EXPLORING THE ROLES OF SOCIAL SUPPORT & COMMUNITY BELONGING IN RELATION TO THE SEVERITY AND DURATION OF DEPRESSION IN CANADIAN SENIORS

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A thesis submitted to the

School of Graduate Studies

in partial fulfillment of the requirements for the degree of

Doctor of Psychology

Department of Psychology

Memorial University of Newfoundland

May 2017

St. John's

Newfoundland and Labrador

Abstract

This study examined the effects of four types of social support and sense of community belonging on depression severity and duration in a sample of Canadian male and female seniors (age 65 – 80+ years of age). The present work builds on research conducted by Fowler et al. (2013) where the same variables were assessed in relation to Canadian men and women (ages 20-64). Data associated with 627 respondents were extracted from the Canadian Community Health Survey (CCHS; Statistics Canada, 2002) and analyzed. Overall, tangible support was the only predictor of depression severity in both male and female seniors. Positive social support, tangible support, affection, age and sense of belonging predicted depression in both male and female senior depression duration. Separate gender analyses were also conducted and compared to the findings in the Fowler et al. (2013) study. Differences in depression severity and duration emerged for male and female seniors. These findings were conceptualized as representing facets of seniors' social worlds.

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Forward

Depression is a particularly incapacitating mental illness that affects 350 million

people worldwide, with approximately one million individuals diagnosed with depression

completing suicide each year (World Health Organization, 2012). The illness is

characterized by feelings of sadness, lack of interest in activities which once brought

pleasure or joy, disruption of eating and sleeping behaviour, inability to concentrate,

irritability, an array of somatic symptoms (fatigue, anxiety, headaches, muscle and/or

joint pain, for example), and thoughts of death and dying (American Psychiatric

Association [APA], 2013).

Like many other types of illnesses, depression is not limited to a specific

developmental period. However, depression tends to occur more frequently in youth and

in elderly populations (CAMH, 2013; Dejernes, 2006). In addition, research suggests that

the prevalence of depression is especially high among seniors aged 85 years and older.

These facts are especially important when we consider that Canada's population is rapidly

aging. Since 2011, there have been more Canadians who are over the age of 65 than

under the age of 15, and this subset of the population is increasing at an annual rate of

3.5%, which is four times greater than the rest of the population ("Canada's population

estimates: Age and sex, July 1, 2015", 2015). Considering Canada's aging population and

depression's tendency to present among the elderly, it is important that efforts are made

to treat and prevent the disorder.

The goal of this study is to determine if relationships exist between Canadian

seniors' experiences of social support and community belonging and 1) severity of major

depression and 2) duration of major depression in this population. Potential gender differences will also be examined. In the context of this work, the term seniors represents those aged 65 years and over. This research extends Fowler, Wareham-Fowler, & Barnes' (2013) work in which four types of social support and sense of community belonging were examined in relation to major depression severity and duration. Fowler et al. (2013) extracted data from the 2001 Canadian Community Healthy Survey to assess these variables in Canadian men and women (ages 20-64). Accordingly, this study takes a senior subset of the population into account. The benefit of this type research is its potential to add to our understanding of the role of social context in the mental health of the elderly and its contribution to the literature on aging. Findings have the potential to inform clinical practice and public health policy.

Chapter 1: Literature Review

1.1 Major Depressive Disorder Diagnostic Criteria

The fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) stipulates that in order to receive a diagnosis of major depressive disorder (MDD), an individual must meet five criteria. First, a person must exhibit five or more symptoms for the same two-week period whereby one of the symptoms must be depressed mood or loss of interest of pleasure (Criteria A). Symptoms under Criteria A include depressed mood most of the day nearly every day, markedly less interest in almost all activities; significant weight loss or increase in appetite, insomnia or hypersomnia, psychomotor agitation or retardation, fatigue or loss of energy, feelings of worthlessness or excessive guilt, diminished ability to think or concentrate,

indecisiveness, and recurrent thoughts of death, recurrent suicidal ideation, or suicide

plan/attempt. Criteria B states that symptoms must cause the individual distress or impair

functioning (in the workplace, socially, or other significant areas of life). Criteria C states

that the person's presentation must not be attributable to a medical condition or the effects

of a substance. The illness cannot be better explained by another disorder (namely,

schizoaffective disorder, schizophrenia, schizophreniform disorder, delusional disorder,

schizophrenia spectrum disorder or psychotic disorder) (Criteria D). Finally, Criteria E

notes that there must not be evidence of a manic-like or hypomanic-like episode (APA,

2013). Unlike other editions of the DSM, the latest edition omits the bereavement

exclusion criteria. As such, the loss of a loved one may now be considered an event that

precipitates MDD shortly after a significant other passes ("Major Depressive Disorder

and the "Bereavement Exclusion"", 2016)

1.2 Epidemiology of Senior Depression

The Centre for Addiction and Mental Health (2013) estimates that 20% of

Canadians over the age of 60 meet diagnostic criteria for depression and that among this

group, suicide risk is five times greater than it is among those below this age. Seniors are

more at risk of developing the illness if they have a disability or are physically unwell.

For example, cerebrovascular injuries and dementia are known to be linked to depression

(Aziz & Steffans, 2013) and strong associations have been observed in elderly patients

with end-stage liver disease (Cron, Friedman, Winder, Thelen,, Derck, & Fakhoury, et

al., 2015). Psychosocial factors that contribute to increased risk amongst the elderly

include personality attributes (neuroticism, low self-efficacy, obsession traits), life

stressors, declining cognitive capacity and/or function, trauma, low socioeconomic status, lower levels of education, maladaptive thinking patterns, cognitive distortions, loneliness, grief, learned helplessness, and low social support (Aziz & Steffans, 2013; Ell, 2006; Cavanaugh et al., 2008). Age may also be a risk factor with some of the highest rates of depression being observed in individuals over the age of 90 years (Addis, 2008). Finally, as is the case with younger age groups, gender also appears to be a risk factor for depression in the elderly with older females being more likely to be diagnosed with major depression than older males (Luppa, Sikorski, Luck, Ehreke, Konnopka, & Wiese, et al., 2012).

1.3 Depression Presentation & Diagnosis in Seniors

Depression in the elderly may present as a continuation or recurring episode from earlier in life, a late-onset episode, or it may develop in response to a medical illness or be the result of medication (Aziz & Steffens, 2013). Late-onset depression is associated with a higher suicide risk in seniors (Ell, 2006).

Depression in the elderly is often misdiagnosed or underdiagnosed (Buchanan, Tourigny-Rivard, Philippe, Cappelliez, Frank, C., Janikowski, & Spanjevic, L. et al., 2006; Morichi, Dell'Aquila, Trotta, Belluigi, Lattanzio, & Cherubini, 2015). Detecting depression in the elderly may be challenging for a number of reasons. By virtue of their age, elderly individuals are more prone to medical illnesses. Depression impacts bodily functions like sleep and digestion, so it can be difficult for physicians to determine if these symptoms are attributable to a mood disorder or are a by-product or complication of an existing physical condition. Reporting the details of depressive symptoms like severity

and duration can be complicated by physical barriers like hearing or cognitive impairment or conditions such as dementia (Nolen-Hoeksema & Rector, 2008; Morichi et al., 2015). Dementia itself may present as depression in its early stages as it is marked with withdrawal from formerly pleasurable events and apathy (Buchanan et al., 2006). Elderly persons with depression tend to present with complaints of somatic symptoms as opposed to changes in mood (Hybels, Blazer, Pieper, Landerman, & Steffens, 2009). This may be due in part to generational attitudes towards illness and/or lack of understanding about normal aging (Buchanan et al., 2006). Underdiagnosis may also stem from societal attitudes towards aging. The literature has noted that attitudes towards aging tend to be negative and that these views are found across many cultures (Löckenhoff, De Fruyt, Terracciano, McCrae, De Bolle, et al., 2009). Cross-culturally, young adults perceive aging as a period of decline in attractiveness as well as in the ability to learn and perform daily tasks (Löckenhoff et al., 2009). Negative perceptions of aging have been associated with cognitive declines (Robertson & Kenny, 2016) as well as the onset and persistence of depression and anxiety (Freeman, Santini, Tyrovolas, Rummel-Fluge, Haro, et al., 2016). Indeed, negative stereotype embodiment, stereotype threat, and age discrimination pose barriers to aging actively (Swift, Abrams, Lamont, & Drury, 2017), and those who hold negative attitudes towards aging tend to disengage earlier in life (Robertson & Kenny, 2016). As such, many feel that it is simply normal for the elderly to feel depressed (CAMH, 2013). Educating seniors, conducting appropriate screening interventions and evaluating elderly who are known to be more at risk are ways to ensure that elderly individuals with depression do not fall through the cracks (Ell, 2006).

1.4 Impact of Senior Depression

Depression has major ramifications for the elderly, their social networks, and the healthcare system as a whole. Seniors' depression may create caregiver stress as family members work to care for their depressed loved ones. A diagnosis of depression in turn increases the risk of an individual developing an illness as well as lowering recovery rates and increasing the likelihood of early death (Buchanan et al., 2006; National Institute for Clinical Excellence (NICE), 2004).

Depression can have detrimental impact on the body. Depression increases the presence of cortisol (Cowen, 2002), epinephrine and norepinephrine (Hughes, Watkins, Blumenthal, Kuhn, & Sherwood, 2004), which can harm cardiac health by elevating blood pressure and heart rate (American Heart Association, 2016). Reduced levels of serotonin lower sex drive thereby decreasing physical connections with partners (Cavanaugh, Norris & Blanchard-Fields, 2008). Depression is also associated with over and under-eating and selecting foods of low nutritional value (Sathyanarayana Rao, Asha, Ramesh, & Jagannatha Rao, 2016). Individuals with depression may experience changes in energy level and be more sedentary (Roshanaei-Moghaddam, Katon, & Russo, 2009). Depression sufferers may also experience more severe physical pain (Kleiber, Jain, & Trivedi, 2005;Silva, Queirós, Sá-Couto, & Rocha, 2016). The restorative action of sleep is also disrupted in depression as evidenced by irregular sleep patterns that are punctuated, cut short or excessively long in length (APA, 2013; Szklo-Coxe, Young, Finn, & Mignot, 2007). Digestive issues including upset stomach, diarrhea, and ulcers are also implicated in depression's troublesome effects on the body (Foltz-Gray, 2016).

Progressive health declines can be so pronounced in depressed people that some have proposed a "depression-mortality hypothesis" which suggests that suffering from depression negatively and indirectly influences health (via exacerbating illness and poor health behaviours) to the point of increasing risk of mortality (Schulz, Martire, Beach, & Scheier, 2000). Bogner, Morales, Reynolds, Cary and Bruce (2012) recruited elderly persons from primary care facilities and assessed participants in terms of the course of their depression symptoms and severity. Those participants whose symptoms were persistent were more likely to have died when compared to those individuals whose symptoms were initially more severe but of shorter duration. This finding held true when factors such as age, smoking status and comorbid medical illness were controlled for. In fact, one longitudinal study that followed over 6000 elderly patients who had begun to exhibit depression symptoms found significant health declines. The seniors who showed signs of depression were 34 percent more likely to develop a new medical disease than those without depression (Han, 2002). Interestingly, seniors' physical health was shown to improve when depression was treated, further underscoring the impact of the mind-body connection on overall health (Han, & Jylha, 2006).

Research indicates that the severity of a senior's existing medical illness worsens with depression, as does his/her ability to recover and their mortality (Ganzini, Smith, Fenn, & Lee, 1997; Katon, 2003). Depression is thought to develop in the medically ill for a number of reasons. Firstly, having depression puts one at risk for developing certain illnesses. In addition, depression is a psychological reaction that forms in response to acquiring a disease and may be a reaction to specific symptoms or complications from a

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particular illness (Rao, 2008). Pharmacological drugs that are used to treat illness may also come with negative side effects, the catalyzing of depression being one of them. Certain medical illnesses themselves, particularly stroke and multiple sclerosis, have pathophysiological and inflammatory effects that trigger depressive brain chemistry (Katon, 2003). Those with depression may also have compromised immunity which may in part explain why when sick individuals become depressed, their condition worsens. As well, the literature shows that when those who are already ill become depressed, they begin to require more medication, their length of hospital stay increases, and their survival is reduced (Clark, 2007; Higgins, 1989; Karren, Smith, Hafen & Jenkins, 2010). The severity of medical illnesses such as coronary artery disease, myocardial infarction, heart rhythm issues, multiple sclerosis, Parkinson's disease, sudden death, diabetes, kidney disease, epilepsy, and acne is exacerbated by depression (American Psychological Association, 2016; Pappas, 2009; National Multiple Sclerosis Society, 2016; Keitner, Ryan, Miller, Kohn, & Epstein, 1991). Seniors are more prone to complex illness due to their age. Depression not only interrupts seniors' ability to care for themselves and adhere to their treatment regimens, but it also seems to reduce their overall health when they experience both depression and a physical illness (Moussavi, Chatterji, Verdes, Tandon, & Patel et al., 2007; Katon, 2003).

Numerous studies have shown that depression interferes with a person's ability to recover from a variety of medical ailments (Karren et al., 2010). Elderly patients who have undergone coronary artery bypass grafting (CABG) appear to have less promising prognoses if they develop post-surgery depression, and older age has been implicated in

poorer recovery outcomes (Pietrzyk, Gorczyca-Michta, Michta,, Nowakowska, & Woźakowska-Kapłon, 2014). In a study involving hip fracture patients, Feng, Scherer, Tan, Chan, Fong and Ng (2010) set out to investigate associations between depressive symptoms and cognitive impairment on rehabilitation progress. Patients (on average 70 years of age) were assessed in terms of their ambulatory ability, living activities and quality of life outcomes. The Geriatric Depression Scale (GSD), Mini-mental State Examination (MMSE), Modified Barthel Index (MBI), Short-Form-12 (SF-12) Physical and Mental Component versions were administered at baseline (days after admission), 6 months and 12 months post-discharge. As such, four patient groups were formed: those with both cognitive impairment and depressive symptoms, cognitive impairment only, depressive symptoms only, and neither cognitive nor depressive symptoms (the reference group). Not only did many of these patients exhibit depressive symptoms after their operations, but patients' depressive symptoms and cognitive impairment predicted poor functional ability and low quality of life. Specifically, patients who suffered from cognitive impairment or depression showed greater functional reduction in isolated outcome measures compared to those without. Patients with combined cognitive impairment and depression exhibited multiple functional reductions. Independence in daily living activities was poorer for those with both cognitive impairment and depressive symptoms compared to those without. Patients with either cognitive impairment or depressive symptoms were not significantly different from the reference group in this regard. Further, compared to the reference group, ambulatory status was significantly reduced in the combined group. The combined group's quality of life scores were also

significantly lower than those without a combination of cognitive impairment and depression. When considering depression's interaction with medical illness, it becomes apparent that depression is associated with reduced functional abilities and quality of life. Crucial health decisions have also been shown to be affected by depression status. Eggar, Spencer, Anderson, and Hiller (2002) noted that depressed seniors declined their option of cardiopulmonary resuscitation. After treatment and recovery from depression, however, seniors accepted the intervention. Those afflicted with geriatric depression are less likely to engage in rehabilitation efforts and if rehabilitation commences, progress can be stunted by low motivation and social withdrawal (Buchanan et al., 2006; Zhang, Sui, Yan, You, Li, & Gao, 2016).

Geriatric depression is also a cause of mortality in seniors. Besides depression's exacerbation of health problems amongst the elderly, depression amplifies negative environmental experiences. For example, seniors who had depression when they were newly admitted to a nursing home were 59 percent more at risk of death within the year. This held true regardless of their physical health condition (Moussavi et al., 2007). Explanations for this phenomenon were postulated to include diets that lacked nutritional value, poor immunity, and less rest. More direct causes of mortality are brought about by suicide in seniors suffering from depression. In 2005, approximately 15 suicides were committed per day by those over the age of 65 in the United States, with 5404 suicides on record for the year (Worthington, 2016). In Canada, this same age category has the highest number of suicides compared to any other age demographic. Baby Boomers exhibit the highest rate of suicide compared to those of other generations and elderly

Canadian men have the highest rate of suicide in the country. Canadian seniors who completed suicide statistically had made multiple attempts prior to their death (Canadian Coalition for Seniors' Mental Health, 2006; DeBono, 2013). Seniors are less likely to survive a suicide attempt than a person of a younger age group. Unfortunately, those who complete suicide are often those whose depression was not recognized or went untreated, despite having had primary care provider contact before their death (Suominen, Isometsa & Lonnqvist, 2004). In this way, depression has a particularly detrimental impact on the elderly population.

Depression not only affects the elderly person who suffers from the illness, it also affects family members and loved ones financially, emotionally and physically. Family and friends are the main providers of care for Canadian elders (Statistics, 2002a). Compared to elderly people who did not suffer from depression, one study estimated that depressed seniors received an extra three hours of informal care, costing an estimated $1330 per person annually (Langa, Valenstein, Fendrick, Kabeto, & Vijan, 2004). When the cost of providing care was accounted for along with the psychological and physical ramifications of caregiving, the price of caring for depressed geriatrics was calculated to be roughly $9 billion dollars nationally (Clark & Diamond, 2009; Zivin, Wharton, & Rostant, 2013). Caregivers of the elderly may suffer from compassion fatigue -- feeling exhausted, angry, sad, anxious, guilty, and isolated are normative feelings in care providers (National Centre on Caregiving, 2016). These feelings may be exacerbated when the person being cared for also suffers from depression. When functional capacity declines, depressed seniors can require a greater level of assistance than can be offered by

their family or formal care providers in community settings. Sewitch, McCusker, Dendukuri and Yaffe (2004) used a cross-sectional design to understand how depression in medically ill, frail elders impacted family caregivers in terms of their health status, the number of hours of care provided and quality of life. Seniors were recruited from hospital emergency departments and the average caregiver age was 60 years old, with 70.5% of caregivers being female. Compared to caregivers of seniors who were not depressed, caregivers of depressed elderly persons reported having poor mental health, providing more care, and perceived their quality of life as lower. In addition to health concerns for caregivers of depressed elderly, the authors point out that caregivers may also undergo financial stress, have less time to pursue self-care and leisure, as well as have less chance to explore career opportunities.

These struggles may result in lower social support (van Wijngaarden, Schene, & Koeter, 2004). Indeed, throughout the literature, it has been shown that caregivers for depressed elderly experience negative health and are at greater risk for developing the disorder themselves (Thompson, Fan, Unützer, & Katon, 2008). Those who care for the depressed report high levels of distress, fatigue and poor sleep (van Wijngaarden et al., 2004). Like the depressed seniors they aid, caregivers have poorer health outcomes and require more health services than those who do not find themselves in this role (Verma & Silverman, 2009; van Wijngaarden et al., 2004). It is also important to consider how caregivers' attitudes towards aging may help or harm seniors coping with depression.

There has been little research in this area, but in terms of caregiving in general (not specific to caregivers of seniors with depression) there is some contrasting evidence.

In a study involving participants over the age of 60, attitudes towards aging were

negative amongst participants who were caregivers, as well as among those who reported

chronic medical illness and significant depressive symptoms (Lucas-Carrasco,Laidlaw,

Gomez-Benito,& Power, 2013). In another study, however, care-givers who were over

the age of 70 viewed aging positively despite the challenges associated with their role and

moderate levels of depression (Loi, Dow, Moore, Hill, Russell et al., 2015). Interestingly,

one study revealed that adults who viewed aging as a negative experience and the elderly

as a burden to society were more at risk of developing depressive symptoms themselves

(Bai, Lai & Guo, 2016). It would make intuitive sense then that those who view aged

people as a burden and are averse to the caregiving role would not be facilitative towards

seniors with depression who are already experiencing profound sadness. Others have

speculated that this interaction could be mutually reinforcing (Zivin et al., 2013). It is

certainly clear, however, that geriatric depression takes its toll on caregivers' well-being

and other family members in the home (Zivin et al., 2013). Social supports and screening

for depression in caregivers is necessary given these findings (Sewitch, 2004; Polenick,

& Martire, 2013). Providing elders with treatment for their depression stands to alleviate

the negative physical and mental health outcomes caregivers battle (Martire, Schulz,

Reynolds, Karp, Gildengers et al, 2009). The impact of geriatric depression is not limited

solely to the sufferer but also impacts the financial reserves and well-being of those who

endeavor to help.

   When the psychological and physiological toll of geriatric depression are

considered, it is clear that these issues compound to form a substantial public health

problem. Exacerbation of illness, poor health behaviours, functional impairment,

disability, and suicide are undeniable implications of the disorder (Zivin et al., 2013;

Drayer, Mulsant, Lenze, Rollman, Dew et al., 2005). Paying attention to geriatric

depression's impact is especially important when Canadian aging statistics are taken into

account. With more than 8.2 million Baby Boomers born between 1947 and 1965, the

number of Canadians who are over 65 will have doubled by the year 2032 (DeBono,

2013). The number of seniors is predicted to rise to 25% by 2026 and approximately 10

million Canadian elderly are expected to require health services and social programming

(DeBono, 2013). Even though the majority of Baby Boomers will have died by 2061, the

number of Canadian elderly will remain between 12-15 million, still making up a large

portion of the population. The country's aging population will make prevention, detection

and treatment of geriatric depression a particularly pertinent public health cause since

depression is highly prevalent in the elderly but tends to remain untreated (Karakus, &

Patton, 2011). Thus, individuals, families and the system as a whole stand to gain

enormously when depression in this subset of the population is addressed.

1.5 Defining Social Support & Health Influence

　　　　Social support is an umbrella term for support gained from other people. A person

who has social support can turn to others in times of turmoil or stress, whether these

networks consist of a large group or simply a couple of close friends (University of

California, San Francisco, 2008). Social support can be further broken down into four

types: emotional/informational support, tangible support, affection, and positive social

interaction (Glanz, Rimer, & Viswanath, 2008).

First, emotional support is a person's ability to receive empathy and encouragement upon expressing his/her feelings. Emotional support is shown through caring, listening and establishing a sense of trust, feeling heard, accepted, cared for and loved. Receiving advice or information is a way in which this type of concern is shown. Emotional/informational support may take the form of a friend calling regularly after a family member has passed to see if the person is coping. They may also offer information about paying for a funeral or disclose their own personal experience of grieving and loss. In this instance, the actions taken recognize that a person has been heard, his/her situation processed by providing insight and/or identifying emotional reactions and shared experiences (Glanz et al., 2008). Self-disclosure through emotional/information support builds intimacy and trust -- whether the disclosure is through public, informal means like social media, or through private conversations (Utz, 2015).

Second, the ability to accept and receive materials (be they monetary or other types of resources) is considered tangible support. Tangible support may also be bearing the burden of a responsibility other than one's own in efforts to alleviate stress or simply help the recipient. Tangible support can be provided in many ways: through helping a friend move, babysitting children, exploring solutions together (as opposed to receiving advice in informational support), bringing food for someone when they have forgotten their lunch. (Anxiety, BC, 2016).

Third, affection is the ability to express feelings of love and fondness to people in our lives. This support is demonstrated through physical contact like hugging, caring facial expressions, and affectionate verbal statements like saying "I love you" (Floyd,

2006). Indeed, touching in affectionate ways by hugging, and holding hands is shown to release oxytocin which lowers pain and is calming. Release of oxytocin occurs in intimate encounters such as during sex, which fosters strong bonding (Holt-Lunstad, Birminham, & Light, 2008). Physical affection is associated with feelings of marital closeness and satisfaction, judging a person as more trustworthy, elevating mood, and lowering cortisol (stress hormone) levels (Floyd, 2013).

Lastly, positive social interaction is having the option of turning to others and enjoying one another's shared presence. In this type of support, individuals act and react to one another's presence in a positive way. These social exchanges could be a quick chat when a person encounters an old friend on the street, partaking in a sport, or sitting quietly, watching a movie with another person. It is the dynamic interaction of all four of these subtypes of social support that is thought to be protective in terms of preventing mental illness (Karren et al., 2010).

1.6 Social Support as Health Enhancing

Research has shown that social support promotes a variety of healthy behaviours, from maintaining a proper diet and exercise regimen, to avoiding consumption of alcohol and smoking tobacco products (Myers, Spencer, & Jordan, 2009). Generally speaking, it appears that those who have strong social supports tend to live longer (Myers et al., 2009). Harvard University's 75 year-long longitudinal study on aging underscores the importance of our social worlds on both health and happiness. Two cohorts of men were followed: 288 Harvard sophomore students and 456 inner-city Boston youth. Every two years extensive data was collected pertaining to quality of life (for example, social

engagement, marital satisfaction, and career trajectories) (Vaillant, 2012; Vaillant & Mukamal, 2001), and every five years physical health measures were taken and monitored (i.e., blood and urine collection, brain scans). Intimate video-recorded conversations were taken capturing in depth discussions that focused on a range of topics including the participants' favourite memories, their successes, failures, and their greatest fears. The study's results revealed that regardless of cohort, those whose social support networks were developed and rewarding lived happier and healthier lives than those who were not close to their friends, family and community. Moreover, those who reported feeling lonely also had poorer physical and mental health than those who did not.

Evidence of social support's correlation with well-being can be found across medical and psychological literature. For example, the literature review of Cacioppo and Cacioppo (2014) showed that persons with low social supports who felt lonely experienced higher rates of mortality. The authors suggested this finding could be a result of loneliness disrupting sleep, executive functioning, and mental and physical health. Social support's presence is important for health, but the quality of this support is also necessary to consider. The Harvard study (mentioned previously) revealed that quantity of relationships, particularly marital relationships, is not as vital as the quality of connection. Specifically, those who endured high-conflict partnerships were less satisfied and happy than those who were unmarried (Vaillant, 2012; Vaillant & Mukamal, 2001). How social support is perceived (and thus, its health-enhancing capabilities) may also be differ depending on developmental stage. Carmichael, Reis, and Duberstein (2015) found that those in their 20s expressed greater satisfaction when they had more relationships,

whereas quality of relationships was more important to those in their 30s. In addition to being a protective factor against mild cognitive impairment and dementia, married people with no period of separation, divorce, or experience of intense troubles performed significantly better in memory tests than unwed individuals (Vaillant, 2012; Vaillant & Mukamal, 2001; Lipnicki, Sachev, Crawford, Reppermund, Kochan et al., 2013). The presence and quality of social support is therefore vital to various facets of well-being.

1.7 Social Support and Gender

Social support is understood to promote overall wellness, and its different operation between the genders can be found as early as the adolescent years. When adolescent boys feel less supported by their families, friends, and other people in their lives, they are more likely to report significant depressive symptoms in comparison to girls of a similar age (Zhang, Yan, Zhao &Yuan, 2014). This finding makes sense considering that girls are known to cultivate greater levels of emotional and interpersonal support (both in the amount they give and the amount they receive) compared to boys who cultivate greater levels of tangible support (Reevy & Maslach, 2001). Zhang et al. (2014) also showed that support from friends is particularly important for adolescents when stress was high. Those who perceived the support of their friendships as high in quality reported fewer depressive symptoms. This finding was moderated by gender whereby perceived stress and depression was more pronounced in girls than it was in boys suggesting that girls' friendships are an important factor in their mental health. Level of stress and depression were related for boys regardless of their quality of friendship. These results support other literature which has found that girls tend to rely on

emotional support in times of stress while boys resort to physical recreation (ie:

distractive coping) to manage stress (Rueger, Malecki & Demaray, 2010). The manner by

which social support is useful for the respective genders continues as they progress

throughout the developmental spectrum. Young or "emerging" adults between the ages of

18-25 continue to illustrate gender differences in social support (Martinez-Hernáez,

Carceller-Maicas, DiGiacomo & Ariste, 2016). In managing depressive symptoms, men

of this age prioritized social support that fostered self-control to help cope with emotional

distress and women prioritized use of social support to understand awareness of the

problem as a first line of coping (Martinez-Hernáez et al., 2016).

Gender differences in the utility of social support can be seen in middle

adulthood. For example, adult men suffering from depression have been found to benefit

from social interaction as well as from informational support (Skarsater, Dencker,

Haggstorm & Fridlund, 2003). Another study found that while depressed adults of both

sexes placed significant value on emotional support over tangible support, women were

more likely to perceive lower amounts of emotional support than men (Skarsater,

Dencker & Agren, 1999). As pointed out by Zhang et al. (2014) and Rueger et al. (2010),

females readily cultivate emotional support and place value on it early in life. Perhaps

then they are more attuned to gauging the degree to which emotional support is available

and more cognizant of increases or decreases in this type of support compared to men.

Adult men and women's depression duration and severity has also been assessed

in relation to social support. Emotional support has been seen to increase depressive

severity in men whereas women's depression severity was related to increased tangible

support (Wareham, Fowler, & Pike, 2007). Tangible support correlated with shorter durations of depression in men while emotional support followed the same trend for women (Wareham et al., 2007). The authors of this last study conceptualized their findings in terms of both the conservation of resources (COR) theory as well as the norm of reciprocity. COR suggests that all individuals cultivate pools of resources from which they access in times of stress. It may be particularly stressful to draw from resources that are low in supply (Hobfoll, 1998, 2002). The authors in this study suggested that men, for example, may have fewer outlets to receive emotional support which may in part explain the relationship of findings (Wareham et al., 2007). The norm of reciprocity (the notion that people feel compelled to return that which has been given to them; Gouldner, 1960) similarly explains this pattern of results. Women's depression symptoms may be intensified by the fact that they are lower in tangible resources and may feel stressed / compelled to return this form of help (Wareham et al., 2007). Taken together, studies like these point to the idea that the genders benefit in different ways from their social support networks. More recent developments in social support's gender differences were assessed by Fowler et al. (2013), the study on which the current project builds. Detailed comparisons between Fowler et al. (2013) and this study will be discussed in detail later.

1.8 Social Support's Interaction with Senior Depression

Social support is a factor in positive health outcomes and also plays an active role in how depression impacts seniors. Social support is quantified as the degree to which a person perceives the availability of resources to be at their disposal (Gottlieb & Bergen, 2010). It seems intuitive that seniors who are experiencing significant life changes would

benefit from the support of others. Consider a senior who is struggling with physical illness or who may be having reservations about his/her changing living arrangements. It seems natural that a senior who has others to turn to would be better supported in disclosing feelings of stress than a senior who may be navigating these issues by his/herself. Having those who are supportive will in turn encourage health behaviours that promote longevity and off-set the likelihood of depression. For example, older women have been shown to develop feelings of relational empowerment, support, caring, stimulation, and personal growth through attending social groups intended to ease the progression of life-changes associated with aging (Gould, 2013). Indeed, longitudinal research has shown that social support dampens depressive symptoms in older populations (García-Peña, Wagner, Sánchez-García, & Espinel-Bermúdez, 2013) and that regular social contact from various contacts may be protective against depression in those over 80 years of age (Aung, Moolphate, Aung, Kantonyoo, et al., 2016),

While it is possible that social support can negatively impact a person's wellness (perhaps intense social support decreases feelings of independence/self-efficacy), there is a body of evidence which suggests that social support negatively correlates with depression, particularly in the elderly (Barcelos-Ferreira, Nakano, Steffens, & Bottino, 2013; Cutrona, Russell, & Rose 1986; Grady, 1990; Hsu, 2011; Park & Roh, 2013). For example, Mechakra-Thairi, Zunzunegui, Preville and Dube (2009) examined social relationships and depression in elderly populations in Quebec. The study's participants included individuals aged 65 years and over. Elderly persons living in metropolitan areas of Montreal were compared to those in rural and urban areas of Quebec. Participants

were asked to rate their levels of tangible, emotional, and positive interaction. Interestingly, the prevalence of depression was higher in both rural and urban areas than in metropolitan Montreal. Common to all geographical areas was the moderating effect of social support: the research indicated that in each location where social support was high and lack of conflict in intimate relationships was low, the prevalence of depression was low. The authors did not suggest reasons as to why this may be the case, but noted that similar findings have been were noted in other studies (Zunzunegui Beland, Llacer, & Leon, 1998; Kawachi and Berkman, 2001; Seeman and Crimmins, 2001; Zunzunegui, Beland & Otero, 2001; Minicuci, Maggi, Pavan , Enzi, & Crepaldi , 2002; Okabayashi, Liang, Krause, Akiyama & Sugisawa, 2004; Chou & Chi, 2005). Mechakra-Thairi et al. (2009) also noted that volunteer work was linked with lower levels of depression amongst the elderly, no matter their geographic context. The presence of support and its level of quality as well as connecting with others through volunteerism and having those to confide in all seem to contribute to social support. Social support in turn is associated with lower depression amongst the elderly.

Social support's association with geriatric depression may manifest differently based on geographic location, but its impact on wellness may also depend on the source and age of the recipient. This is particularly true in the case of tangible support. When seniors receive financial support directly from loved ones, they report less depressive symptoms than those who are reliant on social assistance (Chou, Chi & Chow, 2004). Interestingly, seniors who are financially independent (from family or government supports) have been reported to have higher levels of depressive symptoms (Chou et al.,

2004). This finding speaks to the protective nature of social support – tangible support

alone may not be enough to promote mental health. If this was so, it would be reasonable

to postulate that financial independence would be associated with the lowest level of

depressive symptoms, but this has not been found to be the case. When tangible aid is

connected to social support it has positive health associations for senior populations.

However, it should be noted that social support's relationship with senior depression

varies amongst the young-old (65-74 years of age), old (74-84 years) and the old-old

(85+ years of age). Bailly, Alaphilippe, Hervé, and Joulain (2007) found that social

support moderated the effects of depression amongst the younger old but not the older

old. The authors suggested that this may be because the younger old tend to use their

social supports in more effective ways. For seniors, support may be most useful when it

comes from family and friends, and when it is received in earlier senior years. Younger

populations (those between 20-64) have reported greater depressive severity when

tangible support is provided to them (Fowler et al., 2013). The norm of reciprocity and

the intensity by which it is felt may hinge on a person's stae of development. Intricacies

of this notion are discussed later. Social support's impact on senior depression is

therefore nuanced in terms of source and age. Nevertheless, much like other health

behaviours, social support is protective against geriatric depression.

1.9 Defining Community Belonging

      Community belonging can be conceptualized as the quality of relationships with

others, the degree a person feels connected to the region that they live in, participation

within the community, and belief that they are capable of bringing about change in an

environment that is considered to be overall quite positive (Karren et al., 2010). Hagerty, Williams and Oe (2002) investigated childhood antecedents that predict sense of belonging in adults and found that significant positive predictors of belonging include perceived caring of both mother and father while growing up, participation in high school athletics, and parental divorce. Among significant negative predictors were perceived overprotection from father, homosexuality, high school pregnancy, financial issues in the family, and incest (Hagerty et al, 2002).

McMillan and Chavis (1986) theorized that communities come together so members of a shared space experience a sense of belonging and purpose towards one another and the larger group. They stated that individuals who form communities are essentially coming together through a shared commitment that members can offer support and fulfill each other's needs. The authors describe four factors that contribute to community: membership, influence, needs fulfillment, and emotional connection. Feeling related to others and belonging is what constitutes membership. Through this membership, parities create boundaries and establish emotional safety and trust with others. The members of the group identify with the larger community and feel they have stake in the larger group. Because of this investment, individual members contribute to the community and may also seek identification through shared symbols. Influence is a person's feeling of mattering to their community and the belief that they impact their living environment and vice versa (McMillan & Chavis, 1986). Influence is essentially believing that one's values, opinions, needs are heard through their individual voice and that they are being heard. The community in turn influences residents by shaping itself

into a valued place -- one that its members feel committed to connecting with and preserving. Needs fulfillment is the idea that expectations and reality of what a person desires are met through membership in a community. Needs vary from person to person but can include factors like enjoying the type of population found in the area, the atmosphere, the conversations, or the job prospects. Communities where needs are met retain members because they are rewarded by their participation. Finally, shared emotional connection means that the region has a shared history and future (McMillan & Chavis, 1986). Emotions are tied to past events as well as through hopes and desires for the future. Local tragedies can bring communities closer together as they are forced to confront and face a problem, process emotions tied to the event and move forward as a cohesive unit to heal (McMillan & Chavis, 1986). Healthy communities are ones that embody the components of community belonging.

Fowler et al. (2013) view community belonging as a component of social capital and differentiate it from social support. Putnam (1993) describes social capital as the degree to which an individual participates in their community. As a result of community engagement, those who are actively involved with their surroundings develop a sense of social cohesion (Berry & Welsh, 2010). Social capital is broken into proximal factors (factors that arise from individual relationships) and distal factors (those that are entrenched in the broader community like volunteerism and engagement) (Berry & Welsh, 2010). Social capital also consists of structural and cognitive components which include action within the community and how the community is perceived (for example, the amount of trust one places in their surroundings) (Berry & Welsh, 2010; De Silva,

McKenzie, Harpham, & Huttly, 2005). So, while social support is a part of social capital which in turn embodies community belonging, the two concepts are distinct. Social support is largely a person's individual perception of their relationships within their surroundings whereas social capital reflects social structure (Fowler et al., 2013).

1.10 *Community Belonging as Health Enhancing*

Individuals who feel a strong sense of connectedness to their community exhibit features that lend to better health (engaging in physical activity, lower reported stress and overall higher mental well-being) (Karren et al., 2010; Shields, 2008). Similar to social support, having a sense of community belonging correlates with both physical and mental health. Older Canadians who report high levels of community belonging are more likely to report better health overall and this holds true when other behavioural and health factors (i.e., chronic illness) are taken into account (Shields, 2006), or when variables like socioeconomic status and age are accounted for (Ross, 2002).

A strong sense of community belonging as health enhancing (particularly in the case of depression) has been studied in a variety of populations. For example, Fisher, Overholser, Ridley, Braden, and Rosoff (2015) investigated sense of belonging in relation to suicide risk in 116 depressed psychiatric patients. Through clinical interviews and self-report measures that focused on depression symptoms, suicidal behaviour, support of a confidant, hopelessness and sense of belonging, they identified that sense of belonging was related to individuals' experience of depression. Specifically, those reporting a lower sense of belonging also reported more depressive symptoms. Lower sense of belonging was also associated with hopelessness as well as suicidal ideation and one or more

suicide attempts. The authors suggest that sense of belonging is related to how depression develops and can influence the likelihood of successful recovery from the disorder.

Interventions which focus on bolstering a person's sense of belonging may in turn help to lessen symptoms of depression and feelings of hopelessness. In another study, researchers examined how sense of belonging improves mental health in adult and elderly gay men. Participants were able to identify as heterosexual, gay male, or unsure/don't know. It is assumed that these participants were cisgendered. Sense of belonging was assessed in relation to three types of gay community (broader gay community [ie: gay lifestyle enclaves], gay friends, and gay groups) as well as in relation to the general community at large. Sense of belonging is particularly important to gay men who experience homophobia in society (Morris, McLaren, McLachlan, & Jenkins, 2015). Results indicated that gay men's sense of belonging to the general community was mediated by sense of belonging to their connections to the both gay groups and friends as well as symptoms of depression (Morris et al., 2015). These results point to group membership within the broader community as contributing to mental health. Feeling accepted and important to groups and communities has been documented in other populations. Certain cultures may promote these values more than others. For example, the literature suggests that Latino culture values familism, obedience, and filial obligation (Cupito, Stein, & Gonzalez, 2015). These factors are noted as being protective against depression and as facilitating resilience (Cupito, et al 2015). Latino adolescents who reported positive attitudes towards their families and familial obligations also reported a greater sense of school belonging (Cupito, Stein, & Gonzalez, 2015). Teenagers who

wanted to make their families proud and were academically motivated reported desire to belong in a school context. This sense of belonging in turn was associated with lower depressive symptomology (Cupito et al., 2015).

The importance of belonging is also seen in military personnel's mental health. This holds true for service men and women at the recruitment stage and post-deployment. In contrast to matched comparisons, Navy recruits who perceived low levels of belonging were also those who exhibited depressive symptoms (Williams, Hagerty, & Yousha, 2002). Recruits in this study who were depressed were less likely to complete their training. The authors considered sense of belonging a concomitant factor and suggested that efforts to manage such factors (ie: fostering social development, teaching cognitive reframing and problem solving) would be useful in mitigating depression (Williams et al., 2002). In another study that assessed sense of belonging in Air Force personnel before deployment and monthly intervals post- deployment, researchers found that depression severity was significantly increased among personnel with low belonging. This finding held true for each of the time intervals under consideration (Bryan & Heron, 2015). Other groups including homeless men, disadvantaged adults, and those who have suffered a brain injury (Ron, 2004, Murrock & Graor, 2015; Bay, Hagerty, & Williams, 2002) also benefit in terms of mental health when sense of belonging is strong. No matter the population, human beings seem to have a strong desire to feel integrated and accepted in their environments and cultivating this connection appears to be especially beneficial to mental health.

1.11 Community Belonging and Gender

As is the case with social support, both men and women benefit from community belonging. Quality of life and active aging are associated with active participation in the community for both sexes (Campos, Ferreira, & Vargas, 2015). While feeling a sense of community belonging has advantages for both sexes, gender-specific findings have also been documented. Berry and Welsh (2010) noted that women tend to engage in the community more than men and felt higher degrees of social cohesion, but reported lower levels of mental health. The authors suggested that women's social obligations are outweighed by their ability to partake in them, be it financially or emotionally.

Community belonging has also been linked to depression and suicidal ideation. Men who feel connected to their communities are not at risk for depression and the relationship between depression and suicidal ideation is lower in women who report a sense of belonging (McLaren, Gomez, Bailey, & Van Der Horst, 2007). Other research has shown that men may benefit more from community belonging as opposed to social support in terms of expression of depressive symptomology (McLaren & Challis, 2009). In the Canadian context, elderly people were more likely to report a strong sense of community belonging compared to other age groups, a finding that is believed to be connected to having more time to engage in leisure and/or community-based activities (Berkman, Glass, Brissette, & Seeman, 2000; Ross, 2002). Salient gender differences in community belonging and depression severity and duration were found by Fowler et al. (2013). Depression duration in adult men was predicted by community belonging, whereas community belonging emerged as a predictor of both depression severity and

duration in women (Fowler et al., 2013). Community belonging therefore facilitates well-being but does so in different ways based on gender.

1.12 Community Belonging's Implications in Senior Depression

Community belonging has negative associations with depression, a trend also found amongst senior populations. Hsu (2011) found that elderly Taiwanese individuals reported lower levels of depression when community belonging was high. Those who endorsed higher community support were also those who reported positive self-esteem, a known protective factor against depression (Hsu, 2011). The importance of feeling connected to one's community is also reflected in the self-reported health of immigrants. Specifically, in contrast to those living within the country in which they were born, elderly immigrants (and older women in particular) may be more likely to report depressive symptoms when they do not feel connected to their cultural roots and traditions in their new communities (Momeni, Wettergren, Tessma, Maddah, & Emami, 2011). Cultivating a sense of belonging in this way may be especially important for elderly persons when they are more likely to feel like outsiders. The impact of community belonging as a health-enhancing variable cannot be underestimated. Despite factors such as socioeconomic standing, seniors who report a sense of community belonging appear to have better mental and physical wellness (Kitchen, et al., 2012) .

Older adults can foster a sense of community belonging in various contexts, such as rural, urban, or virtual communities. Research suggests that better mental health outcomes are seen in seniors who live in rural versus urban areas (Kitchen, Williams, & Chowhan, 2012). Smaller communities may foster more intimate connections and sense

of identity which in turn can be protective against depression. The benefits of community belonging can also be obtained through the use of technology. Elderly persons who are active online report a sense of belonging to both online and offline communities (Sum, Mathews, Purghasem, & Hughes, 2009). In the Sum et al. (2009) study, internet use did not impact the level of face-to-face contact seniors had with their social supports, rather, it facilitated discussions with online communities and exploration of interests and hobbies which seemed to promote happiness and lower the risk of depression. Understanding that seniors find value and identity in these types of outlets may be helpful in treatment planning and programming that aims to promote wellness amongst the elderly. Thus, feeling valued and a part of a community is beneficial for seniors with depression much as it is with other populations.

1.13 Significance of the Current Project

In light of existing research which considers social support and community belonging in the elderly, more research with seniors must be conducted to better understand relationships between these variables and depression. Assessing possible differences in seniors' depression severity and duration as well as considering gender differentiates this research from previous work. As mentioned, an earlier study by Fowler et al. (2013) explored the relationship between gender and severity and duration of depression but did not consider the elderly population. The current project uses a subset of a national Canadian population health survey to assess social support and community belonging in relation to depression in those over 65. Attention to relevant gender differences within the senior group under examination will also be assessed. The

benefit of this type of analysis is its potential to increase our understanding of the influence that social context and gender have on the mental health of the elderly. The findings of this research can be used by policy makers, particularly those who are involved in long-term care and government initiatives which aim to promote longevity and well-being. Physicians and clinical psychologists who encounter geriatric depression can use these findings to inform treatment plans and guide best practice.

1.14 Hypotheses

The health enhancing impact of both social support and community belonging are well documented in the literature (Cacioppo & Cacioppo, 2014; Carmichael et al., 2015; Crawford et al., 2013; Cupito et al., 2015; Hagerty et al., 2002; Karren et al., 2010; Myers et al., 2009; Overholser et al., 2015; Shields, 2008; Vaillant, 2012; Vaillant & Mukamal, 2001;Williams et al., 2002). The present study extends the Fowler et al. (2013) study by examining the influence of social support and community belonging on depression severity and duration in Canadian men and women 65 years and over. The following outcomes are expected:

Higher levels of social support and community belonging will significantly predict lower levels of depression severity in both senior men and women.

Higher levels of social support and community belonging will significantly predict shorter durations of depression in both senior men and women.

Different relationships between social support, community belonging, and depression severity and duration will emerge between genders.

Chapter 2: Methods

2.1 Participants

For the present study, the data set used in the Fowler et al. (2013) study was re-examined (work that had built onto that of Wareham et al, 2007). Fowler et al. (2013) made use of the Canadian Community Health Survey (CCHS1.1; Statistics Canada, 2002b). This national survey has more recent versions, however, several issues had to be considered. First, Fowler et al. (2013) included adults ages 20-64. The present study explores how social support and community belonging operate in relation to depression within a senior population. This sample builds upon a subset of individuals who were interviewed at the same time as those in the previous study but who were not previously considered in the analysis. Thus, clearer comparisons between adults and seniors can be drawn given that results reflect experiences collected from the same time frame. Second, more recent versions of CCHS did not include all of the variables of interest. Provinces have the opportunity to "buy in" to particular variables. More current CCHS versions had not purchased all social support items. The 2001 data file represents social support and community belonging responses from the majority of the Canadian provinces (see Table 1: Provincial Distribution Frequencies).

A subset of participants was extracted from the CCHS 1.1 (Statistics Canada, 2001b). This survey samples over 130 000 people from 136 Canadian health regions. Inclusion criteria was based on age and response to the variables of interest. Participants had to be over the age of 64 (youth and adults were excluded since they experience depression differently). For the purpose of this study, the term "adult" references those aged 20-64 and "senior" represents those aged 65 and beyond. There remains

inconsistency in the literature as to what discrete age groups constitute "senior" (Statistics

Canada, 2007c). While senior individuals are undoubtedly also adults, the term senior is

both methodologically practical and reflective of institutions' labelling of those who are

65 years and over (Statistics Canada, 2007c). Since comparisons were being made with

adult-aged individuals, it was felt that prefacing the two age groups as being either adult

or senior provided clarity on this front. Participants had to have completely answered

questions pertaining to the depression scale, social support module, length of depression

survey module, and community belonging to the local community. Failure to answer any

questions within any of the modules, "not applicable" responses, and those who gave no

response were excluded. Males were coded as 1 and females were coded as 2. The

study's final sample size was 627 participants (172 males, 455 females). The majority of

participants were between 65-69 years of age (34.6%), followed by 70-74 years of age

(28.5%), 75-79 years of age (19.3%), and 80+ years of age (17.5%).

2.2 Data Collection Method

The CCHS 1.1 is a cross-sectional survey which highlights a range of Canadian

health information from health status to the manner in which health services are availed.

The data were collected from persons aged 65-80+ years of age, living in private

dwellings in the majority of provinces and territories across Canada, excluding Ontario

and Manitoba. These provinces had not fully bought into the variables of interest. Data

collection took place between September 1, 2000 and November 1, 2001. A subsample

of seniors from the age range mentioned was selected for inclusion in this study. The

survey made use of sampling frames to select samples of households, telephone number

lists and Random Digit Dialling (RDD). Detailed information regarding sampling techniques and data collection are provided in Statistics Canada (2007d) but are outlined below.

Introductory letters were sent to the sample households before data collection which explained the purpose of the survey and the importance of participation. Participants were made aware that survey engagement was voluntary. The limits of confidentiality were made clear as well as the manner in which the data would be released and published. Data was collected via computer-assisted interviewing (CAI). The RDD frame and telephone list were used to select sample units and interviews were conducted from centralized call centres by way of computer-assisted telephone interviewing (CATI). All interviews took place under the supervision of a senior interviewer at the same call centre. Filed interviews took place using computer assisted personal interviewing (CAPI) after sample units had been selected from the area frame. Again, senior interviewers were responsible for supervising collection (this time from a distance). There are several advantages of the CAI technique. Each survey respondent is able to complete a custom interview based on their individual characteristics and responses. Questions that are not applicable are automatically skipped, immediate feedback can be provided and prompts can be given if a response is invalid or out of range. Tailored interviews that are sensitive to respondent characteristics can be offered. For example, adjusting the question text to accommodate the age and sex of the respondent. The interview date is included and so are answers to previous questions. CAI is therefore both convenient and thorough.

Minimizing non-response. Numerous efforts were made to minimize non-response. Interviewers were trained to make all reasonable attempts to make contact with survey respondents and conduct interviews. If initial contact with an interviewee was inconvenient, efforts were made to reengage or call back at an appropriate time. If attempts to make appointments over the phone were unsuccessful, interviewers were told to schedule a follow-up personal visit. Telephone follow-up occurred if in-person visits resulted in non-response. Those who refused to participate upon first contact were issued a letter by Statistics Canada which discussed the importance of participation. A call or visit from either a senior interviewer or supervisor would take place after the participation letter was sent.

Proxy interviews were conducted when a particular respondent was unable to complete to interview or absent during this period. In the event of this occurrence, an individual in the household/caretaker who knew the selected respondent well was asked to supply answers to the survey questions. The use of proxy interviews were not the preferred method and were used only when necessary since it was possible that certain questions remained unanswered. That is, specific questions of the survey were of a more private nature and were therefore beyond the scope of the proxy interviewee's response. The questions of interest in this analysis pertain to depression and are therefore sensitive in nature; thus, proxy interviews were excluded from the present study.

Weighting. The sampling weight is determined in the weighting phase of the analysis, which is retrieved from the microdata file. Probability sampling operates such that every selected person represents both themselves and those in the population who

have not been sampled. Fowler et al. (2013) explain the notion of assigning weight: "In a random sample of 2% of the population, every person in the sample represents 50 people in the population. Therefore, it can be said that every person sampled has a weight of 50" (Fowler et al., pg. 43, 2013). Each individual's survey weight is needed to provide estimates that will suitably represent the rest of the population and not simply the sample alone. Every respondent is assigned to a particular survey weight which matches the number of people in the population that are represented by the individual. The weights are then integrated into the appropriate calculations.

2.3 Instrument Description

CCHS content is broken into three distinct sections: common content component, the optional content component, and the rapid response component. All respondents from across Canada were asked material from the common content component section; optional content was determined by specific regions based on what a particular province prioritized as a health interest.

2.4 Measures

Depression. This variable was assessed by measuring depressive episodes using the Composite International Diagnostic Interview (CIDI; Anthony, Warner, & Kessler, 1994). The CIDI is a reliable and valid measure which classifies depression in accordance with the DSM-III-R and International Classification of Diseases (ICD-10; APA, 1987; World Health Organization, 1992). The short form of major depressive episode (which operationalizes Criterion A-C of the DSM-III-R, excluding Criterion D) from the CCHS was used (Cycle 1.1; Statistics Canada, 2002). The classification accuracy of the short

form to the full form of the CIDI ranges between 94-99% accuracy (Kessler, Andrews,

Mroczek, Ustun, & Wittchen, 1998). The short form of this measure takes roughly seven

minutes to administer compared to a full hour which is required for the full form (Kessler

et al., 1998). Respondents were asked to rate on an 8-point scale (1 indicating *minimal*

depression experienced; 8 indicating *severe depression*) periods of feeling sad or

depressed, lacking interest in everyday activities within the past 12 months. Expected

periods of sadness (grieving after losing a loved one, for example), as well as serious

depression were included in these periods. Participants were first asked if they had

experienced a time when they felt sad, blue, or depressed for 2 weeks or more in a row. A

response of 'no' prompted a subsequent question which required respondents to indicate

if they had experienced a 2-week period of having lost interest in most things, which also

assessed the respondent's depressive symptoms (CCHS 1.1; Statistics Canada, 2002b).

Respondents were also asked to provide the frequency (number of weeks, specifically) of

their depression within the last 12 months, from 2-52 weeks. Only participants whose

reports were noticeably depressed (lasting at least 2 consecutive weeks) were recorded.

   Social Support. This variable was analyzed with the aid of the Medical Outcomes

Study (MOS) of Social Support Survey. In addition to its high reliability and validity, the

measure is easy to administer and captures various kinds of functional social support

through 19 items (Sherbourne & Stewart, 1991). Respondents provide answers using a 5-

point scale (1 indicating *none of the time*, and 5 indicating *all of the time*). Social

response was recorded as having occurred within the past 12 months. Four types of social

support were considered: emotional support/ informational support (minimum =0,

maximum = 32), tangible support (minimum =0, maximum = 16), positive social

interaction (minimum = 0, maximum = 16), and affective support (minimum =0,

maximum = 12). Higher ratings on the subscales represent higher levels of social support.

During instrument design, mulit-trait correlation matrices revealed that emotional support

and informational support correlated highly together, so the two were combined into one

unified scale (Sherbourne & Stewart, 1991).

Community Belonging. This variable was assessed on a 4-point scale (1 indicating

very strong sense of belonging, to 4 indicting *very weak sense of* belonging). Community

belonging was assessed through a single question: "How would you describe your sense

of belonging to your local community? Would you say it is *very strong, somewhat strong,*

somewhat weak, or *very weak?"* (CCHS 1.1; Statistics Canada, 2002b).

2.5 Data Analyses

Data analyses were performed using SPSS (Statistical Package for the Social

Sciences) software. Demographic and background variables including age and gender

were summarized using frequencies, percentages, means, standard deviations and

correlation coefficients. For the hypothesis testing, stepwise multiple regression analyses

were used to assess the extent to which the four types of social support, sense of

community belonging, age and gender predicted depression severity and duration in the

overall sample. The same type of analyses were run to assess gender differences in

geriatric depression severity and duration. Multiple regression was used to analyze the

data primarily because this was the same strategy applied in the Fowler et al. (2013)

study. Application of the same analysis allowed for direct comparisons to be made between studies. Further, while a hierarchical regression could have been implemented, this study was exploratory in nature and did not aim to test a particular model. Instead, understanding which predictors emerged and the order in which they accounted for variance relative to one another was the preferred.

Chapter 3: Results

The 2001 CCHS data file was used for the present study. As a note, more recent versions of the CCHS are available. Out of interest, a separate data file (The Healthy Aging Profile) from 2009 was explored to examine the relationship between social support, community belonging and senior depression by way of multiple regression. Interestingly, similar trends in the data appeared to emerge. Nonetheless, the older CCHS 1.1 dataset was used to draw conclusions from the same cross-section of individuals from the Fowler et al (2013) study.

3.1. Provincial Distributions and Overall Findings

The provincial distribution of the sample can be found in Tables 1. The means and standard deviations for the four subtypes of social support, community belonging, depression scale score, and the number of weeks of reported depression for the entire sample are reported in Table 2. Table 3 presents these statistics separately for men and women.

3.2 Hypothesis Testing

Higher levels of social support and community belonging will significantly predict lower levels of depression severity in both senior men and women.

To determine the extent to which each of the four subtypes of social support, gender, age, and sense of community belonging predicted depression, a stepwise multiple regression analysis was conducted. The resulting model indicates that the only predictor of depression severity for men and women was tangible support (F 1, 609) = 5.851, p <.05. Overall, tangible support accounted for 1.0% of the variance in depression severity scores. To understand how these variables are related, Step 1 shows that depression severity and tangible social support are negatively associated. Thus, as tangible support increases, the severity of depression symptoms decreased. Effect size was small (0.010) (Cohen, 1988). See Table 4.

Higher levels of social support and community belonging will significantly predict shorter durations of depression in both senior men and women.

The four types of social support, age, and sense of community belonging were examined in relation to predicting the duration of depression in both male and female seniors. A stepwise regression analysis was conducted. Predictors of the duration of depression included positive interaction, tangible support, affection, age, and community belonging. See Table 6 for regression statistics. Step 1 of the model shows that positive social interaction was negatively associated with depression duration, F (1, 609) = 21.156, p <.001, indicating that those who have higher social support experience a lower duration of depression. Step 2, F (2, 609) = 18.911, p <.001, shows that a positive relationship exists between tangible social support and depression duration. This reveals that those who have greater tangible support reported longer durations of depression. Step 3 of the analysis, indicates that those who had greater amounts of affection reported

shorter durations of depression, $F (3, 609) = 14.698$, $p \leq .001$. Step 4 of the analysis

reveals that those who are older in age reported experiencing longer durations of

depression, $F (4, 609) = 12.712$, $p < .05$. Lastly, Step 5 shows a positive relationship

between community belonging to one's community and duration of depression. That is,

the weaker the community belonging, the longer the duration of depression, $F (5, 609) =$

11.189, $p < .05$. Effect sizes were small, ranging from 0.035-0.093 (Cohen, 1988). See

Table 5.

Different relationships between social support, community belonging, and

depression severity and duration will emerge between genders.

Separate stepwise multiple regressions were conducted to assess the degree to

which depression severity was predicted for men and women by age, the four types of

social support, and community belonging. The resulting model for the analysis that

looked at predictors of depression severity of in males included two significant

predictors: tangible support and age. Tangible support accounted for 2.8% of the variance

in depression severity, $F (1, 163) = 4.62$, $p < .05$. As tangible support increased, the

severity of depression in male seniors decreased. Age accounted for 5.2% of the variance

in depression severity, $F (1, 163) = 4.45$, $p < .05$. As age increased, the severity of

depression in males from the sample decreased. Effect sizes were small, ranging from

0.029-0.055 (Cohen, 1988). See Table 6.

A stepwise multiple regression was also conducted to determine to what extent

the various social support types and sense of community belonging predicted depression

duration in men. The resulting model included only one significant predictor: affection.

This type of social support accounted for 6.1% of the variance in depression duration, F (1, 163) = 10.5, p < .05. As affection increased, depression duration in men decreased. Effect size was small (0.068) (Cohen, 1988). See Table 7.

None of the social support variables or sense of community belonging predicted depression severity in senior females. The regression model for depression duration in senior women included four significant predictors: community belonging, age, positive social interaction, and tangible support. Step 1 of this model shows that community belonging accounted for 3.7% of the variance. Depression duration was longer with weaker community attachment, F (1, 445) = 17.14, $p<.001$. As community belonging increased, depression duration in women decreased. For Step 2 of this model, age was positively associated with increased depression duration, F (2, 445) = 14.37, $p <.001$. Older women reported longer depression duration. Step 3 of the analysis indicates that positive social interaction was negatively correlated with depression duration, F (3, 445) = 11.03, $p<.001$. So, the more positive social interaction senior women received, the less likely they were to report prolonged durations of depression. Lastly, Step 4 of the model reveals that tangible support was positively correlated with depression duration, F (4, 445) = 14.65, $p <.001$. Therefore, increased amounts of tangible support were associated with longer durations of depression in women. Effect sizes were small, ranging from 0.038-0.133 (Cohen, 1988). The results of the complete regression model statistics are found in Table 8.

Chapter 4: Discussion

4.1 Findings

The senior years mark a distinct developmental experience in terms of physical, emotional, and situational changes. This study analyzed how four types of social support and community belonging relate to the severity and duration of depression in a nationally representative sample of seniors aged 65 years and over. The current work builds on the Fowler et al. (2013) study in which these variables were examined in a national sample of adult Canadians under the age of 65 years. An overall step-wise regression analysis was conducted including senior men and women in relation to the variables of interest. Tangible support was the only significant predictor of depression severity across senior men and women. As tangible support increased, depression severity decreased overall. This finding is different compared to Canadian adults under the age of 65 (captured in the same cross-sectional sample). Three variables emerged as predictors of depression severity in male and female adults: positive social interaction, community belonging, and gender (Fower et al., 2013). Disparity between these age groups suggests that depression severity may be predicted differently depending on a person's developmental stage. It is possible that socially accepted behaviours differ depending on an individual's age. Depression severity may therefore be predicted by different factors accordingly. Often adults under the age of 65 are working, earning income, and expected to be financially independent and responsible. The years before age 65 are often ones in which men and women are expected to be capable of providing for children and/or seniors. Being the recipient of tangible support as an adult under the age of 65 may actually be

disempowering and demoralizing and increase the severity of depression. It is possible that seniors experience tangible support differently. Since it is common for the seniors to receive care and support from friends and family (Statistics Canada, 2015e) seniors may be more comfortable than adults in receiving tangible support. Indeed, Kasepalu, Laidmäe and Tulva (2014) found that elderly women living in social houses were satisfied and comfortable with receiving care and those who did not readily avail of help felt comforted knowing it was at their disposal. It is also possible that some seniors may feel they have completed their duties of being care providers for others and are more willing to accept tangible support and feel good about it during the elderly years. When considered in this way, tangible support's negative relationship with depression severity makes sense.

Three social support variables (positive interaction, tangible support, and affection) as well as age and community belonging were significant predictors of depression duration in male and female seniors. Positive interaction, affection, and community belonging were negatively correlated with duration of depression (i.e. higher levels of positive interaction, affection, and community belonging were associated with shorter durations of depression). However, tangible support and age were positively associated with duration of depression meaning that individuals who reported higher levels of tangible support reported longer durations of depression and older individuals also reported longer durations of depression. It is interesting that tangible support was associated with less severe depression but with a longer duration of depression. Perhaps having someone in your life to provide immediate support to you when needed means

that it is less likely that your depressive symptoms will intensify and that they will remain at a level more consistent with dysthymia. Dysthymia, by its very nature, presents with less severe depressive symptoms which are of a substantially longer duration (APA, 2013). Shorter depression durations were reported in senior men and women who indicated high levels of positive interaction and affection. This could potentially be explained by societal expectations and developmental social norms. Perhaps this finding represents what seniors deem personally appropriate, which is in turn influenced by what is considered socially acceptable for those of their age range.

Greater positive interaction was related to shorter depression duration suggesting that having meaningful connections and fulfilling relationships in your later years reduce the duration of depressive symptoms. Fowler et al. (2013) found that adults under the age of 65 who reported shorter depression durations also reported higher levels of positive interaction, community belonging, and tangible support. Both adults under and over 65 appear to benefit from the company of others and feeling connected to their surroundings. In contrast to the present study's findings, Fowler et al. (2013) found that participants under the age of 65 who reported shorter length of time depressed also reported receiving more tangible support. Duration of depression in adults under the age of 65 was predicted by positive interaction, tangible support, and community belonging. Duration of depression in adults 65 years and older was also predicted by these variables as well as age and affection. These findings reveal that predicting depression duration may be nuanced according to a person's stage in lifespan.

Separate gender analyses allowed for examination of potential differences in predictors of depression severity and duration. Tangible support and age predicted depression severity in senior males. The greater the amount of tangible support, the lower the severity of depression reported in male seniors. The norm of reciprocity suggests that when support from others is received (no matter the form taken), people feel compelled to reciprocate. Wareham et al. (2007) hypothesized that stress may be exacerbated when a person is the recipient of resources but is limited as to the degree to which they are able to return the favour. These ideas are important when we contrast seniors with the finding of Fowler et al. (2013) where the only predictor of depression severity in adult men (under the age of 65) was positive interaction. Perhaps senior men are less severely depressed upon gaining tangible support because as retirees or living on a reduced income, they have genuine concerns about making ends meet. An adult male may feel a strong urge to reciprocate or pay back the source of tangible support since he (presumably, but necessarily) is in a working phase of his life. In contrast, a senior male may feel less depressed by this help, having given service in the form of work or having raised a family, for example. This theory agrees with depression research that suggests conformity to masculine norms is particularly important for younger men (Rice, Fallon, & Bambling, 2011). Adherence to masculine norms has also been shown to decrease throughout the lifespan (Rice et al., 2011). Tangible support may help with increasing medical bills or changes in living accommodations. It is also possible the norm of reciprocity still applies to senior males here, but they are less financially stressed and do not feel badly about accepting concrete resources from others as they may be able to give

back in other ways they deem sufficient. Tangible support also includes care at home (someone to rely on for rides to and from places, help them to and from bed in a confined space, for example). So, perhaps men feel more comfortable receiving intimate forms of help when they are older as opposed to when they are younger.

Interestingly, as age increased, the reported severity of depression in senior men decreased. One may hypothesize that the severity of depression symptoms could escalate towards the end of life when remaining life time is shorter and health conditions may be intensified. The finding that younger male seniors reported more severe depression may speak to the complexity of transition males undergo a shift in the types of societal and familial contribution they make occurs. Apesoa-Varano, Barker, and Hinton (2015) explored this idea through a social constructivist approach, focusing on how men conceptualize masculinity, illness, ability to work, and identity in relation to their emotional experiences. The authors gathered qualitative data from 77 men who were aged 60 and over. They found that men attributed their depression to physical decline that was inextricably linked with social repercussions. The theme of compromised masculinity through decreased productivity (especially in work and finances) as well as loss of social status, control and independence also emerged. Men in this study indicated that these changes forced them to reconstruct their understanding of themselves. Interestingly, while men in this sample were elderly, they had difficulty chronologically placing when these changes began to have impact. Rather, participants said they became acutely aware only once they had become significantly emotionally and physically debilitated (Apesoa-Varano, Barker & Hinton, 2015). It is possible that the adult men

under 65 in the Fowler et al. (2013) study were more cognizant of this shift at the time of sampling. Adult men 65 and older in the present study may have been more adjusted and accepting of shifts in their masculinity, particularly so by the later stages of senior years. Positive interaction was the only predictor of depression severity in the adult men under 65 in the Fowler et al. (2013) study. In a busy phase of life with perhaps less well-cultivated social activities than women, it is possible adult men's depression severity is in part alleviated by this type of support. Thus, while adult males under the age of 65 seem to benefit from positive interaction, increased tangible support and age are associated with less severe depression symptomology in men aged 65 and older.

Different results emerged when depression duration in senior men was assessed. The only predictor of depression duration in senior men was affection. In line with existing literature (Field, 2002; Gulledge, Gulledge, & Stahmann, 2003; Gulledge, Hill, Lister, & Sallion, 2007) receiving physical displays of affection and love was health enhancing, in this case, correlating with shorter durations of depression for senior men. For the adult men aged 64 and younger in the Fowler et al. (2013) study, positive interaction, and community belonging predicted shorter depression duration. One may venture to guess that social scripts play a role in a person's comfort with receiving outward displays of affection. Affection may be perceived and received differently depending on the age category in question. Outward displays of affection may be less comfortable for adult males (under age 65) who feel they must appear unemotional and strong. Conversely, senior males (65 years and older) may feel more comfortable and

willing to accept affection in their late years or life, as reflected in their mental well-being.

No significant predictors of depression severity were observed when data from senior females was analyzed. This is quite a striking difference compared to adult women. Middle-aged women's depression severity in the Fowler et al. (2013) study was predicted by positive interaction, community belonging and tangible support. The authors noted that while higher levels of positive interaction and community belonging were associated with decreased depression severity, greater tangible support was associated with increased depression severity. Fowler et al. used the norm of reciprocity to help understand this observed phenomenon, and stated that perhaps women tend to have less tangible support in their reservoirs. As a result, it is actually more stressful to receive tangible support when women may have felt they were unable to reciprocate the favor. The authors also pointed out that CCHS's definition of tangible support included intimate help (someone to take them to the doctor, prepare meals, help with chores, etc.). Women may have felt uncomfortable with this type of help as generally they tend to find themselves in these kinds of roles (Butler & Skattebo, 2004; Family Caregiver Alliance, 2011; Schoppe-Sullivan, Brown, Cannon, Mangelsdorf, & Sokolowski, 2008; Women and Caregiving: Facts and Figures | Family Caregiver Alliance", 2003). Interestingly, unlike adult females, senior females' depression severity was not predicted by any of the variables of interest. This is not to say that that senior women's intensity of depression is uninfluenced by extraneous factors, rather, understanding how it is potentially impacted

requires further investigation. Further follow-up in this area should include variables other than those present in this work.

Finally, predictors of depression duration in senior females yielded results that once again were unlike male seniors' and adult females. Fowler et al. (2013) found that adult females' depression duration was predicted by positive interaction, sense of belonging, and affection. The present study found that depression duration was related to sense of belonging, age, positive interaction and tangible support in senior females. Senior females who reported a stronger sense of community belonging reported shorter durations of depression, a finding that was also present in adult females. No matter their age, women appear to benefit from feeling valued by and a part of their community. This result is an important finding when we consider long-term care planning. It may be particularly difficult for women who feel strongly connected to their communities and who flourish within them to transition to assisted living. Senior women appear to benefit from having a sense of belonging in terms of mental wellness. It would be in the interest of long-term care facilities to focus on integrating activities which promote resident belonging in order to combat depression amongst seniors (and particularly so for female seniors).

Age was also a predictor of depression duration in senior females: increased age meant older women were more likely to report longer durations of depression. Fowler et al. (2013) did not observe age as a predictor of depression duration in adult females. Several hypotheses are plausible when we consider why older age negatively impacts depression duration in senior women. First, simply by virtue of being older, one is able to

report having spent a longer time feeling depressed. Second, it is possible that senior women's increased age coincided with longer periods of depression due to factors that arise from living longer. Women tend to live longer than males (Arias, 2015). Males (who reported less intense depression severity as they aged) may be more likely to have the company of their female friends and family. Senior women, however, may find themselves reaching older ages without the support of their loved ones and living with increased medical conditions which in turn may contribute to extended periods of depression. This idea aligns with research that has cited widowhood as one of the most distressing life events that aging women experience (Anusic & Lucas, 2013; Bennett, 1997). Compared to other stressors, loss of a spouse requires results in a significant period of time needed to recover and return to functioning (Anusic & Lucas, 2013). Third, it is possible that growing older in general is more emotionally taxing for women who may feel less valued because of their changing, older appearance (Chonody & Teater, 2016; Calasani, 2005; Featherstone & Hepworth, 2009; Jackson, Janssen, Appelhans, Kazlauskaite, Karavolos, et al, 2014). Women are burdened with intense pressure to conform to a certain physical aesthetic, one in which a youthful appearance tends to be deemed most desirable (Cruikshank, 2003). Aging in this way is a complex, gendered experience that is tied to sexism. It has been argued that there is a double standard when it comes to aging where women are more likely to experience ageism and invisibility as they grow older in comparison to men (Hatch, 2005; Sontag, 1972; Twig, 2004; McConatha, Hayta, Rieser-Danner, McConatha, & Polat, T.S., 2004; Chonody & Teater, 2016). These physical standards of beauty oppress women and influence their

self-worth. Longer durations depressed may be intertwined with feeling less valued as a woman of older age. Fourth, as women transition into their later years, they take on roles and social identities that are different from those assumed during early and mid-life (Chrisler & McCreary, 2010; August 2015). As women experience changes in their roles as parents, spouses, and workers, their goals and ambitions may also shift (Mitchell & Helson, 2016).

These factors could impact the length of time depression is experienced. Mitchell and Helson (2016) examined women ages 61-70 and suggested that women's positive aging during this phase of life may be related to their sense of purpose. The researchers noted that women's attachment style, personality traits, depression diagnosis, life events (like transitioning to retirement), and life situations (death of a parent or spouse, for example) were connected to senior women's experience of aging (Mitchell & Helson, 2016). The manner in which women adjust to their changing position and identities appears positive when senior women feel empowered and have a sense of purpose (Mitchell, 2009; Mitchell & Helson, 2016). Finally, older depressed female seniors may report longer depression durations due to the limitations they experience (finances, and physical ability, for example). This last theory may also help understand why the present study found that increased tangible support was related to longer durations of depression in senior women. Nevertheless, the Wareham et al. (2007) application of the norm of reciprocity in adult women may still be relevant here as well. Older women too may feel worse and for longer periods when they are concerned about returning tangible resources when their well of reserve is lower. They may also still find it difficult to be the recipients

of intimate, tangible care (and perhaps even more so if they have provided intimate care to same aged friends or spouses who have passed away). An encouraging finding in the present study was that senior females who reported more positive social interaction seem to experience shorter periods of depression. Engaging with others in positive ways appears to benefit both adult and senior women (Fowler et al., 2013). Affection predicted shorter durations of depression in adult women but this was not the case for senior women.

At first glance, the findings of this study may seemingly be unrelated to existing depression literature amongst seniors. That is, the literature review presented earlier points to geriatric depression manifesting itself in terms of suicidality, caregiver stress, and service usage in the healthcare system, all of which can be considered as separate entities. The severity and duration of depression in a senior population has not been widely assessed. The findings in the current study could be thought of as yet another way in which depression operates in a senior population. Instead of conceptualizing the present findings as discrete, separate results, however, they can also be interpreted as representing facets of seniors' social worlds. So, social support and community belonging may in fact fall under the previously presented categories of senior depression. Perhaps the manner in which seniors with depression present or avail of services can also be thought of as representing forms of social support (be it tangible, emotional/ informational, positive interaction, or affection). For example, there is a wealth of literature that highlights depression as a major contributing factor to being a frequent user of primary health care (for a review of this literature, see Gill & Sharpe, 1999). Menchetti

et al. (2006) revealed that elderly persons who met diagnostic criteria for depression were twice more likely to frequently use primary care services than elderly persons who did not meet diagnostic criteria. It is possible that primary health care may function as a way for depressed seniors to cultivate informational support and positive social interaction. Interestingly, one study found that predictors of frequent primary care attendance amongst the elderly was predicted by depression, presence of a physical disorder, somatization and perception of low social support (Sheenan, Bass, Briggs, & Jacoby, 2003). Further statistical investigation through multivariate regression revealed that only somatization and perception of low social support remained significant (Sheenan et al., 2003). This observation highlights the need for seniors to have contact with others and their desire for support. Similarly, the need for materials and tangible support could also explain the findings from Moussavi et al. (2007) whereby depressed seniors who had been newly admitted to nursing homes were more at risk of death than non-depressed patients. The authors suggested that this finding could in part be explained by depressed patients' diets lacking in nutritional value. Nutrition in this sense is a form of tangible support, one which may require greater attention in a depressed elderly population.

While caregivers were not the focus of this study, the impact of positive social interaction should not be underestimated. The importance of positive social interaction is underscored in the finding of Dendukuri, and Yaffe (2004) that caregivers of depressed elderly reported poorer health and quality of life. It may be difficult for depressed seniors to offer positive interaction to those caring for them by virtue of their illness. When caregivers receive little positive interaction they may feel more stressed and in turn be

less able to provide this type of support for those they care for. Dendukuri and Yaffe (2004) noted that caregivers also have additional stressors whether it is less time for self-care or financial resources. When considered with a social lens, how depression functions on a healthcare/systems level as well as within an individual's personal life can be understood as their need for a type of social support.

Depressed seniors who have limited physical abilities may also have compromised accessibility issues which prevents them from engaging in their communities. Those less able to participate in their communities are likely more at risk of having less-developed community belonging. So, while depression across the literature seemingly impacts a myriad of distinct entities, all of these separate findings can be reconsidered as subtypes of social support or community belonging.

4.2 Conclusion

The aim of this study was to determine if associations exist between four types of social support (positive interaction, tangible support, affection, and emotional/informational support) and community belonging in relation to depression severity and duration in a sample of Canadian seniors. Relationships between these variables and depression in a sample of seniors emerged. These findings were further examined by conducting separate binary gender analyses. Men and women's depression duration and severity related differently to the various types of social support and community belonging.

In the overall sample, less severe depression symptomology was associated with increased tangible support. Increased community belonging, positive social interaction,

and affection were associated with shorter durations of depression. Longer durations of depressive symptoms were associated with increased age and tangible support.

The results of the separate gender analyses indicated that less severe depressive symptoms are associated with increased tangible support and increasing age in male seniors. Shorter durations of depression were associated with increased affection in elderly men. No significant predictors of depression severity were found in the sample of senior women. Lower depression duration was predicted by increased sense of belonging and positive interaction in female seniors. Increased age and tangible support were associated with longer periods of depression in elderly women.

4.3 Limitations

The primary limitation of this study is its correlational nature. While relationships among social support, sense of community belonging and depression severity and duration emerged, it cannot be claimed that these factors cause differences in depression. A range of variables that are known to impact depression were not included in the analysis (socioeconomic status, marital status, racial status, and life events among them). In addition, the directionality of results could be interpreted differently. For example, greater levels of tangible support was related to longer depression durations in male and female seniors. It is possible that the partcipants' long duration of depression means that they needed to receive greater tangible support. Likewise, reporting higher community belonging was considered health-enhancing in this study. It could also be the case that seniors whose are less severely depressed or depressed for a shorter period are healthier

and more able to engage in their communities, thereby having reported better mental health.

Issues that are inherently linked to self-report (ie: participants' understanding of the questions asked, respondent honesty, response bias, discrete rating scales as opposed to finely use of finely nuanced scales or interviews and interoceptive ability) are also a limitation of this research.

Community belonging was assessed simply by way of one question in this study. This contrasts social support which was further broken into four distinct categories. Conceptualizing a person's sense of belonging in a singular way can also be considered a limitation of this research. Since this question was not finely nuanced like those falling under social support, it is possible that respondents' interpreted this question differently and their answers reflect more subjective responses. To remedy this gap, future work should make use of tools that capture various aspects of community belonging. For example, the Social Capital Assessment Tool includes structural items (participation in organizations, frequency of collective action, degree of citizenship, and institutional linkages) as well as cognitive components (emotional support, harmony, belonging, and informational support) (Kawachi, 2010).

The present cross-sectional analysis used made use of an older dataset in order to draw comparisons with adults in the Fowler et al. (2013) study. The findings of this study therefore represent a snapshot of seniors from 2001 and not those of seniors today. We cannot conclude for certain that the relationships that emerged from this sample would precisely echo data taken from today's seniors. Having a sample from a less recent

population means that seniors were also diagnosed with depression in accordance to an older version of the DSM (DSM-III-R). While the DSM-5 is the current standard of practice, this difference is not of significant concern since bereavement exclusion criteria was introduced in the fourth version of the DSM and has since been removed in DSM-5. As well, while the short form of the CIDI uses an older version of the DSM for its MDE criteria, it maps onto the current version of the ICD. In addition, the 2001 CCHS did not include Ontario or Manitoba. While a vast picture of Canada is captured in this analysis, the populations from these provinces would add more information to the overall national picture of senior depression.

Significant results were found in this study. However, the effect sizes were very small and the variables of interest accounted for little of the variance. The extent to which there are substantial differences between these factors should be considered with caution. The degree to which we attribute the findings to the variables in question should certainly be considered. As mentioned, there are undoubtedly other variables that warrant investigation when considering the severity and duration of depression amongst seniors. Other variables may account for far more variance and have greater implications in understanding the scope of depression in the senior population.

Finally, the findings in this study are limited in terms of conceptualizing gender and sex. Participants were asked to identify as being male or female. It is assumed that the individuals in this work are experiencing their worlds as heterosexual, cisgendered individuals when it is possible that those outside of this gender binary are included. The postulations made in the discussion as to why males and females relate to these variables

differently applies to cis men and women. The conclusions drawn from this study represent a narrow idea of gender. It is plausible that trans, bisexual, gay, lesbian, and queer seniors' depression relates different to social support and community belonging.

4.4 Strengths

A great deal of attention has been given to geriatric depression, however, less has been given to the roles of social support and community belonging in relation to how the elderly experience depression. Further, this analysis was able to draw comparisons to a previous work which assessed these variables in adults. This study uses data from the Canadian Community Health Survey (CCHS) which included participants from a large and nationally representative sample. These findings can be generalized to the Canadian population from which they were taken. Although the effect sizes were small, the findings align with current literature and make theoretical sense.

4.5 Implications

Though the effect sizes of this study were small, significant results warrant attention. Policy makers may find the results of this study helpful in structuring communities and meeting the needs of large populations of seniors. Increasing community belonging, social interaction, and affection to potentially aid in diminishing depression duration is useful in planning seniors' care. The findings from the present study may inform the kinds of long-term care facilities, health and home environments provided to seniors from a medical institutional standpoint as well. Factors that may best promote the mental well-being of seniors should be given consideration in systemic planning both with the goal of preventing and ameliorating depressive symptoms. The

results of this study may provide useful information pertaining to seniors' experience of depression.

Family members, friends, physicians and psychologists interacting with seniors may benefit from being aware of gender differences in the experience of social support and its relationship to depression. Specifically, the present study suggests that senior males benefit from tangible support (in relation to depression severity) and affection as well as increased age (in relation to depression duration). In contrast, female seniors' depression severity was not predicted by the variables of interest in this work, improved depression duration was associated with increased sense of belonging and positive interaction.

It should be noted that the present study is not experimental and therefore, causality between depression severity, duration, social support and community belonging cannot be confirmed. The information provided by this research should be integrated with caution if using it to inform policy and practice. This work has demonstrated relationships among variables, however, the direction or order of these relationships cannot be clearly established. For example, affection could predict depression duration, but duration itself could also predict a person's expressed affection. Furthermore, variables that were not included as part of this study's focus could also explain relationships between social support, community belonging and the experience of depression in seniors. Use of an experimental design would help draw causal conclusions and further inform geriatric psychology and organizations that serve seniors.

4.6 Directions for Future Study

Seniors' mental health can be further investigated by continuing to focus on lifestyle trends that help or hinder social support and community belonging. Support can also be given by paying heed to research that seeks to discover ways to improve geriatric wellness through social interventions. The present work revealed a number of significant relationships which can be built upon for future research. The associations found in the current study can be specifically investigated in different populations of seniors (the young-old versus the old-old, veterans, disabled, individuals living in long-term care, etc.). It should also be further examined in a more gender-inclusive way where trans, queer, bisexual, lesbian and gay individuals are considered. Gaining more thorough perspective on which factors reduce the severity and duration of depression better informs prevention and intervention practices. While the current work cannot infer causality, it would be quite interesting to build upon the findings in this study by adding a qualitative component. For example, this study found that increased age was associated with better depression outcomes in males and longer periods of depression in women. Better insight as to why this may be could certainly be highlighted by analyzing themes that emerge from conversations. Such rich data is the kind that can only truly be captured through researcher-participant dialogue. Similarly, gaining a better understanding as to how male and female seniors perceive tangible support (and specific aspects of this variable) would also help to clarify how this construct influences the severity and duration of depression in the elderly. Future research could aim to discern what changes in social environment help or hinder depression severity and duration of depression.

Attention to factors including socioeconomic status, race/ethnicity and marital status

could also shed light on how depression impacts the elderly.

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Tables

Table 1

Provincial Distribution Frequencies

Province	N	%
Newfoundland and Labrador	24	3.8
Prince Edward Island	19	3.0
Nova Scotia	59	9.4
New Brunswick	48	7.7
Quebec	174	27.8
Saskatchewan	46	7.3
Alberta	91	14.5
British Columbia	163	26.0
Yukon/Northwest Territories/ Nunavut	3	.5
Total	627	100.0

Table 2
Means for the Four Study Subtypes

Variable	*M*	*SD*
Social support		
Tangible	11.61	4.382
Affection	8.98	3.399
Positive social interaction	11.24	4.437
Emotional/informational	23.30	8.408
Sense of belonging to local community	2.32	1.023
Depression scale score	5.06	1.605
Duration of depression (number of weeks)	12.78	14.154

Note. $N = 627$

Table 3
Means for the Four Study Subtypes for Males and Females

Variable	Males (*n* = 172)		Females (*n* = 455)	
	M	*SD*	*M*	*SD*
Social support				
Tangible support	12.18*	4.178	11.40	4.442
Affection	8.79	3.621	9.05	3.313
Positive social interaction	10.92	4.820	11.36	4.285
Emotional/informational	22.46	8.859	23.62	8.219
Sense of belonging to local community	2.26	1.029	2.35	1.021
Depression scale score	4.90	1.474	5.11	1.474
Duration of depression (number of weeks)	12.60	14.052	12.84	14.207

Note. N = 627

Table 4
Summary of Stepwise Regression Analysis for Variables Predicting Severity of Depression

Variable	*B*	*SE B*	*R*	*R²*
Step 1	-.035	.014	.098*	.010
Tangible social support				

Note. *N*= 627
*p < .05

Table 5
Summary of Stepwise Regression Analysis for Variables Predicting Duration of Depression

Variable	B	SE B	R	R²
Step 1	-.645	.140	-.183***	.034
Positive social interaction				
Step 2				
Positive social interaction	-1.088	.177	-.309***	.059
Tangible social support	.701	.174	.202***	---
Step 3				
Positive social interaction	-.773	.214	-.220***	.069
Tangible social support	.827	.180	-.239***	---
Affection	-.760	.293	-.154**	---
Step 4				
Positive social interaction	-.727	.214	-.207***	.078
Tangible social support	.854	.180	.247***	---
Affection	-.795	.292	-.161**	---
Age	1.325	.560	.094*	----
Step 5				
Positive social interaction	-.657	.216	-.187**	.085
Tangible social support	.789	.182	.228***	---
Affection	-.731	.293	-.148*	---
Age	1.280	.558	.090*	---
Sense of belonging to local community	1.300	.595	.088*	---

Note. $N= 627$
*p < .05
**p ≤ .01
***p ≤ .001

Table 6
Summary of Stepwise Regression Analysis for Variables Predicting Severity of
Depression for Males

Variable	B	SE B	R	R²
Step 1	-.065	.405	.166*	.028
Tangible social support				
Step 2	-.206	.100	.229*	.052
Age				

Note. N = 163
*p <.05

Table 7
Summary of Stepwise Regression Analysis for Variables Predicting Duration of
Depression for Males

Variable	B	SE B	R	R²
Step 1	-1.295	.399	.247*	.061
Affection				

Note. N = 163
*p <.05

Table 8

Summary of Stepwise Regression Analysis for Variables Predicting Duration of
Depression for Females

Variable	B	SE B	R	R²
Step 1	2.788	.674	.193***	.037
Sense of belonging				
Step 2				.061
Sense of belonging	2.751	.666	.190***	
Age	2.206	.659	.154***	
Step 3				.071
Sense of belonging	2.478	.674	.171***	
Age	1.986	.663	.139***	
Positive social interaction	-.378	.70	-.105*	
Step 4				.117
Sense of belonging	1.999	.666	.138*	
Age	2.215	.649	.155***	
Positive social interaction	-.1050	.218	-.290***	
Tangible social support	.946	.197	.284***	

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