health is complex and unique to every individual. Research such as this current project provides numerical descriptions based on a questionnaire that was limited in terms of the range of answers a respondent was able to provide. Using the aggregate descriptions provided by this dataset rather than a detailed narrative that may be provided by qualitative research, does not allow for richer, unrestrained accounts of human perception. This study,

which focuses on a large number of respondents in order to allow for more generalizations, could be enhanced by the use of more engaging qualitative analysis techniques. Unfortunately, this is not possible due to lack of time and resources.

The immigrant population in Canada is extremely diverse, and any study that combines all immigrants for purposes of comparison to non-immigrants must do so with an acknowledgment of the complex issues facing newcomers to Canada. For example, those who may have been forced to migrate because of unsafe conditions in their home countries may find themselves in a very different situation compared those who have come to Canada willingly. This research makes no distinction between refugees, family-class immigrants, and economic-class immigrants, or the countries from which people are coming. Obviously refugees have different health care needs than other classes of immigrants, however this study is not able to focus on the distinctions between these groups given the limitations of the dataset, as no versions of the CCHS include data on refugee status.

Because of the cross-sectional nature of the data used in this thesis, it is not possible to examine the settlement experiences—and the stress and health outcomes associated with those experiences—of the same people over time. A richer analysis of longitudinal data would bring even more insight into this research area.

There are other limitations that exist in all studies that are based on the analysis of existing statistics. The researcher who is utilizing existing statistics has no control over how the data are collected, or how missing data are managed. In addition, when

data are released to the public and to researchers desiring to use them for secondary analysis, some variables may be grouped into a lower level of measurement in order suppress identifying variables and to protect the confidentiality of the respondents. The above issues exist in this thesis, however the benefits of using data collected from a reputable, national government agency outweigh the weaknesses of this method of inquiry. Because Statistics Canada is required under the *Statistics Act* to collect, compile, analyze, abstract and publish statistical information of virtually all aspects of Canadian society (Statistics Canada, 2003), it provides access to a national sample and an array of variables that would otherwise be unattainable due to lack of time and resources.

In two chapters that follow, the next steps in the analysis are performed. At the bivariate level, crosstabulations are generated to examine the differences in the dependent variables among the immigrant and the Canadian-born, as well as the role that sex differences play. Sex is elaborated upon in further crosstabulations, as it is shown that statistically significant relationships exist between sex and some selected variables. The multivariate analysis consists of logistic regression analysis. These analyses are the focus of this research, and will allow the comparison of which independent variables significantly increase (or decrease) the odds of being more satisfied with life or experiencing a mood and/or anxiety condition. Separate logistic regressions are run for the Canadian-born and immigrant in order to examine whether or not the variables have the same effect in different populations. Odds ratios are reported, and odds ratios that are less than one are divided from one to create the

inverse, which is easier to compare with the odds ratios that are greater than one. The inverse is reported in the text (but not in the tables). For all logistic regressions, odds ratios that are 0.8 and lower, and 1.2 and higher are considered for discussion unless they are otherwise noteworthy.

Stepwise logistic regressions are also performed in order to discuss the relative importance of variables grouped according to theoretical considerations. For these analyses, a Pseudo-R^2 statistic is used to get an indication of the goodness-of-fit of the model. In ordinary least squares regression, the R^2 statistic represents the variation in the data accounted for by the model. It ranges from 0 to 1, and as it increases the fit of the model increases. R^2 cannot be appropriately used in logistic regression, and therefore statisticians have attempted to devise other R^2 statistics that can be used with logistic regression. For the most part, these attempts have not been fully successful, however they can be used as a rough indicator of model fit. The one that will be used in this study is called Nagelkerke R^2.

My research hypotheses are as follows:

H_1: Structural variables, such as those that relate to demographics and socioeconomic gradient, will have a greater effect on life satisfaction than variables that relate to health behaviours for both the immigrant and Canadian-born populations.

H_2: Structural variables, such as those that relate to demographics and socioeconomic gradient, will have a greater effect on presence of mood and/or anxiety conditions than variables that relate to health behaviours for both the immigrant and Canadian-born populations.

H_3 : Social support affects life satisfaction equally between immigrant and Canadian-born populations.

H_4 : Social support affects presence of mood and/or anxiety conditions equally between immigrant and Canadian-born populations.

H_5: Health-related measures and their influence on life satisfaction are similar for both immigrant and Canadian-born populations.

H_6 : Health-related measures and their influence on presence of mood and/or anxiety conditions are similar for both immigrant and Canadian-born populations.

In this chapter, details of the dataset, the operationalization of the variables, and methodology used in the analysis have been presented. The following two chapters outline the results of the analysis, with a discussion of the major findings.

Too old to dream.

Too old to flirt.

Too old to sit and dish the dirt.

Too old to drink.

Too old to pet.

Too old to boogie.

Not quite yet.

-Judith Viorst, “Status Report” (2010, p. 63)

Chapter Four: Life Satisfaction

There is no age too old to enjoy life. However, not everyone experiences life satisfaction to the same extent. The statistical model predicting life satisfaction attempts to find patterns within the population involving variables relating to this dependent variable. This chapter contains a discussion of the results for the model

predicting life satisfaction, while the second dependent variable, presence of mood/anxiety conditions is discussed in Chapter Five. The first sections of this chapter describe the bivariate and multivariate analyses. The chapter ends with a discussion of the main findings, as they relate to structuration theory.

4.1 Results of the Bivariate Analysis

Life satisfaction is one of the two main dependent variables in this study. The extent to which people positively evaluate their life as a whole is an essential aspect of quality of life. Table 7 shows that there is a statistically significant effect between life satisfaction and the main comparison groups.

Table 7: Cross-tabulations and chi-square tests of significance for immigrant status and sex, for life satisfaction, 2009, Weighted

	Females		Males		Total
	Immigrant	Canadian	Immigrant	Canadian	
Life Satisfaction ***					
More Satisfied with Life	89.6%	91.3%	90.7%	92.8%	91.6%
Less Satisfied with Life	10.4%	8.7%	9.3%	7.2%	8.4%
χ^2	1,305.68(p<.001)		2,549.48(p<.001)		

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada. ***$p \leq .001$

Overall, 8.4 percent of the population is less satisfied with life. Immigrants are slightly less satisfied with life than Canadian-born. Nine percent of immigrant men are less satisfied with life compared to only seven percent of Canadian-born men. Women seem to be less satisfied than their male counterparts. Ten percent of immigrant women are less satisfied with life compared to 8.7 percent of Canadian-born women. The differences are statistically significant for all four groups, meaning women are less satisfied than men, and immigrants are less satisfied than the Canadian-born.

4.2 Results of the Multivariate Analysis

The next part of the analysis uses logistic regression to examine life satisfaction. Demographic, socioeconomic gradient, health behaviour, social support, and health-related independent variables are used to construct a model that predicts factors that are related to the dependent variable, life satisfaction.

4.2.1 Women and Life Satisfaction

The first analysis involves females and life satisfaction. Among the demographic variables, most have a negative effect on life satisfaction. An exception is racialized minority status, which decreases odds of satisfaction only for Canadian-born women (OR=2.5). Living in a CMA has converse effects for Canadian-born and immigrant women, as it is slightly beneficial for Canadian-born women (OR=1.2) and more detrimental for immigrant women (OR=1.8). All of the language variables have detrimental effects on life satisfaction for immigrant women, indicating that those who

know neither official language are actually more satisfied with life,—an effect I discuss at the end of the chapter. Knowledge of both official languages has a large negative effect for immigrant women, as it leads to a sevenfold (OR=7.3) decrease in the odds of being satisfied with life.

None of the demographic variables dealing with province of residence have a beneficial effect in terms of life satisfaction. Canadian-born women are least satisfied in Ontario, which is associated with a more than twofold decrease (OR=2.7) in life satisfaction. Immigrant women are least satisfied in the Maritimes. There is a sixfold decrease in chances of being satisfied for immigrant women living in the Maritimes. It is also the case that living in a CMA has a detrimental effect on life satisfaction for immigrant women (OR=1.8).

Among the socioeconomic gradient variables, there are only two education variables which meet the threshold to be considered for discussion. Being a high school graduate for immigrant women (OR=1.3), and being a postsecondary graduate for Canadian-born women (OR=1.5) both decrease the chances of being more satisfied with life. It is clear that nutritional risk is a risk factor for having lower life satisfaction, as it decreases the odds of being satisfied with life for both Canadian-born by one and a half times (OR=1.5) and immigrant women by nearly three times (OR=2.8). Difficulty meeting expenses decreases the odds of life satisfaction among Canadian-born women (OR=1.6), and increases it for immigrant women by 1.2 times.

In terms of health behaviour variables, the three that are most important are consultation with a health care professional, smoking behaviour, and alcohol consumption. Consultation with a health care professional is beneficial for both Canadian-born and immigrant women, however the payoff is much larger for immigrant women, for whom meeting with a health care professional increases odds of being satisfied with life by seven times.

The effects of the smoking and alcohol consumption variables are somewhat surprising. These variables have positive effects on life satisfaction for women, with the exception of smoking for Canadian-women, which reduces satisfaction by 1.3 times (OR=1.3). For immigrant women, smoking behaviour increases the odds of being satisfied with life by 1.3 times, and binge drinking increases odds of satisfaction for this group by 1.2. For Canadian-born women, the beneficial effect of binge drinking is even larger at 1.9 times.

All social support variables contribute positively to life satisfaction for all women regardless of immigrant status. Living arrangement status is noteworthy, as it increases odds of being satisfied with life for both groups by about 1.3 times.

Among health-related variables, all variables have a noteworthy effect on life satisfaction, except for instrumental activities (the extent to which one is able to perform the activities of daily life) for immigrant women, which has a very small effect. Predictably, stress decreases life satisfaction for both Canadian-born (OR=1.8) and immigrant women (OR=2.2), while self-perceived health increases the odds of being

satisfied with life, 1.8 times and 1.6 times for Canadian-born and immigrant women, respectively. For Canadian-born women, functional impairment decreases the odds of being satisfied with life (OR=1.5). It is clear that mental health, as measured by life satisfaction, is correlated with physical health. The results of this model are shown in Table 8.

Table 8: Logistic regression models predicting life satisfaction for females, 2009, Weighted

	Canadian-born		Immigrant	
	SE	OR	SE	OR
Demographic Variables				
Racialized minority	0.016	0.393***	0.015	1.138***
Knows English	1660.332	0	0.033	0.316***
Knows French	1660.332	0	0.048	0.392***
Knows both official languages	1660.332	0	0.036	0.137***
Age	0.003	1.283***	0.004	1.172***
CMA	0.007	1.157***	0.019	0.564***
Quebec	0.019	0.835***	0.048	0.552***
Ontario	0.014	0.378***	0.043	0.407***
Alberta	0.016	0.429***	0.051	0.453***
British Columbia	0.016	0.765***	0.045	0.347***
Maritimes	0.018	0.669***	0.067	0.167***
Socioeconomic Gradient Variables				
Difficulty meeting expenses	0.008	0.633***	0.015	1.202***
High school graduate	0.01	0.83***	0.017	0.744***
Some postsecondary	0.016	0.929***	0.027	0.964
Postsecondary graduate	0.008	0.669***	0.015	1.163***
Nutritional risk	0.007	0.653***	0.012	0.358***

(Table 8 continued on next page.)

Table 8 (continued): Logistic regression models predicting life satisfaction for females, 2009, Weighted

	Canadian-born		Immigrant	
	SE	OR	SE	OR
Social Support Variables				
Emotional support	0	1.063***	0.001	1.065***
Living arrangement	0.002	1.266***	0.005	1.315***
Health-Related Variables				
Self-perceived stress	0.003	0.568***	0.006	0.453***
Self-perceived health	0.004	1.772***	0.006	1.647***
Instrumental Activities	0.006	0.648***	0.011	1.043***
N	1,637,954		467,030	
Model Chi-Square	7690.33 (<.001)		5474.08(<.001)	

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada. ***$p \leq .001$ **$p \leq .01$ *$p \leq .05$.

4.2.2 Men and Life Satisfaction

For men, there are several demographic variables influencing life satisfaction. Knowledge of English (OR=5.6), French (OR=2.2), and both official languages (OR=2.5) decrease odds of life satisfaction for Canadian-born men compared to those not knowing either official language. Knowledge of both official languages decreases chances of being more satisfied with life for immigrant men as well (OR=1.3), however, knowledge of French increases life satisfaction nearly twofold. Again, there is an overall pattern that not having knowledge of either official language is beneficial in terms of life satisfaction, with the exception of immigrant, male French speakers (OR=1.9).

While age is beneficial for life satisfaction for both Canadian-born and immigrant men, it is larger for Canadian-born men (OR=1.4). The provinces where Canadian-born men are less likely to be satisfied with life are Quebec (OR=1.4), British Columbia (OR=1.8), and the Maritimes (OR=1.3). For immigrant men, the worst provinces in terms of life satisfaction are Quebec (OR=4.9), Ontario (OR=2.9), British Columbia (OR=3.5) and Alberta (OR=1.74). For Quebec, Ontario, and British Columbia, the odds ratios are much larger compared to any of the odds ratios for Canadian-born men. Living in a CMA is slightly worse for Canadian-born men (OR=1.4) than immigrant men (OR=1.) in terms of life satisfaction.

There are interesting results when it comes to socioeconomic gradient variables that influence life satisfaction. Like as for women, nutritional risk is detrimental in terms of life satisfaction for both Canadian-born (OR=1.3) and immigrant men (OR=1.8). It is crucial for communities to ensure that the nutritional needs of older Canadians are

being met. However, unlike women, education has a beneficial effect on satisfaction for both Canadian-born and immigrant men for all education variables. While difficulty meeting expenses is associated with a more-than threefold (OR=3.4) decrease in the odds of being satisfied with life for Canadian-born men, the same is not true for immigrant men, for whom the effect is very close to one.

The only variable that is noteworthy in terms of health behaviour variables for Canadian-born men is smoking behaviour, which increases the chances of being satisfied with life by 1.3 times. Smoking decreases the chances of being satisfied for immigrant men (OR=1.8), while binge drinking increases the chances of being satisfied with life by 1.4 times. Consultation with a health care professional is detrimental for life satisfaction among immigrant men (OR=1.4), which is not the same finding as that for immigrant women, who benefited from having consultation with a health care professional in the past year.

The only social support variable that is noteworthy for men in the model predicting life satisfaction is living arrangement status for Canadian-born men (OR=1.4). Social support does not seem as important as other groups of variables in predicting mental health outcomes in this model.

Nearly all the health-related variables have large effects on life satisfaction for men. Stress decreases chances of being satisfied with life for both Canadian-born (OR=1.7) and immigrant men (OR=1.9). Self-perceived health increases chances of being more satisfied by 1.6 times for Canadian-born men, and by 1.4 for immigrant-born men.

The loss of function in the ability to do daily activities has a larger effect for Canadian men (OR=1.8) than for immigrant men (OR=1.5). The results for this model are shown in Table 9.

Table 9: Logistic regression models predicting life satisfaction for males, 2009, Weighted

	Canadian-born		Immigrant	
	SE	OR	SE	OR
Demographic Variables				
Racialized minority	0.022	0.914***	0.013	0.805***
Knows English	0.069	0.18***	0.024	0.935***
Knows French	0.072	0.456***	0.038	1.917***
Knows both official languages	0.07	0.405***	0.027	0.754***
Age	0.003	1.369***	0.004	1.104***
CMA	0.008	0.741***	0.017	0.977
Quebec	0.023	0.517***	0.048	0.204***
Ontario	0.015	0.894***	0.045	0.344***
Alberta	0.019	0.939***	0.049	0.576***
British Columbia	0.017	0.569***	0.046	0.289***
Maritimes	0.018	0.78***	0.092	0.933
Socioeconomic Gradient Variables				
Difficulty meeting expenses	0.009	0.293***	0.015	0.968*
High school graduate	0.012	1.357***	0.017	1.17***
Some postsecondary	0.017	1.012	0.037	2.649***
Postsecondary graduate	0.009	1.21***	0.013	1.167***
Nutritional risk	0.008	0.756***	0.012	0.733***

(Table 9 continued on next page.)

Table 9 (continued): Logistic regression models predicting life satisfaction for males, 2009, Weighted

	Canadian-born		Immigrant	
	SE	OR	SE	OR
Social Support Variables				
Emotional support	0	1.033***	0.001	1.031***
Living arrangement	0.003	1.37***	0.005	1.095***
Health-Related Variables				
Self-perceived stress	0.004	0.602***	0.005	0.525***
Self-perceived health	0.004	1.644***	0.006	1.482***
Instrumental Activities	0.007	0.571***	0.01	0.661***
N	1,467,388		544,611	
Model Chi-Square	5326.4(<.001)		3501.7 (<.001)	

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada. ***$p \leq .001$ **$p \leq .01$ *$p \leq .05$.

4.3 Stepwise Logistic Regressions and Theoretical Discussions

The following tables present the Nagelkerke Pseudo-R^2 for stepwise logistic regression models predicting life satisfaction. The purpose of these analyses is to look at the different groups of variables (demographic, socioeconomic gradient, health behaviour, social support, and health-related) to see how they impact model fit. Nagelkerke Pseudo-R^2 is a very rough measure of model fit, though it is often cited when logistic regression is used in the social sciences (Auerhahn, 2012; Veenstra, 2011).

The first stepwise logistic regression shows models predicting life satisfaction for females. In the first step, demographic variables are entered. The Nagelkerke Pseudo-R^2 statistic indicates that the model accounts for 4.5 percent of the variance of being more satisfied with life for Canadian-born women and 3.9 percent for immigrant women. As more groups of variables are added, more of the variance is accounted for. Once all the variables are incorporated, about 34 percent of the variance is accounted for by the model. For both Canadian-born and immigrant women, the variables that account for the most change in Pseudo-R^2 are variables related to socioeconomic gradient and health-related variables. When social support variables are added to the model, the Pseudo-R^2 change is 0.051 for Canadian-born women and 0.074 for immigrant women. Results of this analysis are shown in Table 10.

Table 10: Model fit of stepwise logistic regression models predicting life satisfaction for females, 2009, Weighted

	Canadian-born			Immigrant		
Type of Variable	Pseudo-R^2	Pseudo-R^2 Change	Step χ^2	Pseudo-R^2	Pseudo-R^2 Change	Step χ^2
Demographic	0.045	-	33,626 (p<.001)	0.039	-	8,864 (p<.001)
Socioeconomic Gradient	0.136	0.091	69,183 (p<.001)	0.132	0.093	22,225 (p<.001)

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada.

Overall, the models are quite similar when Canadian-born and immigrants are compared. The groups that contribute the most to the models, socioeconomic gradient and health-related, are the same for each group. It makes sense that measures of physical health are related to mental health, when measured using life satisfaction. Socioeconomic gradient matters when it comes to life satisfaction.

The groups of variables that show less Pseudo-R^2 change, health behaviour variables and social support variables, are especially noteworthy as they are different for Canadian-born and immigrant women. For immigrant women, health behaviours contribute less to the model compared to Canadian women, and social support is more important. So, while social support and health behaviours are factors for everyone when looking to improve life satisfaction, it may be especially beneficial for immigrant women to seek out social support. This is in line with other research in this area (Vohra

& Adair, 2000; Xu and McDonald, 2010). In terms of policy applications, it may be wise for governments and health workers to initiate programs which help network immigrant women with other people, and help foster meaningful relationships.

When it comes to men, the model predicting life satisfaction seems to fit better for the Canadian-born than for immigrants. When all the groups of variables are added into the equation, 30.1 percent of the variance is accounted for by the model for Canadian-born men, compared to 24.8 percent for immigrant men. While health behaviour and health-related variables contribute more to Pseudo-R^2 change when added to the model for immigrant men compared to Canadian-born men, social support is less impactful for immigrant men.

However the biggest factor in the difference in model fit between Canadian-born men and immigrant men are the socioeconomic gradient variables. While these variables contribute to a Pseudo-R^2 change of 0.12 for Canadian men, there is only a change of 0.041 for their immigrant counterparts. Economic factors are less important for immigrant men than for Canadian men. For immigrant men, fostering healthy behaviours, such as the reduction of smoking, and the increasing of social and physical activity, may be more beneficial. The reduction of economic inequalities, like making it easier for people to meet their basic expenses and reduce nutritional risk may be more pertinent for Canadian-born men, albeit more difficult to achieve as this requires change to Canada's social structure. The results for this model are shown in Table 11.

Table 11: Model fit of stepwise logistic regression models predicting life satisfaction for males, 2009, Weighted

	Canadian-born			Immigrant		
Type of Variable	Pseudo-R^2	Pseudo-R^2 Change	Step χ^2	Pseudo-R^2	Pseudo-R^2 Change	Step χ^2
Demographic	0.026	-	15176 (p<.001)	0.015	-	3720 (p<.001)
Socioeconomic Gradient	0.147	0.121	74,443 (p<.001)	0.056	0.041	10,638 (p<.001)
Health Behaviour	0.185	0.038	24,427 (p<.001)	0.111	0.055	14,243 (p<.001)
Social Support	0.218	0.033	21,226 (p<.001)	0.125	0.014	3882 (p<.001)
Health-Related	0.301	0.083	54,623 (p<.001)	0.248	0.123	33778 (p<.001)

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada.

4.4 Discussion

4.4.1 Demographic Variables

Racialized minority status has a noteworthy effect for women, but not for men. For immigrant women it has a small and beneficial effect in terms of life satisfaction, but for Canadian-born women, it has a detrimental effect. These findings were not expected, as it would be reasonable to expect that racialized minority status would decrease life satisfaction for both Canadian-born and immigrant women in Canada where racism is pervasive. Studies have described a “triple jeopardy” for immigrant, racialized minority women who not only face a disadvantage of status and gender, but also racism (Miedema & Tatsoglou, 2000). Nyakbwa and Harvey (1990), who write about the experiences of black immigrant women in Canada write, "their social networks are deficient, their life satisfaction is low, and they suffer from emotional isolation" (Nyakbwa and Harvey 1990, p. 138). However, the findings in this research give some other more encouraging indications in terms of life satisfaction for immigrant women.

When it comes to official language knowledge, there are also some counterintuitive results. Among statistically significant results, knowledge of Canada’s official languages is detrimental for immigrant women and immigrant men, with the exception of knowledge of French only for men. The effect of official language knowledge on mental health is not a heavily-researched topic, however, there are other studies which show that people who have no knowledge of official languages score better on mental health variables (Cairney, et al., 2008). One possible explanation for

this is that when people integrate into a relatively new culture, they may also experience more dissonance between their home country's values and the new. This is seen to be more of an effect for women (Dalgard & Thapa, 2007) and may be the case in this research if language is taken as a measure of integration and happiness.

When it comes to province of residence, the largest negative effect is living in the Maritimes for immigrant women, for whom living in the region seems to have an exceptionally detrimental effect on life satisfaction. Because the Maritimes are also the area in which there are the fewest immigrants in Canada (excluding the North, which was not included in this study), perhaps this has to do with the social supports and programs that are available for immigrants in this area. However immigrant women are also less satisfied in CMAs which indicates that immigrants are not necessarily happier where there are plenty of other immigrants. Perhaps there is something else going on in the Maritimes. Djao and Ng (1987) argue that for immigrant women, isolation is structurally created by the organization of neighbourhoods, the nature of housework, the climate, gender segregation in the labour market, and government policies. While there is much evidence that immigrant women in the Maritimes are involved in their communities and benefit from this involvement (Miedema & Tatsoglou, 2000), more research needs to be done to explore the experience of immigrant women in the Maritimes, and what might be done to improve quality of life outcomes.

Living in the Maritimes does not seem to have the same detrimental effect on life satisfaction on men as it does for women. In fact, it is the provinces where

immigrants tend to be more clustered together where immigrant men are less satisfied. There have been reports that immigrants who live in ethnic enclaves have a more difficult time adapting to Canada's economy, and that too much exposure to one's group can reduce the accumulation of skills that are specific to Canada's labour market and hinder official language acquisition, resulting in economic penalties (O'Neil, 2012). It is possible that these factors are influencing life satisfaction among immigrants.

4.4.2 Socioeconomic Gradient Variables

For women, the findings on difficulty meeting expenses are counterintuitive with regard to the socioeconomic gradient in health, as having difficulty meeting expenses increases life satisfaction. For Canadian-born men and women, difficulty meeting expenses lowers life satisfaction, as expected, but for immigrant men, the effect is negligible. The research on subjective wellbeing and income does shed some light on these counterintuitive results. In a literature review on the topic, Danier and Danier (2002) find that while there are large correlations between subjective wellbeing and the wealth of nations, there are smaller correlations within nations. Economic growth in developed societies in last decades is not matched by growth in subjective wellbeing(Diener & Biswas-Diener, 2002). Income seems to enhance subjective wellbeing to the point where one's basic needs are met, and at that point it is the individual's material desires that affect the relationship between income and subjective wellbeing. It is possible that newcomers to Canada have different expectations than the Canadian-born when it

comes to being satisfied with what they can afford. This may be why the variable difficulty meeting expenses has a different effect for Canadian-born and immigrants.

The education variables also do not show a predictable relationship with life satisfaction, however this is not surprising as education is not seen to have a consistently linear, positive relationship with mental health outcomes (Talpade & Talpade, 2011). Overall, the education variables seem to disadvantage women in terms of life satisfaction while both Canadian-born and immigrant men seem to benefit from education such as graduating high school and participating in postsecondary studies. It is possible that while men are seeing payoffs for their education, the same is not happening for women. Perhaps women who have high school education or more have higher expectations which may not be being met, or that they are having difficulty with having their education recognized. This is a meaningful finding in terms of the satisfaction that men and women may derive from educational gains.

4.4.3 Health Behaviour Variables

Few of the health behavior variables were especially noteworthy. One very large effect was found with regard to consultation with a health care professional and immigrant women, who were seven times more likely to be satisfied with life had they consulted with a healthcare professional in the past year. Canadian women also benefitted but not to the same extent, and immigrant men saw their life satisfaction decrease if they consulted with a health care professional in the past year. This suggests that there would be a large payoff in terms of life satisfaction if governments and communities

were to create environments where immigrant women and health care professionals connect.

More surprising results were those for smoking and alcohol consumption, which actually increased life satisfaction for some groups. Why would it be that smoking more than 100 cigarettes in a lifetime and binge drinking in the past year can have beneficial effects in terms of life satisfaction in some groups? There is some indication that engaging in physically unhealthy behaviours can have protective mental health effects to some extent (Jackson, Knight, et al., 2010). This may be a result of the hormones that are affected when smoking and drinking alcohol. Smoking may increase production of hormones that are necessary to deal with stress, and drinking to relieve stress may be a method of coping for some people, especially if they have a dysfunctional hypothalamo-pituitary-adrenocortical system, which affects hormones (Direk, Newson, et al., 2011; Sillaber & Henniger, 2004). It may also be the case that because smoking and binge drinking are often done in groups, there may be some sort of combined effect that has to do with social support. The relationships between these unhealthy behaviours, life satisfaction, and stress are not well understood, and could be pursued in further research. However, to the extent that these behaviours may eventually lead to morbidity and mortality, it is reasonable to say that they do not contribute to life satisfaction in the long-term (Jackson, et al., 2010). It is possible that the relationship in this research is spurious, and the direction of the relationship between risky behaviours and life satisfaction is not known. More research needs to be done on the relationships between stress, risky behaviours, and life satisfaction.

4.3.4 Social Support Variables

All social support variables contributed positively to life satisfaction. Emotional support effects were not large enough to be noteworthy, however living arrangement status had more prominent effects for Canadian-born men, and both groups of women. It is clear from these results that fostering social support among all communities would be beneficial, and that supporting family members to live together would be beneficial in terms of life satisfaction, especially when it comes to an aging population who sometimes face leaving their homes and families to live in long-term care facilities.

4.4.5 Health Related Variables

Health-related variables are overwhelmingly related to life satisfaction (Al-Windi, 2005; Fernandez-Ballesteros, et al., 2001; Lowenstein & Katz, 2005). People who perceive more stress are less likely to be satisfied with life, and greater self-perceived health is linked to greater life satisfaction(Canadian Institute for Health Information, 2009). Loss of function when it comes to everyday activities is related to decreased life satisfaction. These results are not surprising and confirm that physical health is related to mental health.

In terms of life satisfaction, factors that influence the mental health of Canadians—Canadian-born and immigrant, men and women—are multifaceted. It is difficult to pinpoint variables that are more important because they all contribute to the models in different ways. Structuration theory aids this kind of research, as it facilitates

the logical grouping of variables into ones that demonstrate structure and agency. For women, it is shown that health behaviour variables are slightly more influential for the Canadian-born than they are for immigrants, and for men, the opposite is true-- health behavior variables are more influential for immigrants. Structuration theory facilitates the organization of complicated variables in order to see which ones make the greatest impact. In the following chapter, the structural and behavioural variables that are expected to be related to presence of a mood and/or anxiety condition are explored.

When I lost my vision

When I became blind

The shock of it exploded in my mind

And left a smokey haze behind

Beclouding intellect and thought

-Shura Saul, "The Haze Begins to Clear," (1974, p. 89)

Chapter Five: Mood and/or Anxiety Conditions

This chapter contains a discussion of the results for the second dependent variable, presence of mood and/or anxiety conditions. Conditions such as depression can affect quality of life in that depressed individuals tend to have quality of life deficits that are directly attributable to the mood disturbance (Berlim & Fleck, 2007). Investigating the extent to which demographic, socioeconomic gradient, health behaviour, social support and health-related variables affect such conditions contributes to better understanding

the factors that influence quality of life in our society. The first two sections describe the bivariate and multivariate analyses. The chapter ends with a discussion of the main findings, as they relate to structuration theory and research on integration.

5.1 Results of the Bivariate Analysis

Table 12 presents the results of the bivariate analysis of sex and immigrant status on presence of mood and/or anxiety conditions.

Table 12: Cross-tabulations and chi-square tests of significance for immigrant status and sex, for presence of mood and/or anxiety conditions, 2009, Weighted

	Females		Males		Total
	Immigrant	Canadian	Immigrant	Canadian	
Mood/Anxiety Condition					
No	90.5%	90.5%	95.7%***	94%***	92.4%***
Yes	9.5%	9.5%	4.3%***	6%***	7.6%***
χ^2	2.2(p<.069)		2,202.4 (<.001)		
N	467,030	1,637,954	544,611	1,467,388	4,116,983

Source: Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada. ***$p \leq .001$.

From these results, it is shown that men tend to fare better than women in terms of mood and/or anxiety conditions, but immigrants are less likely than the Canadian-born to experience these conditions. Six percent of Canadian-born men experience a mood/anxiety condition, versus only 4.3 percent of immigrant men. For women, immigrant status has no effect on mood and/or anxiety conditions. The same percentage of Canadian-born and immigrant women (9.5 percent) experience a mood/anxiety condition.

5.2 Results of the Multivariate Analysis

5.2.1 Women and Mood and/or Anxiety Conditions

The results of the demographic variables are discussed first. For immigrant women, being a racialized minority is protective in that it decreases the chances of experiencing a mood and/or anxiety condition twofold (OR=2.4). Racialized minority status has a very small positive effect on experiencing a mood and/or anxiety condition for Canadian-born women (OR=1.1) meaning that racialized women are slightly more likely to experience mood and/or anxiety conditions than are white women.

While language variables decrease the chances of experiencing a mood/anxiety condition for Canadian-born women, in that it is better to have knowledge of one or both of Canada's official languages than to not know either, this is not the case for immigrant women. For immigrant women, both knowledge of English (OR=2.1) and

knowledge of French (1.7) increase chances of experiencing a mood and/or anxiety condition, a finding that mirrors the results on the analysis of life satisfaction.

Another demographic variable which has a noteworthy effect on presence of a mood and/or anxiety condition is age. Increased age leads to a diminishing chance for mood and/or anxiety conditions for both Canadian-born (OR=1.4) and immigrant women (OR=1.4). Compared to living in Manitoba or Saskatchewan, all provinces decrease the chances of experience a mood/anxiety condition for Canadian-born women, especially Quebec (OR=1.4) and British Columbia (OR=1.4). For immigrant women, all provinces other than Manitoba and Saskatchewan increase chances of a condition, especially Quebec (OR=1.8), Ontario (OR=1.2), and Alberta (OR=1.7).

The socioeconomic gradient variables that are especially noteworthy are nutritional risk and education. Nutritional risk increases chances of experiencing a mood and/or anxiety condition for both Canadian-born and immigrant women by 1.9 times. Education in this population seems to be a protective force in terms of experiencing a mood and/or anxiety condition. Canadian-born women who have some post-secondary (OR=1.3) and immigrant women who have graduated high school (OR=3.6) or postsecondary education (OR=1.4) are less likely to experience a mood and/or anxiety condition.

The health behaviour variables do not have as large of effect in this model compared to the one predicting life satisfaction. The largest predictor of presence of a mood and/or anxiety condition is consultation with a health care professional for

Canadian-born women (OR=5.1). None of the other variables are noteworthy for Canadian-born women. For immigrant women, smoking behaviour (OR=1.5) and alcohol consumption (OR=3) increase likelihood of experiencing a mood and/or anxiety condition.

In terms of health behaviour variables, self-perceived stress is associated with a greater chance of experiencing a mood and/or anxiety condition for both Canadian-born (OR=1.6) and immigrant women (OR=1.3). Better self-perceived health is more important in terms of being protective for Canadian-born women (OR=1.4) than it is for immigrant women (OR=1.2), and loss of function in daily activities is detrimental only for the mental health of Canadian-born women (OR=1.5). The results of this model are shown in Table 13.

Table 13: Logistic regression models predicting mood/anxiety condition for females, 2009, Weighted

	Canadian-born		Immigrant	
	SE	OR	SE	OR
Demographic Variables				
Racialized minority	0.017	1.128***	0.018	0.419***
Knows English	0.089	0.05***	0.031	2.132***
Knows French	0.089	0.062***	0.043	1.655***
Knows both official languages	0.089	0.075***	0.036	0.901**
Age	0.003	0.706***	0.005	0.734***
CMA	0.006	0.894***	0.015	1.098***
Quebec	0.015	0.706***	0.04	1.753***
Ontario	0.011	0.804***	0.033	1.232***
Alberta	0.014	0.814***	0.04	1.656***
British Columbia	0.013	0.732***	0.035	1.085*
Maritimes	0.014	0.819	0.06	1.195**
Socioeconomic Gradient Variables				
Difficulty meeting expenses	0.008	1.074***	0.015	0.886***
High school graduate	0.009	0.994	0.019	0.275***
Some postsecondary	0.014	0.774***	0.024	1.049
Postsecondary graduate	0.007	0.885***	0.014	0.724***
Nutritional risk	0.006	1.866***	.012	1.844***
Health Behaviour				

(Table 13 continued on next page.)

Table 13 (continued): Logistic regression models predicting mood/anxiety condition with life for females, 2009, Weighted

	Canadian-born		Immigrant	
	SE	OR	SE	OR
Social Support Variables				
Emotional support	0	0.976***	0.001	0.948***
Living arrangement	0.002	0.978***	0.004	0.934***
Health-Related Variables				
Self-perceived stress	0.003	1.602***	0.006	1.256***
Self-perceived health	0.003	0.707***	0.006	0.841***
Instrumental Activities	0.006	1.511***	0.011	0.886***
N	1,637,954		467,030	
Model Chi-Square	7690.33 (<.001)		5474.08(<.001)	

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada.

***$p \leq .001$ **$p \leq .01$ *$p \leq .05$.

5.2.2 Men and Mood and/or Anxiety Conditions

The next model predicts presence of a mood and/or anxiety condition for men. Racialized minority status is a demographic variable that is protective for Canadian-born (OR=3.8) and immigrant (OR=1.4) men. In terms of language variables, knowing an official language decreases the chance of experiencing a mood and/or anxiety condition for both Canadian-born men and immigrant-born men. Age has a noteworthy effect only for Canadian-born men (OR=1.4) in that it decreases chances of experiencing a mood and/or anxiety condition, while living in a CMA is beneficial for immigrant men (OR=2.7), it increases the chances of experiencing a mood and/or anxiety condition for Canadian-born men by 1.2. The Maritimes tend to be a beneficial place to reside in that it is associated with a less chance of experiencing a mood and/or anxiety condition for both Canadian-born men (OR=1.3) and immigrant men (OR=4.8). The same is true for British Columbia and Alberta, but mainly for immigrant men. In fact, living in Alberta decreases the odds of experiencing a mood and/or anxiety condition twelvefold (OR=12.7) for immigrant men. It is interesting to note that Alberta is among the worst provinces to live when it comes to satisfaction with life for men, however it is beneficial when it comes to mood and/or anxiety conditions.

Nearly all the socioeconomic gradient variables are noteworthy for this model. Difficulty meeting basic expenses is associated with an increased chance of experiencing a mood and/or anxiety condition for both Canadian-born (OR=1.5) and immigrant men (OR=1.4). The same pattern is found for nutritional risk, which increases chances for Canadian men by 1.7 and for immigrant men by 1.9. The results for the education variables, however, are less unified. For Canadian men, being a high school graduate

decreases the chances of experiencing a mood and/or anxiety condition (OR=1.3). However, having a postsecondary degree increases the chances of experiencing a condition by 1.2. For immigrant men, having high school increases the chances of experiencing a mood and/or anxiety condition (OR=1.3), while having some postsecondary greatly decreases the chances (OR=32.3). However having a postsecondary degree increases the chances by more than twofold (OR=2.1).

In terms of health behaviour variables, consultation with a health care professional is predictive of experiencing a mood and/or anxiety condition for Canadian-born men. Again this is likely the result of the way in which the question was worded—the question asks about conditions which have been diagnosed by a health professional. Smoking behaviour reduces the chances of experiencing a mood and/or anxiety condition for Canadian-born men (OR=1.53) but the opposite is true for immigrant men, for whom both smoking behaviour (OR= 1.2) and binge drinking (OR=2.2) increase the odds of experiencing a mood and/or anxiety condition.

Social support variables are not noteworthy in this model, however all health-related variables are large enough to be considered important. Self-perceived stress increases odds of experience a mood and/or anxiety condition by 1.5 times for Canadian-born and immigrant men. The same is true for loss of function in instrumental activities which increases odds by 1.5 for Canadian-born and immigrant men. Self-perceived health decreases odds of experiencing a mood and/or anxiety condition for

both Canadian-born (OR=1.6) and immigrant (OR=1.5) men. Results for this model are shown in Table 14.

Table 14: Logistic regression models predicting mood/anxiety condition for males, 2009, Weighted

	Canadian-born		Immigrant	
	SE	OR	SE	OR
Demographic Variables				
Racialized minority	0.037	0.262***	0.02	0.739***
Knows English	0.06	0.349***	0.028	0.268***
Knows French	0.063	0.214***	271.7	0
Knows both official languages	0.061	0.465***	0.031	0.608***
Age	0.003	0.716***	0.006	1.048***
CMA	0.008	1.245***	0.02	0.371***
Quebec	0.02	0.857***	0.047	0.959
Ontario	0.015	1.084***	0.04	1.109**
Alberta	0.019	0.851***	0.073	0.079***
British Columbia	0.017	0.965*	0.043	0.575***
Maritimes	0.019	0.759***	0.094	0.209***
Socioeconomic Gradient Variables				
Difficulty meeting expenses	0.011	1.493***	0.02	1.41***
High school graduate	0.013	0.751***	0.028	1.302***
Some postsecondary	0.018	1.135***	0.222	0.031***
Postsecondary graduate	0.009	1.258***	0.021	2.166***
Nutritional risk	0.008	1.732***	0.016	1.884***
Health Behaviour Variables				
Did something to improve health	0.008	0.856***	0.015	1.079***
Consulted with health care professional	0.026	3.087***	299.1	29807723

(Table 14 continued on next page.)

Table 14 (Continued): Logistic regression models predicting mood/anxiety condition for males, 2009, Weighted

	Canadian-born		Immigrant	
	SE	OR	SE	OR
Social Support Variables				
Emotional support	0.001	0.987***	0.001	0.982***
Living arrangement	0.003	0.877***	0.007	1.013
Health-Related Variables				
Self-perceived stress	0.004	1.53***	0.007	1.521***
Self-perceived health	0.004	0.613***	0.008	0.676***
Instrumental Activities	0.008	1.478***	0.012	1.459***
N	1,467,388		544,611	
Model Chi-Square	4,606.1(<.001)		217,902(<.001)	

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada.

***$p \leq .001$ **$p \leq .01$ *$p \leq .05$.

5.3 Stepwise Logistic Regressions and Theoretical Discussions

When using logistic regression to predict presence of a mood/anxiety condition for women, the model fits slightly worse for Canadian-born women compared to immigrant women. When all the groups of variables are added to the model, the variables

account for 19.4 percent of the variance for Canadian-born women, and 22.5 percent of the variance for immigrant women. Socioeconomic gradient variables contribute to a relatively high Pseudo-R^2 change for Canadian-born and immigrant women, 6 percent and 7.3 percent, respectively. These variables have the most importance in the model. Health behaviour variables have greater impact on the model for immigrant women than for Canadian-born women, and the same goes for social support variables. However when it comes to health-related variables, the Pseudo-R^2 change is 7.2 percent when this block of variables is added for Canadian-born women, but only 1.2 percent for immigrant women. While working to improve outcomes in terms of nutritional risk and increasing high school graduation rates will benefit society in terms of presence of a mood and/or anxiety condition, it seems it may be especially beneficial to immigrant women to encourage healthy behaviours such as reducing smoking and binge drinking. Below, the results for this stepwise logistic regression are shown.

Table 15: Model fit of stepwise logistic regression models predicting mood/anxiety condition for females, 2009, Weighted

	Canadian-born			Immigrant		
Type of Variable	Pseudo-R^2	Pseudo-R^2 Change	Step χ^2	Pseudo-R^2	Pseudo-R^2 Change	Step χ^2
Demographic	0.028	-	21,432 (p<.001)	0.038	-	8,262 (p<.001)
Socioeconomic Gradient	0.088	0.06	47,604 (p<.001)	0.111	0.073	16,479 (p<.001)
Health Behaviour	0.112	0.024	18,745 (p<.001)	0.180	0.069	16,215 (p<.001)
Social Support	0.122	0.01	8,480 (p<.001)	0.213	0.033	7,782 (p<.001)
Health-Related	0.194	0.072	59,518 (p<.001)	0.225	0.012	2,905 (p<.001)

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada.

Looking at a stepwise logistic regression for the same dependent variable (presence of a mood and/ or anxiety condition) for men, it is again shown that the model fits slightly worse for Canadian-born men than for immigrant men. When all the blocks are incorporated, the model accounts for 18.7 percent of the variance in the Canadian-born model, and 24.1 percent for the immigrant model.

Demographic variables contribute the most to the model for immigrant men, however the next best group of variables is health-related variables for both Canadian-born and immigrant men. It makes sense that physical health be related to mental health. The next set of variables that contribute the most to the model are socioeconomic gradient variables for both groups. Decreasing social inequality in the form of reducing the amount of people who have difficulty meeting expenses or who are at nutritional risk is beneficial in terms of reducing chances of experiencing a mood and/or anxiety condition for men. Results of this analysis are shown in Table 16.

Table 16: Model fit of stepwise logistic regression models predicting mood/anxiety condition for males, 2009, Weighted

	Canadian-born			Immigrant		
Type of Variable	Pseudo-R^2	Pseudo-R^2 Change	Step χ^2	Pseudo-R^2	Pseudo-R^2 Change	Step χ^2
Demographic	0.030	-	16,346 (p<.001)	0.080	-	13108 (p<.001)
Socioeconomic Gradient	0.081	0.051	27,737 (p<.001)	0.13	0.05	8,382 (p<.001)
Health Behaviour	0.111	0.03	16,403 (p<.001)	0.166	0.036	6186 (p<.001)
Social Support	0.118	0.007	3,834 (p<.001)	0.171	0.005	788 (p<.001)
Health-Related	0.187	0.069	39,477 (p<.001)	0.241	0.07	12,136 (p<.001)

Source: Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)-Healthy Aging*: PUMF Individual File. Ottawa: Statistics Canada.

5.4 Discussion of the Multivariate Analysis

5.4.1 Demographic Variables

Racialized minority status does not have a noteworthy effect for Canadian-born women, however it decreases the odds of experiencing a mood and/or anxiety conditions among immigrant-born women. Canadian-born and immigrant racialized minority men are also less likely to experience mood and/or anxiety conditions. It is a possibility that racialized minority groups are less likely to be diagnosed with a condition. This supports other research. For example, Borowsky and colleagues (2000) find that the detection of a mental health problem by internists and family physicians was less frequent for Hispanics and African Americans in comparison with Caucasian Americans, and Skaer and colleagues (2000) found that rates of depression diagnosis were persistently higher among Caucasians than among ethnic minority patients between 1992 and 1997.

When it comes to language variables, knowledge of Canada's official languages decreases chances of experiencing mood and/or anxiety conditions for Canadian-born women and Canadian-born and immigrant men (with the exception of French for immigrant men, which is not statistically significant). However, for immigrant women, knowledge of English or knowledge of French increases the chances of experiencing mood and/or anxiety conditions (knowledge of both official languages does not have a noteworthy effect). These findings are interesting. Why would knowledge of official languages increase chances of experiencing a condition for immigrant women and not for other groups? Perhaps this gives more weight to the theory that some immigrant women may come to Canada with values and expectations that are not met by their

experience of Canadian life. If language is taken as an indicator of integration, it is possible that they experience pressure when it comes to conflicting worldviews, or maybe they are let down if they expected their status to improve upon coming to Canada and it has not. It may also be possible that women who can express themselves better in an official language are more likely to be diagnosed. It is difficult to speculate on why official language knowledge is a risk factor for experience of a mood and/or anxiety condition for immigrant women. This is indeed an area that would benefit from further research.

Looking at province of residence, while living in most provinces decrease odds of experiencing a mood and/or anxiety condition for Canadian-born women, Canadian-born men and immigrant men, all provinces increase odds for immigrant women. Quebec, Ontario, and Alberta increase the odds of experiencing a condition the most. Ontario and Alberta have among the highest proportion of immigrants in the study population (Statistics Canada, 2010), and in Quebec, over 75 percent of immigrants live in Montreal (Statistics Canada, 2009). It is clear that these areas have high concentrations of immigrants.

Part of the problem in these provinces may be margination. Pumariega and colleagues (2005) write that

> Margination is the opposite form of acculturation, with the immigrants embracing their culture of origin to the exclusion of the host culture, often including living in ethnic enclaves. Margination is common among older immigrants and exiles, given their more limited developmental and cognitive flexibility and resultant limitations in

> assimilating major changes such as a new language, new customs, and new values and belief systems, and their security in their established cultural practices. (p.587-586)

It is possible either that living in areas where there is a high concentration of immigrants leads to difficulties that affect the chances of experiencing a mood and/or anxiety condition for older immigrant women, or that people who are more susceptible to these conditions tend to live in ethnic enclaves. This pattern does not hold true for immigrant men. For men, living in a CMA decreases chances of experiencing mood and/or anxiety conditions for immigrant men, while the opposite is true for Canadian-born men. There tends to be a larger concentration of immigrants in CMAs. More research should be conducted on immigrant concentration and its effects on mental health.

5.4.2 Socioeconomic Gradient Variables

More socioeconomic gradient variables have a noteworthy effect for men than for women. One variable that affects all groups similarly is nutritional risk, which increases odds of experiencing mood and/or anxiety conditions. Strategies that help men and women meet their nutritional needs are very important, not only for physical health, but also mental health.

For women, education tends to decrease odds of experiencing a mood and/or anxiety condition. Increasing educational outcomes for women may have a beneficial effect on their chances of experiencing a mood and/ or anxiety condition. However, the outcomes for men are not so clear. Being a high school graduate increases the chances of experiencing mood and/or anxiety conditions for immigrant men, and both

immigrant and Canadian-born men are disadvantaged in terms of this dependent variable by having a postsecondary degree.

The association between having a postsecondary education and a greater chance of experiencing a mood and/or anxiety condition is congruent with other research in this area (Xu & McDonald, 2010). It would be interesting to examine the effect of education and discrimination experienced on the job, and the relationship of these variables to mental health indicators. Unfortunately this was not possible in this thesis. However, education and mental health is one area worthy of further research.

Having difficulty meeting expenses has a detrimental effect for both Canadian-born and immigrant men when it comes to experiencing mood and/or anxiety conditions, but it does not have a noteworthy effect for women. Perhaps traditional values which typically put pressure on men to be “providers” and “breadwinners” has a detrimental effect on the mental health of men.

5.4.3 Health Behaviour Variables

Few health behavior variables have noteworthy effects on the mood and/or anxiety conditions dependent variable. Smoking and drinking behaviours increase the chances of experiencing mood and/or anxiety conditions for both immigrant men and women. It is possible that reducing these behaviours can be beneficial for this group in terms of mental health. It may also be beneficial for governments to support programs that assist immigrants who may be dealing with problem smoking and drinking, because these may be signs they are dealing with mental health conditions as well. The

interactions between these variables and stress would be an interesting pursuit in further research, as studies have indicated that people in chronically stressful situations may engage in unhealthy behaviours to cope with stress (Jackson, et al., 2010).

Consultation with a health care professional is noteworthy only for Canadian-born men and women. Because the dependent variable requires consultation with a health care professional in order to be diagnosed, this is not surprising. However the fact that consultation is not noteworthy for immigrant women and not statistically significant for immigrant men is interesting. It is possible that immigrants are less likely to receive a diagnosis, or they may reject the medicalization of mental health conditions.

5.4.4 Social Support Variables

The social support variables are not noteworthy in these models. While having more social support tends to be somewhat beneficial in terms of life satisfaction, it does not seem protective in terms of reducing the chances of experiencing a mood and/or anxiety condition.

5.4.5 Health-Related Variables

Most health-related variables are noteworthy for both models. Across all groups, self-perceived stress increases likelihood of experiencing a mood and/or anxiety condition, while better self-perceived health decreases chances of experiencing a condition. A decrease in function when doing everyday activities increases the likelihood of

experiencing mood and/or anxiety conditions, except for immigrant women. For this group, the effect was in the opposite direction however it was not large enough to be considered noteworthy. For this group of variables, it would be most beneficial for both groups of women and men to find ways to mitigate the effect of stress in their lives, which may benefit them in terms of mental health. This is in line with other research which show associations between past-year stressful life events and increased risk of conditions such as depression, post-traumatic stress disorder, and anxiety disorders in some people (Caspi, K., et al., 2003; Mclaughlin, Conron, et al., 2010). These are not surprising results and support the association between physical and mental health.

It is clear that all groups of variables utilized in this thesis played a noteworthy role for at least one comparison group in the models predicting life satisfaction or presence of a mood and/or anxiety condition. Structuration theory provides a framework in which it made sense to include agency-level behaviour variables, and also structure-level variables such as the socioeconomic gradient in health. Many variables work together to create an overall picture of mental health in our society. This theoretical model aids our understanding of the role of structure and agency when it comes to the experience of mood and anxiety conditions. The next chapter will summarize the findings, limitations of this research, and give suggestions for further research.

When I am an old woman, I shall wear purple

with a red had that doesn't go, and doesn't suit me.

And I shall spend my pension on brandy and summer gloves

and satin sandals, and say we've no money for butter. . .

But maybe I ought to practice a little now?

So people who know me are not too shocked and surprised

When suddenly I am old, and start to wear purple.

-Jenny Joseph, (1992, p. 42)

Chapter Six: Conclusion

Everyone has a different vision of how they would like to spend their later years. By investigating variables that contribute to mental health and illness in an aging population, it may be possible to make changes as a society to enhance the mental health of this population. The main research question of this thesis is, what structural factors and health-protective behaviours of the aging population influence mental

health outcomes, specifically life satisfaction and mood and/or anxiety conditions? Six hypotheses are investigated in this thesis, and are restated below, along with information about whether or not they are confirmed by this research.

6.1 Discussion of Hypotheses

H_1: Structural variables, such as those that relate to demographics and socioeconomic gradient, will have a greater effect on life satisfaction than variables that relate to health behaviours for both the immigrant and Canadian-born populations.

There are more structural variables than behaviour-related variables due to the construction of the survey. Therefore, it is clear that structural variables bring more to the discussion. Even so, this hypothesis was only partially supported. For both men and women, health behaviour variables contributed to a greater pseudo R^2 change than demographic variables. So where you live, age, language and racialized minority status do not matter as much as behaviours one engages in to affect health. However, for women, socioeconomic gradient variables were more influential than demographic or health behaviour variables. Education, ability to meet basic expenses and ability to afford adequate nutrition are important factors that influence life satisfaction for women.

For men, it is not entirely the same story. While demographic variables hold even less influence than they do for women, socioeconomic gradient variables are much

more influential for Canadian-born men than for immigrant-born men. For immigrant men, health behaviour variables have a greater influence on life satisfaction than demographic and economic variables when they are considered separately.

H_2: Structural variables, such as those that relate to demographics and socioeconomic gradient, will have a greater effect on presence of mood and/or anxiety conditions than variables that relate to health behaviours for both the immigrant and Canadian-born populations.

Overall, fewer of the health behaviour variables have a noteworthy effect compared to demographic and socioeconomic gradient variables when it comes to presence of mood and/or anxiety conditions. For Canadian-born women, demographic and socioeconomic gradient variables contribute more to the model in terms of pseudo R^2 change than health behaviour variables. While socioeconomic gradient variables also have the largest pseudo R^2 change for immigrant women, health behaviour is larger than demographic variables. Health behaviour is more important for immigrant women than Canadian-born women in terms of presence of a mood and/or anxiety condition. For men, this hypothesis is supported, as both demographic and socioeconomic gradient variables contribute more to the model than health behaviour variables.

H_3 : Social support affects life satisfaction equally between immigrant and Canadian-born populations.

There are two social support variables: emotional support and living arrangement. While all social support variables had beneficial effects on life satisfaction for all groups, living arrangement was slightly more influential for immigrant women than Canadian-born women and more beneficial for Canadian-born men than immigrant men. It is

evident that social support as measured by living arrangement affected the groups to a different extent, and that there was a gender difference. This hypothesis is not supported.

H_4 : Social support affects presence of mood and/or anxiety conditions equally between immigrant and Canadian-born populations.

This hypothesis is supported as social support variables do not have noteworthy effects for both women and men.

H_5: Health-related measures and their influence on life satisfaction are similar for both immigrant and Canadian-born populations.

This hypothesis is accepted for women, however it is rejected for men as health-related variables are more influential for immigrants than they are for the Canadian-born.

H_6 : Health-related measures and their influence on presence of mood and/or anxiety conditions are similar for both immigrant and Canadian-born populations.

These variables contribute in a similar way to the model, except for immigrant women, as the pseudo R^2 change is much smaller for this group.

6.2 Contribution to Research

There are limitations to this study. Because it focuses on the secondary data analysis of a dataset created for other purposes, there are weaknesses when it comes to the variables that could be used. For example, it would have been better to have more variables that measured health behaviours, and variables that allowed for a richer analysis of the social determinants of health. Some of the variables that were related to

immigrant status were not sufficient for use in this research. For example, this version of the CCHS dataset did not allow for the comparison of different ethnic groups. In addition, the variable which dealt with length of time lived in Canada for immigrants was not used in this study, as the first grouped category covers a large range—0-19 years lived in Canada. This category is too large to examine immigrants who have been in Canada only a short time.

When respondents were unable to conduct the CCHS interview in an official language, the codebook states that each of the Statistics Canada Regional Offices recruited interviewers from a wide range of language competencies, and when necessary, cases were transferred to an interviewer with the appropriate language competency needed to complete the interview (Statistics Canada, 2010). However, it is not known how difficult it was for the respondents to conduct the interview in their language of choice, and because these were the interviews that were most likely to be conducted by phone, how that affects the results. Perhaps some of the counterintuitive findings with regard to official language knowledge can be attributed to this limitation.

Despite these limitations, this thesis does add to our knowledge on immigration and mental health. Much of the literature on immigration focuses on those who are relatively young and new arrivals to Canada. It is assumed that immigrants settle in Canada, find jobs, perhaps raise a family, and tend to have lives that are very similar to those who were born in Canada. The literature is lacking when it comes to asking, what

happens to immigrants as they age? It is even less common to ask whether or not they are happy, or the way in which mental conditions are experienced in an aging population.

6.3 Policy Implications

There are several ways in which this research could contribute to policies that would enhance the mental health of the Canadian population. Some beneficial policies, according to this research would be to target immigrant women, who are less likely to score positively on the life satisfaction variable, with programs that connect them with health care providers, as this would positively impact their life satisfaction. Improving economic outcomes would benefit most groups in terms of mental health, and especially policies that help people to meet their nutritional needs. Being at nutritional risk increases the odds of experiencing mood and/or anxiety conditions for all groups and decreases life satisfaction for all groups. Eliminating hunger in our population would go a long way to improving mental health outcomes. Immigrant men tend to see more influence of behaviour variables on life satisfaction, so programs that encourage healthy lifestyles among immigrant men may be beneficial. In particular, it is found that smoking and drinking increase chances of mood and/or anxiety conditions for immigrant men and women.

It was also found that social support contributes positively to life satisfaction for all groups that were investigated in this research. In terms of policy implications, this

can be seen as support for programs that help to keep older adults in their homes to benefit from being in a familiar environment alongside loved ones. One can imagine a situation in which older adults are supported by the community to remain in their homes by a deliberate attempt to connect them with needed resources. For example, a program could be developed in each community to try to ensure that everyone who wants to participate has access to what they need, whether that be snow clearing or grocery shopping services, assistance with personal hygiene, social activities, cooked meals, etc. A community where people of all ages are well-integrated and committed to helping one another achieve the best possible outcomes despite individual limitations and circumstances is one for which we should strive.

6.4 Future Research

This research brings to the front questions that would be useful to develop in future studies. For example, it would be interesting to explore relationships between language knowledge, measures of integration, and mental health of immigrants, as it is found in this research that some immigrant groups are disadvantaged in terms of life satisfaction and presence of a mood and/or anxiety condition when they have knowledge of official languages. Other relationships that could be explored are those between stress, dangerous behaviours and life satisfaction. Additionally, what is it about education that seems to decrease life satisfaction for women, and increase the odds of mood and anxiety conditions for men? In the future, a qualitative study involving in-depth interviews would be useful to explore these questions.

There is also some encouraging news in that racialized minority status is protective for immigrant women, and for immigrant and Canadian-born men in terms of experiencing mood and/or anxiety conditions. Does this have to do with the diagnosis of these conditions, or are there other factors involved? It would be interesting to observe rates of diagnoses compared among different ethnic groups as well.

Further questions that could be developed in further research are: What can be done to improve the satisfaction of life of immigrant women, particularly in the Maritime provinces? What accounts for the difference between immigrants and Canadian-born when it comes to difficulty meeting expenses and its effect on life satisfaction?

6.5 Concluding Thoughts

This research underlines the fact that there are many factors that influence mental health in Canada's aging population. Everyone in Canada requires access to information and services that allow our population to flourish as it ages. Through the framework of structuration theory, this thesis has shown that there are many things individuals can do on their own and collectively to improve mental health. For example, it is beneficial for most groups to have regular consultation with a health care professional. It is also important in terms of mental health to take action to reduce nutritional risk in Canada.

While many people embrace the process of aging, it can also be a process that is marked by uncertainty or fear. Changes in status or roles occur as a person retires from

a lifelong career, or as children move away from the home. People may feel like they are losing their independence or that they are demoted to a less privileged position in society. These are feelings that could be magnified by the process of migration. Migration is a key component of our modern world. About modernity, Giddens (1991a) writes,

> Modernity, it might be said, breaks down the protective framework of the small community and of tradition, replacing these with larger, impersonal organizations. The individual feels bereft and alone in a world in which she or he lacks the psychological supports and sense of security provided by more traditional settings. (Giddens, 1991a, pp. 33-34)

This brings to mind Giddens' concept of ontological security which is understood as a "basic trust" (Giddens, 1991a, p. 45) in the happenings of the world; that everyday life is coherent and is what it appears to be (Giddens, 1991a, p. 38). The absence of ontological security leads to anxiety and instability. Psychological wellbeing depends on "a protection against future threats and dangers which allows the individual to sustain hope and courage in the face of whatever debilitating circumstances she or he might later confront" (Giddens, 1991a, p. 39).

Immigrants are often people who have made a major life change, uprooting themselves from familiar or traditional social supports. Kinnavall (2004) writes that migration "is often characterized by a sense of powerlessness and dependence. . .mixed with an acute anxiety about their new circumstances and strong feelings of homelessness" (p.747). It is important that older immigrants especially, but also the Canadian-born, are supported as they age, especially with regard to social supports and assistance to stay connected to their home communities and places that have been

comforting for the majority of their lives, where people feel like they are in control. Kinnavall (2004) writes that "ontological security is maintained when home is able to provide a site of constancy in the social and material environment" (p.747). Maintaining continuity in the lives of older Canadians is one of the most important ways to support psychological wellbeing as they age.

While structuration theory has been useful in the development of this thesis, it has also made it clear that the variables connected to mental health and illness in an aging population are far from simple. This thesis highlights the need for further research in this area. Structuration theory is very broad and all-encompassing, and it is useful when it comes to the task of explaining complicated relationships.

In the end it is important that Canadian society does not neglect to ask questions about what it means to live in a diverse and aging society. Immigration has also contributed greatly to this country, and it is therefore essential that immigrants are heard by the government, and offered services that are proven to enhance quality of life as people age. Aging and mental health are both topics that are fraught with complexities, but if those involved at the ground-level and those working to improve policy work in collaboration, it is possible to improve mental health outcomes for aging Canadians.

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Appendix 1: Items in the Satisfaction with Life Scale[5]

Please tell me if you strongly disagree, disagree, slightly disagree, neither agree nor disagree, slightly agree, agree, or strongly agree.

(1) In most ways, my life is close to my ideal.

(2) The conditions of my life are excellent.

(3) I am satisfied with my life.

(4) So far, I have gotten the important things I want in life.

(5) If I could live my life over, I would change almost nothing.

[5] Statistics Canada. (2010). *Canadian Community Health Survey (CCHS)- Healthy Aging: User Guide Microdata files and Documentation*. Ottawa: Statistics Canada.