RESTORING BALANCE:
DETERMINANTS OF HEALTH AND
DEPRESSIVE SYMPTOMS IN ABORIGINAL PEOPLE

A Thesis

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Abstract

The results of the 2000/01 Canadian Community Health Survey (Statistics Canada, 2002) indicate that the off-reserve Aboriginal population was 1.5 times more likely than the non-Aboriginal population to experience a major depressive episode. Aboriginal people struggle with determinants of health. Our knowledge of the extent to which determinants are related to depressive symptoms is limited and research is needed to understand this complex issue. Population health research is conducted with a focus on health determinants that affect groups of people rather than individuals (Jeffery, Abonyi, Labonte, & Duncan, 2006). This exploratory study was conducted from the population health approach described by Kindig and Stoddart (2003) and investigated the relationship between nine determinants of health and depressive symptoms among 7,770 Métis and 2,314 Inuit respondents of the 2001 Aboriginal Peoples Survey. The relationship between anxiety symptoms for the Inuit as well as alcohol use for all 29,592 Aboriginal respondents (i.e., Métis, Inuit, and North American Indian) and determinants of health were also explored. Results suggest that there were significant relationships between depressive symptoms and income level, physical/social environment, social support, health services, and culture for Inuit and Métis respondents. Results also suggest that anxiety was significantly related to social support, community satisfaction, and feeling safe at home alone. For all Aboriginal respondents, alcohol use was related to social support, contact with a social worker/counsellor/psychologist, being diagnosed with health problems, self-rated health status, and use of Aboriginal language in the household.

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Dedication

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1. INTRODUCTION AND LITERATURE REVIEW

1.1 Overview

The World Health Organization (WHO, 2005) asserted that it is imperative for all countries to act to improve the determinants of health; action should include poverty relief as well as providing opportunities for populations to pursue the broader goal of improving lives and working conditions. Also noted was that improving health is a multi-sectoral endeavour that will yield multi-sectoral benefits, so action is required from many sectors of government and society to assist people in making healthy choices.

'Determinants of health' refer to the complex interactions between social and economic factors, the physical environment and individual behaviour that determine health at every stage of life (Public Health Agency of Canada, 2003). The Agency noted that health status is determined by the combined influence of the determinants of health rather than by determinants existing in isolation from each other. The Canadian Institute of Advanced Research outlined the following determinants of health: income and social status, social support networks, education, employment and working conditions, physical and social environments, biology and genetic endowment, personal health practices and coping skills, healthy child development, and health services (Evans, Barer, & Marmor, 1990). A decade later, Health Canada (1999) identified the following as determinants of health: income and social status, employment, education, social environments, physical environments, healthy child development, personal health practices and coping skills, health services, social support networks, biology and genetic endowment, gender, and culture.

There is an abundance of research linking health determinants with causes of ill health; however, further development, consolidation, and communication of the knowledge of causes is needed to spur more effective action (World Health Organization, 2005). The World Health Organization (WHO) is in the process of developing practical recommendations for people to improve health by acting on determinants. Interventions are successful in reducing disease and saving lives only when determinants of health are adequately taken into account (World Health Organization, 2005).

There is limited research linking health determinants with causes of ill health for Aboriginal people. The Royal Commission on Aboriginal Peoples (1996) used the term *Aboriginal people* to refer to all Indigenous inhabitants of Canada as a means of referring in a general manner to Indian, Inuit, and Métis people. According to the 2001 Census, 976,305 people in Canada identified themselves as having Aboriginal ancestry (i.e. North American Indian, Métis, or Inuit), which comprises approximately four per cent of the Canadian population. Almost three out of every 10 respondents lived in one of 11 Canadian urban centres. This study is limited to Métis and Inuit populations because the data available for North American Indian respondents (including on- and off-reserve First Nations respondents) was very limited. The greatest limitation of the Aboriginal Peoples' Survey was that North American Indian respondents were not asked about depressive symptoms. North American Indian respondents were only included in one exploratory regression analysis of alcohol use and health determinant indicators.

For Aboriginal people in Canada, research is needed to further our knowledge about determinants of health, particularly related to depression which is a prevalent

mental health disorder for all populations in Canada. Currently, much of the literature in this area is found in government commissioned reports. Statistics Canada (2002) analyzed the relationship between age, income, health, and depression for off-reserve Aboriginal people using results of the 2001 Canadian Community Health Survey. Only one other similar study was found in which Wu, Noh, Kaspar, and Schimmele (2003) examined racial/ethnic differences in mental health using data from the United States 1996-97 National Population Health Survey to investigate differences in economic and social factors (i.e. family income, education, social support).

The purpose of this dissertation is to understand how determinants of health are related to depressive symptoms that may affect the Aboriginal health of people. Those Aboriginals living both on- and off-reserve have been shown to struggle with determinants of health (e.g. Wilson & Rosenberg, 2002), yet the literature does not demonstrate the extent to which such determinants are related to depressive symptoms. Demonstrating the prevalence of depressive symptoms, as they relate to determinants may be important for developing public health strategies and interventions. For example, depression may be related to lack of social support, which may in turn suggest a need for community support groups or outreach programs for Aboriginal people. The relationship between determinants of health and anxiety symptoms and alcohol use were also briefly explored in addition to the main study of depressive symptoms.

1.2 Depression, Anxiety, and Alcohol Use

1.2.1 Depression

Depression is an affective illness which includes several categories as classified in The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR; American Psychiatric Association, 2000). Disturbance in mood, cognition, and behaviour characterize depression (Mohd Sidik, Mohd Zulkefli, & Mustqim, 2003). The most commonly diagnosed depressive disorders include: adjustment disorder with depressed mood; dysthymic disorder; major depressive episode associated with bipolar disorder; and mood disorder associated with a general medical condition (Ainsworth, 2000).

The number of depressive symptoms reported differentiates the type of depressive disorder that an individual may be experiencing. The DSM-IV-TR defines a major depressive episode as the experience of at least five of the following nine symptoms (at least one of which must be depressed mood or anhedonia): (a) depressed mood, (b) diminished interest or pleasure in activities, (c) significant weight loss or gain (d) insomnia or hypersomnia, (e) psychomotor retardation or agitation, (f) fatigue or loss of energy, (g) feelings of worthlessness or guilt, (h) diminished ability to concentrate, and (i) recurrent thoughts of death. At least five of the nine criteria must be met to receive a diagnosis. Symptoms must be present for at least two weeks and must cause significant impairment in daily functioning. If between two and four of the symptoms are present for at least two weeks, criteria is met for diagnosis of minor depression; if three or four of the symptoms including depressed mood, are present for at least two years, criteria is met for a diagnosis of dysthymia (Dowrick, 2004).

Aboriginal people report higher prevalence of depression than the non-Aboriginal population. According to the results of the 2000/01 Canadian Community Health Survey (Statistics Canada, 2002), 13.2 per cent of the off-reserve Aboriginal population had experienced a major depressive episode in the year prior, which was 1.8 times higher than the non-Aboriginal population. Although research demonstrates that Aboriginal people suffer from high rates of both depression and suicide and that these rates are increasing, little is known about how culture, history, depression, and suicide, are intertwined (Waldram, 2004).

1.2.2 Measuring depressive symptoms

The use of various self-report scales in research for evidence-based assessment of depression is well-established. However, the administration of questionnaires in an exploratory study may be problematic for several reasons. The inclusion of multiple questions in an already cumbersome survey may be overwhelming, particularly for Aboriginal people with depressive symptoms. Researchers have demonstrated that asking as few as two questions related to depression may be as effective as using longer instruments. The inclusion of three questions about depressive symptoms in the Aboriginal Peoples' Survey provides sufficient information to understand the relationship between depression and health determinants.

Various self-report scales have been used in research for evidence-based assessment of depression. Although optimal evidence-based assessment of depression involves a combination of certain interviews and self-report scales, recent studies have

demonstrated that measures comprising of two or three questions are as valid as other measurements for assessment of depression in research.

Thorough evidence-based assessment of depression has traditionally required procedures that are intensive and complex with a combination of certain interviews and self-report scales that are optimal for evidence-based assessment of depression (Joiner, Walker, Pettit, et al., 2005). Joiner et al. recommend that optimal evidence-based assessment of depression include the following: (a) The Structured Clinical Interview for the DSM-IV (SCID; First, Spitzer, Williams, & Gibbon, 1995); (b) the MINI International Neuropsychiatric Interview (MINI; Sheehan et al., 1998), a highly structured and relatively brief clinical interview as a supplement to assess the melancholic subtype module; (c) the Seasonal Pattern Assessment Questionnaire (Rosenthal et al., 1987) to assess for possible seasonal affective disorder; and (d) the BDI-II to assess severity of depressive symptoms and short-term change in depressive symptoms. The Beck Depression Inventory (Second Edition) is a revision of the BDI (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961). The BDI-II is a 21-item self-report inventory of depressive symptoms that is a very reliable and well validated index of depressive symptoms severity and is considered to be the premier instrument for the assessment of depressive symptom severity and for tracing short-term changes in severity in outpatient treatment (Joiner et al., 2005). The BDI-II has adequate internal consistency and factor structure in a sample of clinically depressed geriatric patients who were admitted to a specialized psychiatric unit (Steer, Rissmiller, & Beck, 2000).

There are a variety of other available instruments used to assess depressive symptomatology that have adequate reliability and validity (Joiner et al., 2005). The Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977) is a self-report index of depression symptoms that has demonstrated reliability and validity in a variety of samples (Joiner, Pfaff, & Acres, 2002). Joiner et al. noted however, that the CES-D does not evaluate suicidality or assess subtypes of major depression and has relatively arbitrary cut scores regarding the categorical nature of depression. The Inventory to Diagnose Depression (IDD; Zimmerman & Coryell, 1987) is similar to the BDI-II and the CES-D and has adequate reliability and validity (Uehara, Sato, Sakado, & Kameda, 1997).

Researchers have however, demonstrated that asking as few as two questions related to depression may be as effective as using longer instruments. A study conducted by Whooley, Avins, & Browner (1997) provides evidence that the most important effect of major depression may be decreased quality of life and productivity rather than suicide (Aarroll, Goodyear-Smith, Kerse, Fishman, & Gunn, 2005). Patients who visited an urgent-care clinic at a Veterans Affairs Hospital in the United States were given a self-report questionnaire that included a two-question instrument with the following two questions: "During the past month, have you often been bothered by feeling down, depressed, or hopeless?" and "During the past month, have you often been bothered by little interest or pleasure in doing things? " (Whooley, Avins, & Browner, 1997).

The patients also completed the following validated instruments utilized for detecting depression: the Beck Depression Inventory, a 21-item scale (range 0–60); the

Center for Epidemiologic Studies Depression Scale (CES-D) and the short form of the CES-D, a 20-item self-report instrument (range 0–60) that covers the number and duration of depressive symptoms; the Medical Outcomes Study (MOS) depression measure; the Symptom-Driven Diagnostic System for Primary Care (SDDS-PC), an instrument designed to assess multiple mental disorders in the primary care setting. It includes a 5-item case- finding measure (range 0–4) for depression; and the National Institute of Mental Health Diagnostic Interview Schedule (DIS).

Trained psychology students administered the diagnostic standard, the National Institute of Mental Health Diagnostic Interview Schedule (Whooley et al., 1997) to patients visiting an urban care clinic at the San Francisco Department of Veterans Affairs Medical Centre. The two-question instrument correctly identified those with depression 96 % of the time and correctly ruled out depression in 57 % of the cases in which depression did not exist. The researchers noted that the instrument would need to be tested on a more representative sample because the results of an urban Veterans Affairs population may not generalize to populations in which depression is less prevalent, or in other practice settings. A recent study demonstrated validity of verbally asking the same two questions for screening for depression of 421 patients by practitioners in New Zealand (Arroll, Khin, & Kerse, 2003).

The results of asking the two screening questions of the 421 patients participating in the recent study showed a *sensitivity* and *specificity* of 97 % (95 % confidence interval, 83 to 99 %) and 67 % (62 to 72 %, respectively). The *sensitivity* of a test is the proportion of respondents who actually have the symptoms and test positive for the symptoms on the

test used (Macdonald, 2007). The author defined the *specificity* of the test as the proportion of respondents without the symptoms and test negative for the symptoms on the test used. Arroll et al. suggested that those individuals whose responses indicated a positive screen for depressive symptoms could be asked additional questions from the depression criteria.

In another recent study, general practitioners also asked the questions in a community setting and included a question asking if the respondent wanted help. The results demonstrated validity of the questions for screening and the researchers suggested that the questions be presented to all new patients attending general practice and to those who have not seen their general practitioner for two years (Arroll, Goodyear-Smith, Fishman, & Gunn, 2005). Accurate diagnosis, effective treatment and follow-up must follow a positive screen to ensure that the benefits of screening are realized (Macmillan, Patterson, & Wathen, 2005).

The two studies did not indicate if participants from different cultures were included in the study. However, Low and Hubley (2007) conducted a Canadian study using similar measures, such as the BDI-II, and established reliability, sensitivity, and specificity of the measures with First Nations and Aboriginal populations. The questions in the Aboriginal Peoples' Survey (2001) that ask about depressive symptoms (Appendix A) are similar to previous studies and may be useful in exploring the reporting of depressive symptoms in First Nations and Inuit populations.

1.2.3 Psychosocial Stressors and Depression

Researchers have consistently demonstrated that low socio-economic status is associated with poor health (e.g. Kopp, Skrabski, Kawachi, & Adler, 2005). The results of Statistics Canada's Canadian Community Health Survey (CCHS), a population-based study conducted in 2002 that included data on some mental illnesses, indicated that 4 per cent of people interviewed in the survey reported having experienced symptoms or feelings associated with major depression in the past year (5.5 per cent females, 3.4 per cent males). The results of the survey found a relationship between income and prevalence of depression based on household income: 21 per cent of Aboriginal people who reported having low-income households also reported that they had a major depressive episode, whereas 13 per cent of Aboriginals living in middle-income households and 8 per cent of those living in high-income households reported that they had a major depressive episode. These results compare with the non-Aboriginal population, where the reporting of a major depressive episode among those living in low-income and middle-income households were significantly higher than the non-Aboriginal population, but not significantly different among the non-Aboriginal population living in high-income households.

However, the results of the 2000/01 Canadian Community Health Survey indicate that, when socio-economic factors such as education, work status and household income were taken into account and data were adjusted for differences in socio-economic factors, the off-reserve Aboriginal population was still 1.5 times more likely than the non-Aboriginal population to experience a major depressive episode in the year prior to

completing the survey (Health Canada, 2002; Statistics Canada, 2002). These results suggest that socio-economic factors alone do not provide a full explanation for the higher likelihood of reporting depressive symptomatology for off-reserve Aboriginal people (Statistics Canada, 2002).

While the Canadian statistics demonstrate that the factors related to depression in Aboriginal people may be complicated, the direction of the process in which depression is related to psychosocial stressors is also complex. Cole, Nolen-Hoeksema, Girgus, and Paul (2006) assert that the relation between stress and depression is reciprocal and that studies that focus on only one of the two processes are incomplete and potentially misleading. The authors recently conducted a study measuring childhood and adolescent depressive symptoms, separating these into stable trait and less stable state dimensions.

Cole et al. (2006) noted that trait-like depression cannot change as a function of time-specific predictors (e.g. stressful life events) whereas state-like depression is less stable and can change as a function of stressful life events. *Traits* refer to stable or enduring differences in individuals that may reflect genetic predisposition, temperament, personality, or individual habitual or ingrained ways of responding to the world (Goldston, Reboussin, & Daniel, 2006). An example of a *trait* would be persistently high levels of hopelessness, regardless of the individual's life circumstances, whereas other individuals may rarely experience hopelessness (Goldston et al., 2006). An example of a *state* may be a mood fluctuation that occurs in response to stressful life events such as the loss of a loved one. In other words, trait dimensions of depression are persistent and reflect an individual's predisposition to experience a state while state dimensions are

episodic and are characterized by cognitive reactions and autonomic or emotional responses (e.g. self-ruminative thoughts that focus on inadequacies and potential failures) (Endler, Parker, Bagby, & Cox, 1991; Kupfer, 1995). The results of Cole et al.'s study demonstrated that stressful life events (e.g. parents got divorced, grandparent died) predicted depressive symptoms, and depressive symptoms predicted stressful life events.

Recent studies have made the link between health determinants and depression, particularly determinants such as socioeconomic status and health factors (e.g. global self-ratings of health and depression) (Barger, 2006; Chen, 2004). Statistics Canada (2002) has analyzed population health survey data to investigate the relationship between age, income, health, and depression for off-reserve Aboriginal people based on results of the 2001 Canadian Community Health Survey. However, there are no studies that simultaneously investigate the determinants of health that are identified from a population health perspective (i.e. income and social status, education, employment and working conditions, physical environment, biology and genetic endowment, personal health practices and coping skills, social support networks, healthy child development, health services, and gender and culture), particularly within the Aboriginal population.

1.2.4 Anxiety symptoms and alcohol abuse in Inuit people

High rates of anxiety disorders and alcohol abuse have also been found in Inuit communities and were higher than rates for other Aboriginal communities (Haggarty, Cernovsky, Kermeen, 2000). For example, the results of a study in a Nunavut community indicated that respondents reported that the week prior to the administration of the survey, 26.5% of respondents had depression, 19% had anxiety, and 30.6% had lifetime

alcohol abuse or dependence (Boothroyd, Kirmayer, Spreng, Malus, & Hodgins, 2001). The Inuit supplement survey in the 2001 Aboriginal Peoples Survey included two items that queried anxiety symptoms. This provided an opportunity to briefly explore how respondents may experience anxiety, another symptom of psychological distress, in relation to measures of population health. A stepwise multiple regression analysis of the relationship will be included in this study.

1.2.5 Alcohol abuse in Aboriginal people

High rates of alcohol abuse have been found in Aboriginal communities. At the time that the 2001 Aboriginal Peoples Survey was administered, on an annual basis one in five people were admitted to hospital for an alcohol-related illness (Canadian Criminal Justice System (2000). The Métis, Inuit, and North American Indian respondents were asked about alcohol use. This provided an opportunity to briefly explore how all respondents may experience a potentially concerning issue in relation to measures of population health. A stepwise multiple regression analysis of the relationship will be included in this study.

1.3 Population Health Framework

The population health framework will be the conceptual framework of this study. As a Community Population Health Research student training fellow, I have been trained in developing research within a population health framework. Population health researchers focus on health determinants that affect groups of people rather than individuals (Jeffery, Abonyi, Labonte, & Duncan, 2006). The population health approach aims to improve the entire population's health and to reduce health inequities among

population groups (Public Health Agency of Canada, 2002). Population health researchers focus on how social factors and social structures interact with themselves and other biological factors that may explain why some people are healthy while others are not (Health Canada, 1999). An evidence-based approach is used, with a focus on the determinants of health, to identify conditions that affect health. The knowledge acquired is utilized to develop strategies to improve the underlying and interrelated conditions in the environment that facilitate health and to reduce inequities in the underlying conditions that cause some Canadians to be at a disadvantage for attaining and maintaining optimal health (Kindig & Stoddart, 2003; Minister of Public Works and Government Services Canada, 1999). Exploring depression in Aboriginal people of Canada from a population health perspective will provide a better understanding of the health care needs of Aboriginal people.

"Health" has been described in the literature in many ways and by different agencies such as the World Health Organization, Health Canada, and later by researchers using a population health model. The World Health Organization (1986, p. 1) viewed health as "a resource for everyday life, not the objective of living" and noted that health is a "positive concept emphasizing social and personal resources, as well as physical capacities". The Ottawa Charter for Health Promotion adopted the World Health Organization's definition of health as the most appropriate guiding definition for Canadian health policy (MacLeod, 1997). VanderKloor (2005) recently defined health as a state of being of an individual or group at any point in time and is characterized by stability, balance, and integrity of functioning. The health of a population, from a

population health perspective, is measured by health status indicators and is influenced by determinants of health (i.e. social, economic, and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health services) (Kindig & Stoddart, 2003). The complex interaction among determinants can significantly affect health, for example, unemployment can lead to social isolation and poverty, which could influence an individual's psychological health and coping skills, which could lead to poor health (Canadian Public Health Agency, 2002).

Health Canada's recent focus on population health provides an opportunity to build on past research in the health sector (Health Canada, 2002). The federal government's White Paper, *A New Perspective on the Health of Canadians* (Lalonde, 1974) was significant because the author posed the idea that health status of populations in industrialized nations were potentially more likely to improve with changes in lifestyles, social and physical environments, and biology, rather than in allocating more resources to the existing health care delivery systems. The 1974 Lalonde report was positively received and spurred a number of health promotion programs that successfully increased awareness of the health risks associated with personal behaviours and lifestyles such as smoking, alcohol, nutrition, fitness and mental health (Public Health Agency of Canada, 2002). In the 1990s, the Ottawa Charter for Health Promotion expanded on the White Paper with a focus on the broader social, economic, and environmental factors that affect health (MacLeod, 1997). Social scientists began to make new suggestions based on the expanded focus, such as indicating that the health of Aboriginal people is arguably

linked with socioeconomic conditions (e.g. Comeau & Santin, 1990; Marmot, Kogevinas, & Elston, 1987).

The population health framework was then introduced to provide a more complete conceptualization of health for researchers. In 1989, the Canadian Institute for Advanced Research (CIAR) introduced the population health concept and proposed that individual determinants of health interact and can have a far more significant effect on health because of the interactions (Public Health Agency of Canada, 2002). In 1994, the federal, provincial, and territorial Ministers of Canada officially endorsed the population health model in a report that summarized the following as key factors that have an influence on health: income and social status, education, employment and working conditions, physical environment, biology and genetic endowment, personal health practices and coping skills, social support networks, healthy child development, health services, gender, and culture (Health Canada, 1999; Kindig & Stoddart, 2003; Vanderkloor, 2005).

The broader social, economic, and environmental factors that interact to influence health are referred to as "determinants of health" such as income level, education, the physical environment where an individual lives and works (Public Health Agency of Canada, 2002). For example, unemployment can lead to social isolation and poverty, which in turn influences one's psychological health and coping skills. Together, these factors can then lead to poor health.

As we learn more about how these interactions affect health, we will better understand why and how policies and different health approaches affect the health of a population. For example, policy development that involves employment strategies may

be ineffective if depressive symptoms are not addressed prior to providing opportunities for employment. Exploring the relationships between reporting of depressive symptoms and health determinants may also provide insight into the reasons that some groups within populations are healthier than others in spite of the fact that all Canadians have access to the health care system. Lack of transportation for example, may be a significant barrier to access to health care that caregivers may assume to be an issue of treatment noncompliance. Outreach services via telephone to monitor patient care and provide support may be developed to accommodate transportation problems.

1.4 Population health

While population health has a unique focus on factors that affect health, researchers and theorists have difficulty arriving at a consensus about a widely accepted definition of population health (Kindig & Stoddart, 2003). The problem with consensus arises from having different population health models with each model having different definitions of population health (Friedman & Starfield, 2003). Population health is a relatively new term to which some researchers refer as a concept of health while others refer to as a field of study of health determinants (Kindig & Stoddart, 2003). Recently, Kindig and Stoddart (2003) and others have proposed definitions to facilitate agreement among researchers. As one definition, the authors suggest that population health refers to the "health outcomes of a group of individuals including the distribution of such outcomes within the group" (p. 380) and includes health outcomes, patterns of health determinants, and policies and interventions that link health outcomes with patterns of health determinants.

Although population health researchers have yet to reach consensus among them about a definition of population health, they have demonstrated an ability to work collaboratively with government sectors to develop strategies and policies (Health Canada, 1998). Further noted was that population health research becomes a collaborative effort, building alliances with other sectors to improve health that include finance, justice, housing, education, recreation, the physical environment, employment, transportation and social services. Ideally, according to Health Canada, the outcome of these collaborative efforts between government sectors will be new public policies that increase the health of Canadian populations.

A population health approach is different from approaches that guide traditional medical and health care in two main ways (Minister of Supply and Services Canada, 1994). First, population health strategies address factors that influence health rather than focus on risks and clinical factors related to particular diseases. Second, a population health approach focuses on interrelated conditions and factors that influence the health of populations, whereas the focus of traditional medical and health care is on one individual at a time and typically those who have a health problem or are at significant risk of developing a health problem (Minister of Supply and Services Canada, 1994).

Historically, population health researchers have analyzed determinants from the medical and genetic fields of science (Van Kemenade, 2003). When population health emerged in the early 1980s as a guiding framework for public health policy and practice in Canada, population health was criticized for having an atheoretical framework. Robertson (1998) expressed concern that the central health strategy of population health

(i.e., producing more wealth overall) may not necessarily improve the health of the most vulnerable individuals, or the general level of health unless there is consideration of who benefits. The author asserted that although population health is presented as being grounded in a theoretically neutral epidemiological account of health that is based on morbidity and mortality rates, population health does not appear to be based on any theory of society and social change. He noted the resemblance of the implicit theory of population health to the 'trickle-down' theory of market-based capitalism of the conservative economic thinking during that era. That is, the population health theoretical framework suggests that adjustments in the economy will bring about social change and that if resources are shifted out of the health care sector and into the productive sector, greater wealth will be produced, which will in turn produce more health for everyone. Essentially, the theory lacks any consideration of the association between capitalism (i.e., power, privilege, and structural inequity) and its direct effects on health.

Robertson asserted that research that demonstrates that poverty is a major risk factor for poor health informs us that social, political, and economic arrangements are negatively associated with people's health. He suggested that researchers propose theoretical frameworks that would account for the dialectical relationships that are claimed to exist between health and social phenomena (e.g. poverty and racism). Other researchers also suggested that social theories provide a framework for understanding the social processes and hypothesizing about how and why social processes are relevant to health. The structure-agency duality is a basic analytic theme in social theory, where

structures are social institutions (e.g. family, political institutions) and agency refers to an individual's capacity to act deliberately or to exercise power (Yen, 2005).

Van Kemenade noted that only in the past two decades have scientists realized that social and economic societal structures have consequences for health and subsequently have begun to investigate the effects of income, unemployment, poverty or social networks on health status. Research emphasis has shifted from assessment of traditional health status indicators such as death, disease and disability to indicators related to social and mental well-being, quality of life, life satisfaction, income, employment and working conditions, education, and other factors (Health Canada, 1999). Factors such as social aspects of life (e.g. the social environment such as family and friends, social networks, mutual trust, civic participation, community engagement) had not previously been clearly specified or measured as indicators having effects on the health of individuals (Van Kemenade, 2003). This researcher noted that recently, population health researchers are investigating indicators to demonstrate a link between the individual and the social environment, with a focus on neglected factors such as community factors and factors related to "social support".

1.5 Population Health and Policy

Population health, an approach to explore why different disease burdens or risks exist among different social groupings, encompasses the primary determinants of health in human populations (Labonte et al., 2005). There have been improvements in Aboriginal health over the past decades, but the health care system has not rectified the disparity in such areas as life expectancy, mental illness, infectious disease, and others

(Smylie et al., 2000). Current issues that are important to First Nations communities are disparities between people living on- and off-reserve, self-government, and the rapidly growing needs of a population that historically has not been adequately served by a variety of programs and services (NAHO, 2002). One of the recommendations of The Royal Commission on Aboriginal Peoples was that long-term structural changes in government relations and economic development are a part of health strategy (Smylie et al., 2000). Population health research similarly offers an evidence-based critique of government policy but falls short by not articulating government policy options that are clear and achievable (Labonte et. al, 2005).

Population health research has 'under-theorized' the role of socioeconomic and political inequality in creating illness, to avoid the implications of a critique of power relations (Labonte et. al, 2005). Such an avoidance approach limits the difference that researchers may make by articulating policy options that might begin to improve the socioeconomic conditions that contribute to ill health (Labonte et. al, 2005). Policy-relevant community-sensitive research on population health determinants that is conducted with an interdisciplinary base is recommended to explore more critical questions about the causes and consequences of health inequalities (Labonte, 2005).

The challenge is to make population health research relevant to Aboriginal policy and planning needs. For example, Saskatchewan Population Health and Evaluation Research Unit's (SPHERU) model that represents broadly defined categories of health-determining conditions that affect each other enables for the study of health impacts at different levels of organization and the relationships between each level of organization

as the levels influence one another (Labonte, 2005). First Nations have also been successful in establishing the social and cultural structures necessary to produce knowledge that decolonizes the health of First Nations and counters pre-existing knowledge, developing new forms of health information systems that are geared toward First Nation wellness, and create new institutional research partnerships (Elias & O'Neil, 2004). The First Nations Inuit and Regional Health Survey initiated a process of building partnerships to develop population health that is owned, controlled, and accessible to First Nations (Elias & O'Neil, 2001). The Manitoba First Nations Centre for Aboriginal Research has been successful in research initiatives that demonstrate the necessity to build social capital through a process that is owned, controlled, and accessible to First Nations in order to build human capital in population health research (Elias & O'Neil, 2001).

1.6 Determinants of Health and Aboriginal People

Aboriginal people generally have been identified as having the same determinants of health that affect all Canadians (Canadian Institute for Health Information, 2004; Wilson and Rosenberg, 2002). However, Aboriginal people have also identified distinct factors, or key determinants of health, that contribute to their health status. Poorer social and economic conditions, for example, may contribute to lower health status of Aboriginal people compared with non-Aboriginal people in Canada (Canadian Institute for Health Information, 2004). The determinants of health described by the Public Health Agency of Canada (2001) are: income and social status; education; employment and working conditions; physical environment; biology and genetic endowments; personal

health practices and coping skills; social support networks; healthy child development; health services; culture; and gender. The nature of the relationship between determinants of health and depression for Aboriginal people is unknown. The determinants of health need to be explored as variables related to the reporting of depressive symptoms for Aboriginal people.

1.6.1 Income and social status

According to Health Canada, income level and social status seem to be the most important health determinants (1999). Health Canada noted that populations in societies that are prosperous and have an equitable distribution of wealth are the healthiest populations. Poverty is associated with unfavourable living conditions such as bad housing and inadequate diet (Van Kemenade, 2003). While the higher number of total siblings in the household has been found to increase the risk of hunger by 40 per cent, Canadian wages do not recognize family size and the number of children (McIntyre, 2003).

Research evidence suggests that low socioeconomic status may be indirectly related to some mental health problems (e.g. aggressive behaviour, low self-esteem, inability to cope with life's challenges) and that the psychosocial impact of relative poverty may also influence health (World Health Organization, 2005). Researchers assert that poverty increases the likelihood of exposure to chronic and acute stressors such as residing in an unsafe neighbourhood, problems with housing and transportation, and insufficient food (e.g. Siefert, Finlayson, Williams, Delva, & Ismail, 2007).

Although the intersection between race/ethnicity and socioeconomic status has commonly been used to explain health disparities between visible minorities and non-minorities, health disparities may persist when socioeconomic status is controlled (Wu, Noh, Kaspar, & Schimmele, 2003). Living in poor communities and having unmet basic economic and social needs may present challenges for many Aboriginal people. Social conditions that have an adverse impact on the health status of Aboriginal individuals and become major barriers to health care include poverty, inadequate housing, unsanitary water supply and waste disposal, low educational achievement, unemployment, alcohol and substance abuse, dependence on social assistance, discrimination (i.e. justice system), and environmental exposures (Smylie, 2000). Smylie noted that poverty has an adverse effect on an Aboriginal person's ability to maintain a nutritious diet, travel to medical appointments, and participate in recreational activities. Wu et al.'s (2003) findings were not significant for socioeconomic differentials as affecting depression in racial/ethnic minorities (except for Aboriginals who experienced a comparatively higher rate of depression before socioeconomic status controls were introduced). Further research is warranted to investigate the relationship between socioeconomic status and depression in Aboriginal people, as well as other social conditions. For example, for the purpose of this study, respondents of the Aboriginal Peoples Survey who report lower income would be expected to report higher depressive symptoms.

1.6.2 Education

Aboriginal people have made some gains in acquiring education compared with non-Aboriginal people (while a significant portion of the Aboriginal population has not

made gains). Aboriginal people have had access to post-secondary education in numbers that equal non-Aboriginal people (2001 Census, Statistics Canada). According to the 2001 Census results, Aboriginal people aged 25 to 44 years in the Census Metropolitan Areas who completed a university degree reported having employment rates that were equal to rates of non-Aboriginal people who were in the same age range (Siggner, & Costa, 2005). However, the results also indicate that 35 per cent of the Aboriginal population who are in the 25 years or older category and are living in Regina reported not having a high school education certificate (2001 Census, Statistics Canada). Reading and Wien (2009) also assert that there is very limited representation of Aboriginal people with higher education, particularly with postsecondary certificates, diplomas, and degrees, with the Inuit as the most disadvantaged regarding educational achievement among Aboriginal people.

Illiteracy and low literacy have direct impacts on the health of Aboriginal people, such as becoming a source of frustration and embarrassment that may cause reluctance to access programs and build social support networks (MacLeod & Associates, 1997). The results of the International Adult Literacy and Skills Survey (Statistics Canada, 2003) indicated that in Saskatchewan approximately 60 per cent of the Aboriginal population scored below Level 3 on the prose literacy scale (the desired threshold for coping with the increasing skill demands of a knowledge society), compared with 39 per cent of the non-Aboriginal population in Saskatchewan. The results suggest that illiteracy and low literacy are significant barriers to various services, particularly if forms are required.

While Aboriginal people have made some gains in acquiring education, the results demonstrate a need to further understand the relationship between education and depression. Lower levels of education, for example, may be expected to be associated with higher reporting of depressive symptoms if respondents do not have the skills to meet the demands of society.

1.6.3 Employment and working conditions

Employment is also considered to be a determinant of health (First Nations and Inuit Health Branch, 2002). McIntyre (2003) asserted that there is a relationship between hunger and income decline as a result of recent trends in seasonal employment and casual labour (part-time and temporary employment). Overall, the Aboriginal people living in Census Metropolis Areas (CMAs) were doing better financially in 2000 than in 1980 (Siggner & Costa, 2005). For example, there was an increase of 281% in the number of Aboriginal people who earned incomes of $40,000 or more (from 7,400 to 25,500) compared with an increase of 86 % among non-Aboriginal people. Growth was also reported in Aboriginal employees earning an income in the under $2,000 range and in the $5,000 to $14,999 range.

A study of the labour force in Western Canada (Statistics Canada, 2007) found an increase of 23% for Aboriginal employment between 2001 and 2005, which was twice the rate of growth for non-Aboriginals (11%). Siggner and Costa (2005) explained that a portion of the growth has been because of a natural increase in population and net migration. However, the authors cautioned that the reported improved income may partially be the result of a change in respondents' reporting of their identity (from non-

Aboriginal to Aboriginal) on the census forms compared with the 1981 census. These trends are similar to changes in reporting that have been observed among Indigenous populations in the censuses in America, Australia, and New Zealand. Employment disparities continue, for example, with a decline of some occupations such as management (an area in which there has been relatively few Aboriginal workers) in which 53,000 jobs were lost between 2001 and 2005 (Statistics Canada, 2007). Increased restrictions on social assistance and employment insurance also cause financial difficulties for families, particularly for parents who are supporting a new infant (McIntyre, 2003).

While employment rates for Aboriginal people have reportedly increased overall, there continues to be a gap in the rate of employment between Aboriginal and non-Aboriginal people. In some geographic areas, particularly in Saskatchewan, where Aboriginal people continue to have the lowest employment rates and the highest unemployment rates between 2001 and 2005 compared to other Western census metropolis areas (Statistics Canada, 2007). Aboriginals living in Regina also appear to face challenges as the gaps remained larger than in other provinces. Statistics Canada Census results suggest that for Aboriginal people aged 25-54 years, employment rates have improved in most Census Metropolitan Areas (CMAs) except in Regina, where the employment rate fell from 59 per cent to 55 per cent (Siggner & Costa, 2005). The results also indicated that the median total income was only slightly more than half for Aboriginal individuals living in the two prairie cities, Regina and Saskatoon, compared with non-Aboriginal individuals. The authors further noted that the low-income rate was

42 per cent for Aboriginal people living in urban centres compared with 17 per cent among other Canadians.

Research has demonstrated that depression is negatively related to employment, productivity and attendance (e.g., Burton, Chen, Conti, Schultz, & Edington, 2007; Lerner, Adler, Chang, Hood, Reed, McLaughlin, Berndt, & Rogers, 2004). However, the relationship between employment and depression in Aboriginal people is unknown. Negative correlations between employment and depressive symptoms that have been demonstrated in the literature would be expected to be found in the results of the analysis of data from the Aboriginal Peoples Survey.

1.6.4 Physical environment

Housing has also been frequently cited as a determinant of Aboriginal health. Housing affects an individual's health in many ways including sufficient space for family members to live comfortably, living in neighbourhoods that are safe for children to play outside, the quality of construction, and adequacy of physical conditions of a building to ensure a healthy environment (Maier, 2006). Researchers have found associations between poor housing conditions and health conditions including respiratory infections, asthma, lead poisoning, injuries, and mental health (Krieger & Higgins, 2002). For example, rates of tuberculosis have been associated with the number of people per room in a dwelling (Canadian Institute for Health Information, 2004). There is an increasing demand for housing because the Aboriginal birth rate is double the Canadian average, which has resulted in overcrowding. Approximately 11 per cent of the 88,570 houses in

First Nations communities are overcrowded compared with one per cent in the Canadian population (Canadian Institute for Health Information, 2004).

Moloughney (2004) noted that numerous studies have indicated that those who live in poorer neighbourhoods suffer poorer health outcomes compared with those who live in richer neighbourhoods. The author noted the methodological challenges in determining causal relationships between the effects of housing and health in isolation from other coexisting factors. Ellen, Mijanovich, and Dillman (2001) hypothesize that neighbourhoods may primarily influence health through short-term and longer-term processes. Short-term influences on behaviours, attitudes, and health-care utilization affect those health conditions that are immediately responsive to such influences. A longer-term process of "weathering" is when the experience of accumulated stress, lower environmental quality, and limited resources erodes health and makes individuals more vulnerable to mortality from disease. Moloughney (2004) suggested that while adverse exposures in housing may not affect everyone immediately or in the same way, there may be a lag time between exposure to adverse housing factors and the suffering from health problems as a result of the exposure.

Aboriginal people have greater problems of access to adequate housing compared with the general Canadian population (National Aboriginal Health Organization, 2002). The Canada Mortgage and Housing Corporation (2002) indicated that almost twice as many First Nations and Inuit people (33 per cent compared with 18 per cent of non-Aboriginal people) live in housing that is considered to be inadequate, unsuitable or unaffordable. Most non-Aboriginal Canadians live in dwelling units that are adequate in

condition (major repairs not required), suitable in size (sufficient number of bedrooms) and affordable (cost of shelter is less than 30 per cent of the household income before tax). According to the Canadian Mortgage and Housing Corporation (2002), over 60 per cent of off-reserve non-farm (ORNF) Indian households (compared with 32 per cent of off-reserve non-farm non-Native households) in Manitoba and Saskatchewan lived in housing that was below at least one standard (i.e. adequate, suitable, affordable). In Saskatchewan, 20 per cent of off-reserve non-farm Indian households lived in housing that failed to meet two or more standards, compared with 4 per cent of non-Native ORNF households and 13 per cent of Canadian Indian ORNF households (Canadian Mortgage and Housing Corporation, 2002).

Researchers have demonstrated that housing, as a determinant of health, is related to depression. Weich, Blanchard, Prince, Burton, Erins, and Sproston (2002) were among the first researchers to identify an association between the characteristics of the built environment and depression using reliable and independently rated measures. Evans, Wells, and Moch (2003) identified a variety of housing characteristics in the literature that may be related to poor mental health (i.e. negative affect, psychological distress, and psychiatric disorder). The authors summarized numerous studies that suggested that housing quality (e.g. structural deficiencies, cockroach and rodent infestation, mould, dampness, neighbourhood comparisons, comparisons of "difficult to rent" versus low-vacancy housing) is positively correlated with psychological well-being.

Moloughney (2004) asserted that there are at least three potential health dimensions related to housing: the physical aspects (such as housing type, space, warmth,

dryness, and fresh air); the psychosocial dimension of housing (includes concepts of security, control, sense of attachment, permanence, and continuity); and the neighbourhood and community where housing is located (that influence the availability of health and social services, recreation, employment, safety and security, community norms about such issues as child rearing and crime). The author indicated that the psychosocial dimension of housing also includes the potential significance of the home as a place where people typically spend most of their time and are in contact with the most important members of their social network.

However, nearly all of the studies failed to take into account other variables that may moderate the relationship between housing and mental health. The Aboriginal Peoples Survey includes items such as rent versus owned housing and housing in need of repair, which may be analyzed in correlation with depressive symptoms to potentially enhance our understanding of the relationship between the physical environment and depression. Knowledge about respondents' perceptions of their community (i.e. safety, problems in the community) and the relationship with depressive symptoms will also contribute to our knowledge in terms of the impact of respondents' housing on mental health. The physical environment in terms of housing in need for repair and respondents' perceptions of their community are expected to be negatively associated with depression.

1.6.5 Biology and genetic endowments

Biology and genetic endowments (the basic biology and organic make-up of the human body) are also considered to be potential determinants of health (Public Health Agency of Canada, 2002). Romanow (2004) acknowledged that there has been

improvement in the general health status of Aboriginal peoples, as living conditions have slightly improved (e.g. housing conditions on reserves, investments in disease prevention and public health). Romanow asserted, however, that health disparities between non-Aboriginal and Aboriginal Canadians continue; for example, cancer rates and infectious diseases (e.g. tuberculosis, gastrointestinal infections) occur at alarmingly higher rates among Aboriginal people. There is increasing incidence of degenerative diseases including heart, liver and lung diseases, and cancers, as well as major chronic disease such as diabetes, in Aboriginal people and communities compared with the Canadian population (National Organization of Health Association, 2002; Second Report on the Health of Canadians, 1999). Aboriginal people also tend to have co-occurrence of chronic diseases. Results from the First Nations Inuit Regional Health Survey (Health Canada, 1999) indicate that 26 per cent of Aboriginals with diabetes also report having heart problems, and 50 per cent of Aboriginals with diabetes report having hypertension (3.9 and 3.3 times the prevalence rate of Aboriginals without diabetes).

Although socio-economic and environmental factors are important health determinants, biology is also a fundamental determinant of health and genetic endowment and sometimes predisposes certain individuals to particular diseases or health problems (Public Agency of Health Canada, 2005). According to the Agency, in comparison with the general Canadian population, Aboriginal people endure a disproportionate burden of health problems although specific knowledge about health problems is limited, particularly with populations in urban areas. Twenty years ago, facts were known about the disparities in quality of life between non-Aboriginal and Aboriginal people in Canada,

as Wilson and Rosenberg (2003) cited a few references that measured mortality and morbidity pertaining to illnesses such as meningitis and tuberculosis (e.g. Enarson & Grzybowki, 1986; Hammond, Rutherford, & Malazdrewicz, 1988). More recently, results of the First Nations and Inuit Regional Longitudinal Health Survey (1999) indicated that Aboriginal people suffer from a range of health problems at much higher rates than other Canadians.

The prevalence of chronic health conditions such as hypertension, diabetes, & arthritis is often double or triple that of Canadian seniors overall. For example, they have 67 times greater incidence of tuberculosis, are 44 times more likely to be diabetic, and 3 times more likely to have heart disease and hypertension (Kirmayer, Simpson, & Cargo, 2003). It is important to note that there are limitations in the data from the First Nations and Inuit Regional Longitudinal Health Survey. For example, communities may choose not to participate or enumeration is incomplete, which makes obtaining accurate population estimates difficult and comparison of rates over time is limited (Anderson, Smylie, Anderson, Sinclair, and Crengle, 2006).

The death rate for First Nations people was higher than the national rate for all causes of death except cancer and circulatory disease (Health Canada, 2003). Cancer and other illnesses, however, are not as rare as previously assumed. Burge et. al (2005) proclaimed a noteworthy phenomenon that there is a widespread myth in the Aboriginal health literature that cancer is rare among Aboriginal people, when in fact, the incidence rate of cancer is increasing (Barroetavena & Myles, 2005) and is the second most common cause of death in Aboriginal people (Cancer Care Ontario, 2002). For example,

since the 1970s the incidence of lung cancer has increased at least twofold in the Inuit and the Saskatchewan First Nations populations (Health Canada, 1999). The rates for First Nations people were approximately two to three times higher than the general Canadian population for principal diagnoses of respiratory diseases, digestive diseases, or injuries and poisonings (Health Canada, 2005).

Information about morbidity and mortality from cervical cancer in Aboriginal women was also unknown until recently. The results of a more recent study in Saskatchewan found that in status Indians, the incidence of cervical cancer was 10 times higher than the average incidence for the province (The Public Health Agency of Canada, 2003). The current rates of Aboriginal women who have died from cervical cancer are unknown.

The Canadian Cancer Statistics 2005 report categorizes cancer statistics based on age (including children and youth), gender, and geographical regions, but there is no category for culture, status Indians or Aboriginal people. The limited information gathered in Canada has been obtained from research conducted in the North West Territories, British Columbia, and Ontario. For example, the Analysis of Health Statistics for Status Indians in British Columbia (2001) indicated that the top five leading causes of death from 1991-1998 were ischaemic heart disease, cerebrovascular disease/stroke, gastrointestinal cancers, pneumonia/influenza, and respiratory system cancers. The results of the analysis further demonstrated that the five leading causes were also found for all other British Columbia residents, with respiratory system cancers rating higher. In British Columbia, between the years 1991-2001, the cancer mortality rate for status

Indians was 16.7 % higher than for non-Aboriginals (Barroetavena & Myles, 2005). The rate of cancers that have been suggested to be preventable (such as lung cancer) has increased and survival following diagnosis of cancer is poorer than in the general population (Marrett, Jones, & Wishart, 2004).

As Aboriginal people continue to suffer higher rates of illness, the potential higher rates of depression in relation to reporting of illness may be significant. The Australian Integrated Health Initiative (AIMHI) identified symptoms of depression, most of which were untreated, in more than 60 per cent of a group of 21 Aboriginal people that were assessed in one community (Nagel, 2005). Studies have provided evidence that for example, cancer patients diagnosed with depression may benefit from a treatment approach that combines psychosocial and pharmacological interventions to alleviate depressive symptoms (e.g. Rodin, Katz, Lloyd, Green, Mackay, and Wong, 2006). The authors indicated that providing information, support, and addressing emotional, cognitive, and/or behavioural factors may be valuable for patients diagnosed with both cancer and depression. The Aboriginal Peoples' Survey however, does not include items that are suitable indicators of biology and genetic endowment. Exploration of the relationship between depressive symptoms and biology and genetic endowment will be excluded from the analysis.

1.6.6 Personal health practices and coping skills

Personal health practices and coping skills are also key determinants that influence health (Public Health Agency of Canada, 2004). Personal health practices and coping skills refer to an individual's actions that can prevent diseases and promote self-

care, facilitate coping with challenges, and develop self-reliance, solve problems and make health-enhancing choices (Public Health Agency of Canada, 2005). There is evidence that practices such as smoking, risk-taking behaviours (e.g. alcohol, drug use), diet, tobacco use, and others negatively affect health. For example, smoking is a risk factor for developing cardiovascular disease and ischemic heart disease (Filate, Johansen, Kennedy, & Tu, 2003).

While there is little research on the socioeconomic determinants and other determinants that influence mental health problems, there is even less on emotional well-being and enhancing 'coping' or promoting resilience for mental health (Alperstein & Raman, 2003). Canadian statistics demonstrate some of the disparities between the Aboriginal and non-Aboriginal population in health practices and coping skills. According to the results of the Statistics Canada 2000-2001 Canadian Community Health Survey, off-reserve Aboriginal people reported higher rates of smoking, drinking and obesity, and lower rates of physical activity (Health Canada, 2003). The results also indicated that off-reserve Aboriginal population reported significantly higher rates of "fair" or "poor" health, more than one chronic condition, and a major depressive episode in the previous year. Comparisons with the non-Aboriginal population are unknown and may vary by region or geographical area. For example, the depression prevalence rate in Bella Coola Valley, a remote community in British Columbia, was not found to be greater in the Aboriginal population than the non-Aboriginal population (Thommasen, Baggaley, Thammasen, & Zhang, 2001), but the difference in prevalence rate in an urban area in Regina, Saskatchewan, is unknown.

Further knowledge of the relationship between personal health practices and the reporting of depressive symptoms for Aboriginal people in Canada is important for understanding Aboriginal health. With respect to the Aboriginal Peoples' Survey, poorer health practices such as drinking, smoking, and greater Body Mass Index (BMI) would be expected to be correlated with higher reporting of depressive symptoms.

1.6.7 Social support networks

Social support from families, friends, and communities, is identified as a determinant of health (Public Health Agency of Canada, 2004). Research suggests that the coping strategies that people use are related to their levels of social support (Brissette, Scheier, & Carver, 2002). Social support networks may be very important in helping people to solve problems, deal with adversity, and maintain a sense of mastery and control over life circumstances (Public Health Agency of Canada, 2004). Recent research investigating the relationship between social support and coping indicates that social support is also positively associated with proactive coping with chronic health conditions and negatively with depression (Greenglass et al., 2006).

Social support provides people with needed emotional and practical resources, making people feel cared for, loved, esteemed, and valued, thus having a powerful protective effect on health (Wilkinson & Marmot, 2003). Wilkinson and Marmot asserted that supportive relationships may also encourage healthier behaviour patterns. Research suggests that social support has been found to have an increased stress-buffering effect as material hardship increased for African Americans but not for Caucasians (Ennis, Hobjoll, & Schnoder, 2000). Wu et al. (2003) found that although non-visible minorities

reported higher levels of perceived social support than racial/ethnic minorities, the reported levels of perceived social support did not seem to significantly affect mental health for racial/ethnic individuals. Wu et al. (2003) also found that marital status appeared to be the key mediating variable. Further investigation into perceived social support and mental health among Aboriginal people is warranted.

Social support is an important determinant of health, particularly in exploring the relation to depressive symptoms for Aboriginal people. Based on the literature, significant correlations with social support and depression would be expected in the analysis of the Aboriginal Peoples' Survey.

1.6.8 Healthy child development

Early child development is a powerful determinant of health (Public Health Agency of Canada, 2004). There is evidence that links the prevalence of mental health problems of children and youth to income, educational status, and family structure (Sawyer, Baghurst, Graetz, Kosky, Nurcombe, Patton, Prior, Raphael, Eay, Whaites, & Zubrick, 2001). However, there is less research on the socioeconomic determinants of mental health problems of children and young people (Alperstein & Raman, 2003). Aboriginal people have even greater challenges than their non-Aboriginal counterparts. For example, there are disproportionately more Aboriginal grandparents raising children. More than 17 per cent of the Canadian grandparents who raise their grandchildren are of First Nations ancestry, even though Canada's total population comprises only 2.8 per cent of First Nations people (Fuller-Thomson, 2005). According to the 1996 Canadian census data, two out of every five households with First Nations grandparents, many of whom

were raising more than one grandchild, had an income of less than $15,000. They were also more likely to be female, less likely to be married, less likely to be employed, and less likely to have completed high school (Fuller-Thomson, 2005). The authors further noted that the findings appear to be a function of ill health, unemployment, and poverty.

The impact of caring for children and efforts to ensure healthy child development for Aboriginal people may be related to depressive symptoms. Many women of childbearing age experience high levels of depressive symptoms that are often unrecognized and untreated (Psychosocial Paediatrics Committee, 2004). Maternal depression is not only associated with significant impairment in social and psychological functioning but can also have profoundly negative effects and consequences on child development (Psychosocial Paediatrics Committee, 2004; Siefert, Finlayson, Williams, & Delva, 2007). For example, a recent study demonstrated that maternal depression predicted conduct problems for up to eight years following assessment, suggesting that maternal depression is a risk factor for the developmental course of conduct problems among children with A-D/HD (Chronis, Lahey, Pelham, Williams, Hall, Kipp, Jones, & Rathouz, 2007).

Research that investigates the reporting of depressive symptoms related to caring for children will provide valuable information about factors that potentially influence child development. For the purpose of this study however, the Aboriginal Peoples' Survey does not include items that are suitable indicators of healthy child development. Subsequently, exploring the relationship between depressive symptoms and healthy child development will not be included in the analysis.

1.6.9 Health services

Health services contribute to population health as a health determinant (Public Health Agency of Canada, 2005). Traditionally, government has had strong involvement in health services in many countries, including Canada (Adlung & Carzaniga, 2001). The Council of the Federation Aboriginal Health Care (2004) noted the federal government's responsibility to provide adequate funding and to work collaboratively with Aboriginal communities as well as to priorize the unique Aboriginal health care challenges, including health determinants. The inclusion of the availability of traditional medicines, healing and wellness practices in the 2001 Aboriginal Peoples' Survey will provide data for health care research to better enhance our understanding of the role of traditional activities in shaping health (Wilson & Rosenberg, 2002).

Access to health services may also be a factor that affects health. People who live in rural areas and have a lower income are isolated from services as well as from networks or people who know how to access information. The National Aboriginal Health Organization (2002) indicated that there is an increasing trend toward urbanization and one in every five Aboriginal people reside in seven of Canada's urban centres (Winnipeg, Edmonton, Vancouver, Saskatoon, Toronto, Calgary and Regina). There is no research that determines whether or not access to health care services is correlated with the degree of isolation in urban and rural areas (NAHO, 2002). Research does not indicate the perceived degree of isolation of Aboriginal people living in urban centres who require care.

Transportation problems in rural areas have also historically been major barriers for Aboriginal people, limiting their ability to access services and programs if they do not have the money to pay for transportation that is later reimbursed (Seniors' Education Centre, University of Regina, 1994). Women are also more likely than men to be faced with transportation challenges. Past research suggests that for the non-Aboriginal population, women have been found to be more likely than men to experience problems with transportation (MacLeod & Associates, 1997).

There is a need for research that explores the complexities that Aboriginal people experience related to determinants of health and depressive symptoms as well as the cultural components that may be incorporated in community-based health services. The items in the Aboriginal Peoples Survey that inquire about health concerns related to health service practitioners may provide further insight into the relation between depressive symptoms and access to health services. We would expect that barriers to access care, for example, would be correlated with higher reporting of depressive symptoms. Depressive symptoms may also be related to more frequent use of health services.

1.6.10 Culture

Culture is a vast topic that cannot be oversimplified (Peterson, 2004). The author proposed the following as a starting point for defining culture: "Culture is the relatively stable set of inner values and beliefs generally held by groups of people in countries or regions and the noticeable impact those values and beliefs have on the peoples' outward behaviours and environment (p. 17)." He asserted that his definition includes the multiple

elements of culture such as history, common traits, geographical location, language, religion, race, hunting practices, music, art, and others, and further considers culture to be what people think, how people feel, or how people behave.

Culture is also a determinant of health (Public Health Agency of Canada, 2005). Weinberg (2003) asserted that culture is essential for social identity and protects us from anxieties by structuring and giving meaning to the environment. The author noted that, through cultural codes and tradition, we know how to deal with life and death. Personal history and the wider situational, social, political, geographic and economic factors are factors that influence culture and ethnicity (Public Health Agency of Canada, 2002). Factors that are related to culture affect the following: the way people interact with the health care system, participation in prevention and health promotion programs, access to health information, health-related lifestyle choices, and understanding of health and illness and priorities in health and fitness (Public Health Agency of Canada, 2002). There also appear to be persistent language and cultural barriers in the provision and/or utilization of general practitioner services (Minister of Public Works and Government Services Canada, 1999).

For over a decade, evidence has shown that Canada's First Nation peoples experience much higher rates of certain health problems than the general population, particularly in mental health, including depression, substance abuse, and suicide (e.g. Waldram, 1997). In the appendix of the DSM-IV-TR, there are several culture-related syndromes that may coexist or be related to depression and anxiety disorders (Kirmayer, 2001). There is compelling evidence that cultural oppression and marginalization have

contributed to the higher levels of mental health problems found in many Aboriginal communities (Kirmayer, Simpson, & Cargo, 2003). Historical and socio-economic factors are the cause of many Aboriginal peoples' mental health concerns, such as the residential school system (Alberta Mental Health Board, 2006). Residential schools will be discussed as an example of cultural oppression that influences health.

The legacy of residential schools has recently been identified as a unique determinant of health that contributes significantly to poorer health status (Canadian Institute for Health Information, 2004). Many Aboriginal people's circumstances of attending residential schools for cultural assimilation have led to experiences and risk factors that affect their health (MacLeod & Associates, 1997). A brief history of the residential school systems about which the majority of complaints were made illustrates the relation between residential schools and health. Residential schools are believed to be pivotal in transforming Aboriginal societies from relatively trauma-free and functional to traumatized and dysfunctional (Waldram, 2004). The author indicated that the notion of intergenerational trauma has evolved from the well-accepted belief that dysfunctional behaviour that can be passed on through the generations.

Canadian government authorities had seen residential schools as the key to Aboriginal assimilation (Sochting, Corrado, Cohen, Ley, & Brasfield, 2007; Waldram, 2004). Residential schools were primarily operated in partnership between the government and the churches of Canada (Chansonneuve, 2005). Aboriginal children were taken from their homes and placed in isolated institutions where they were forbidden to

speak their native language or practice their traditions and spiritual beliefs (Canadian Institute for Health Information, 2004; National Aboriginal Health Organization, 2004).

Residential schools have had other negative implications on students and their children and grandchildren. Attendance at residential school has led to interruption in the transmission of parenting and created a loss of knowledge, language and tradition, devaluing of Aboriginal identity (Couture, 1994; Kirmayer, Simpson, & Cargo, 2003). In some residential schools, Aboriginal students endured psychological, physical and sexual abuse, as well as neglect (National Aboriginal Health Organization, 2004). As a result, there has been a loss of individual and collective self-esteem; individual and collective disempowerment has reverberated throughout communities and families and has led to the destruction of some communities (Couture, 1994; Kirmayer, Simpson, & Cargo, 2003).

A significant number of Aboriginal people in Canada who attended residential schools have reported adverse health effects. Results of the 1999 First Nations and Inuit Regional Health Survey indicate that 65 per cent of Elders who attended residential schools reported fair or poor health (39 per cent of First Nations Elders attended residential school) (First Nations and Inuit Regional Health Survey National Steering Committee, 1999). The results of two surveys that the National Aboriginal Health Organization distributed indicated that 68 per cent of First Nations respondents and 62 per cent of Métis respondents reported that the adverse effects experienced at residential schools were a significant contributor to poorer health status (Canadian Institute for Health Information, 2004; Health Canada, 2003).

While the specific impacts of negative experiences at residential schools are difficult to assess in isolation from other factors that affect health (e.g. inadequate education, employment, and income), there is a need for further research to understand the relationship between residential school experiences and health. Depressive symptoms related to culture as a health determinant need to be further explored. For this study, items on the Aboriginal Peoples Survey that are indicators of interruption of transmission of culture, such as use of language, cultural practices, and attendance at residential schools are expected to be correlated with depressive symptoms.

1.6.11 Gender

Gender is also a determinant of health (Public Agency of Canada, 2002). The two terms, gender and sex, are distinct from one another in that sex is biologically determined and gender inequalities are considered to be mostly socially produced (Annandale & Hunt, 2000). Gender refers to the roles ascribed to females and males that are determined by society and include personality traits, attitudes, behaviours, values, and differential power and influence that society ascribes (Public Health Agency of Canada, 2005). Gender-based social status and roles affect health (Public Health Agency of Canada, 2005). For example, the Agency noted that women are more likely to live longer than men but are also more likely to suffer depression, stress overload, and chronic conditions (e.g. arthritis, allergies).

Researchers have been using a gender comparative approach, which recognizes that the social relations of gender are complex and that similar circumstances may cause both men and women to be vulnerable to ill or good health (Annandale & Hunt, 2000).

The authors noted that there has been little gender comparative research, partly because gender has traditionally been seen as concerning only women but also because of the lack of large scale data sets that contain work- and health-related questions for both men and women.

Gender is an important determinant of health and a comparative approach that explores current relations between gender and depressive symptoms for both females and males may provide further insight into the relation between gender and depressive symptoms. A significant body of research has found that women experience depression at twice the rates of men (Kornstein, Schatzberg, & Thase, 2000; Piccinelli & Wilkinson, 2000). We would expect similar prevalence rates in analyzing the results of the Aboriginal Peoples Survey.

1.7 Purpose

The purpose of this research is to investigate the relationship between determinants of health and depressive symptoms among Aboriginal people in Canada. Exploration of the hypotheses would provide data to support previous findings that suggest that the prevalence of depression in Aboriginal people is linked to determinants of health. The proposed investigation may provide evidence that determinants of health play an important role in the reporting of clinically significant depressive symptoms.

1.8 Problem Statement and Hypotheses

It is hypothesized that determinants of health are related to the reporting of depressive symptoms in Aboriginal people who participated in the Aboriginal Peoples' Survey (2001). The determinants of health described by the Public Health Agency of

Canada (2002) that will be analyzed are: income; education; employment and working conditions; physical environment; personal health practices and coping skills; social support networks; health services; culture; and gender.

Significant correlations are expected between determinants of health indicators and reporting of depressive symptoms. The hypotheses are: (1) prevalence of depressive symptoms among Aboriginal people is predicted to be higher among those who reported: (a) earning a lower income or receiving social assistance; (b) having less social support; (c) lower education; (d) less employment and more difficult working conditions; (e) physical environment conditions (i.e. housing); (f) problems with personal health practices and coping skills; (g) unavailability of access to traditional health services; (h) less involvement with traditional language and cultural practices, negative experiences associated with acculturation (e.g. attendance at residential school); and (i) gender.

2. METHODOLOGY

2.1 Participants

The respondents who participated in the Aboriginal Peoples Survey (2001) comprise residents of private dwellings in the ten provinces and three territories in Canada. For the 2001 Census, the population with Aboriginal ancestry was estimated at 439,000. The total sample size was 117,421 persons who self-reported being an Aboriginal person (i.e., North American Indian, Métis, or Inuit), with an 84 per cent overall response rate for off-community respondents. The sample included both on- and off-community respondents as well as respondents who were administered the survey via telephone interview.

A total of 98, 649 participants responded to the 2001 Aboriginal Peoples Survey. In Phase I, 38,464 individuals of the off-reserve Aboriginal population responded and 50, 594 individuals of the on-reserve Aboriginal population responded; in Phase II (telephone interviews), 591 individuals responded to the questionnaire (Statistics Canada, 2003). The response rate was 84.1 per cent for the off-reserve Aboriginal population, 87.9 per cent for the on-reserve Aboriginal population, and 68.6 per cent for the Phase II sample. Tracing respondents for the survey was more difficult in Phase II because the sampling occurred approximately one year after the Census, whereas Phase I occurred only four months after Census.

The highest concentrations of Aboriginal people, according to the 2001 Census (Statistics Canada), were in the North and in the Prairie provinces. The largest number of Aboriginal people (i.e., Inuit, Métis, and North American Indian) living in non-reserve

areas was in Ontario (148,000); however, they made up only 1 % of the total population whereas the non-reserve Aboriginal population represented 10 % of the total population in Saskatchewan. The total sample size for the non-reserve Aboriginal population who received the questionnaire was 45,710 and the response rate was 84.1 % (38,464) (Statistics Canada, 2003). The total sample size for the on-reserve Aboriginal population who received the questionnaire was 57,560 and the response rate was 87.9 % (50, 594). Further noted was that the people living off-community in Nunavut were excluded from the survey distribution because of the small number of people living off-community. The off-reserve participants in this study live in many communities and Central Metropolis Areas (CMAs). The off-reserve population comprises 80 % of the total Aboriginal population in Canada and includes people who live in Canada's largest cities, other urban areas, rural areas, as well as in the Canadian Arctic (Statistics Canada, 2006). The off-reserve population excludes people living on Indian reserves, Indian Settlements, Indian Government District, Terres Reservees, Nisga'a Villages, Teslin Lands and a set of communities which Indian and Northern Affairs Canada (INAC) designates as Bands-affiliated communities.

The only geographical area in which the Aboriginal Peoples Survey includes the total Aboriginal population is the Northwest Territories, which includes those residing both on- and off-reserve. The following communities were also considered to be part of the off-reserve population for the survey: in Saskatchewan, Deschambault Lake (Northern Hamlet), La Loche (Northern Village), Pinehouse (Northern Village), Sandy Bay (Northern Village); and in Alberta, Fort Mackay (Indian Settlement). The off-reserve

respondents include those who reported residing in a Census Metropolitan Area (CMA), which is an area consisting of one or more adjacent municipalities situated around a major urban core with a minimum population of 100,000 (Statistics Canada, 2002).

Survey respondents who were individuals of the on-reserve Aboriginal population were not included in this study. Access to data collected from the on-reserve Aboriginal population is denied because of confidentiality concerns (Statistics Canada, 2003). Furthermore, the Inuit and Métis were the only respondents of the survey who were asked questions about depressive symptoms. Therefore, only the Inuit and Métis will be included as participants in this study. The sample size for the off-reserve Métis participants in this study is 7,770 and the sample size for the off-reserve Inuit participants in this study is 2,314.This will be further discussed in the context of the measures utilized in the study.

2.2 Measures

2.2.1 The Aboriginal Peoples Survey (2001)

The study analyzed data from an existing database that comprises data collected from Aboriginal (i.e., Inuit, Métis, and North American Indian) participants who completed the Aboriginal Peoples Survey (2001). There were several limitations in using the Aboriginal Peoples' Survey for this study. First, although the 2006 Aboriginal Peoples' Survey data bank has been available since the study was developed, the more recent survey does not include any items related to depressive symptoms for any of the Aboriginal populations (i.e. North American Indian, Métis, or Inuit). It is also important to note that the 2001 Aboriginal Peoples' Survey does not include any items related to

depressive symptoms for respondents who reported North American Indian ancestry and subsequently the survey is limited to respondents who answered the Inuit supplement and Métis supplement surveys. North American Indian participants comprised 12,788 of the total participants surveyed, which is almost half of the participants. The results of this study reflect the correlations for Inuit and Métis participants, but limit generalizability to the rest of the Aboriginal population. When utilizing an existing data bank, the secondary data is limited in various ways. The current study is limited by the questions and topics that are included in the survey. For example, questions regarding living conditions such as mold in the home are not included and such conditions are unable to be assessed. Some questions that may contribute valuable information to further our understanding of depression were included in the survey, but could not be accessed (e.g. reporting of suicide attempts), possibly because of confidentiality issues. Further limitations will be reviewed in the discussion chapter.

The 2001 Aboriginal Peoples Survey (APS) is a post-censal statistical survey conducted by Statistics Canada to collect data on the lifestyles and living conditions (social and economic conditions) of Aboriginal people across Canada. Post-censal means that respondents were selected based upon their responses to the 2001 Census. The Aboriginal Peoples Survey provides information on the health status of Aboriginal People in Canada (Curtis, 2005). The Aboriginal Peoples Survey documents important determinants of health such as socio-economic status and health-care utilization and health behaviours because many government programmes aim to improve health status by affecting the behavioural determinants of health (Curtis, 2007).

The survey targeted residents of private dwellings in the ten provinces and three territories across Canada who responded to the 2001 Statistics Canada Census by reporting ancestral origin of an Aboriginal group and as having North American Indian, Métis, and/or Inuit identity and/or had Aboriginal ancestry, and/or First Nations membership and/or were registered Indian Status under the Indian Act were included in the Aboriginal Peoples Survey (2001) target population (Minister of Industry, 2003). Those people who identified themselves as both North American Indian and Métis would be counted in both the North American Indian and the Métis population but are only counted once in the total Aboriginal Identity population. Interviewers administered all components of the survey and in all cases, a paper and pencil methodology was employed (Statistics Canada, 2003).

The Aboriginal Peoples Survey comprises the following questionnaires: Adult core, which included questions on labour activity, income, education, language, health, housing, ethnic origin, mobility, communication technology, and others; the Inuit supplement, which was administered to the Aboriginal adult population residing in Inuit communities contained questions on household and harvesting activities, social participation, and community and social wellness; the Métis supplement, which was administered to the Aboriginal adult population who identified themselves as Métis and/or had Métis ancestry contained questions on family background household information, cultural background, and health. Statistics Canada partnered with national Aboriginal organizations in the design and implementation of the survey (Statistics Canada, 2003). National Aboriginal organizations (Assembly of First Nations, Métis

National Council, Inuit Tapiriit Kanatami, Congress of Aboriginal Peoples, National Association of Friendship Centres, and the Native Women's Association) were consulted and provided written input on topics such as survey content, geographic areas to be covered, and subpopulations of particular interest (Statistics Canada, 2003).

The Aboriginal Peoples' Survey was previously conducted in 1991, the results of which have been used extensively in research. For example, the Royal Commission on Aboriginal Peoples (Canada, 1996) retrieved demographic, social, and economic data for their final report. The specific purpose of the APS was to identify the needs of Aboriginal people related to issues such as health, language, employment, income, schooling, housing, and mobility and to address some of the gaps in services in these areas. The Ministry of Industry (2003) asserted that the APS is unique in that there are no other sources in existence that provide the information obtained in the survey and the survey results can be used to answer a variety of questions related to community planning, program development, and health care priorities. The questions in the Aboriginal Peoples' Survey (2001) that ask about determinants of health (Appendix A) will be analyzed in this study.

2.2.2 Aboriginal involvement in development of the Aboriginal Peoples' Survey

The survey content and data collection were conducted in consultation with Aboriginal organizations. The creation of the survey content involved consultation and collaboration with Aboriginal people and stakeholders in all aspects of the design and implementation of the Aboriginal Peoples' Survey in an effort to meet various objectives (Statistics Canada, 2003). For example, one objective of consultation was to solicit

feedback regarding the previous Aboriginal Peoples' Survey, areas of interest that were omitted, groups that were not represented, and issues that may be unique to each Aboriginal group. An Implementation Committee was created as a unique forum that brought together representatives from three main groups: (1) Aboriginal groups, communities, and organizations; (2) twelve Federal government departments that provide programs or develop policy for Aboriginal people; (3) Provincial and territorial governments. Statistics Canada noted that groups and individuals were also given opportunity to comment (e.g., academics and Aboriginal groups not affiliated with large organizations). The survey was also discussed in various forums, such as the Roundtable on fiscal relations with the Federation of Saskatchewan Indian Nations (Statistics Canada, 2003).

The national Aboriginal organizations included the Assembly of First Nations, Métis National Council, Inuit Tapiriit Kanatami, Congress of Aboriginal Peoples, National Association of Friendship Centres, the Métis National Council, the Native Women's Assocation of Canada, and an Elder/facilitator. Representatives from two federal departments, Indian and Northern affairs Canada and Canadian Heritage, represented all federal partners. Two representatives from Statistics Canada and a provincial/territorial representative were included. All were involved in the decision-making process regarding the development and implementation of the survey and continue to be involved in disseminating the data. Each representative consulted also stated in writing the members' wishes regarding survey content, coverage of geographic areas, subpopulations of particular interest, and other aspects (Statistics Canada, 2003).

2.2.3 Weighting

In a sample Survey such as the Aboriginal Peoples Survey (2001), a weight is associated with each respondent to indicate the number of persons that the respondent represents as not only himself/herself, but also other persons who were not sampled. For example, in a random sample of 2 % of the population, each person represents 50 persons in the population (Ministry of Industry, 2003). To improve validity of the findings, the initial weight is adjusted (i.e. for non-response, discrepancies between characteristics of the sample and known totals for the target population) (Ministry of Industry, 2003). The weights of the sample of the Aboriginal Peoples Survey were calculated in a three-stage process: (1) an initial weight was assigned based on the sampling design and was the inverse of the inclusion probability (probability of falling in the sample); (2) an adjustment for non-response of persons not contacted and persons contacted but who did not respond, adjusting first for non-contact and then for non-response; (3) two consecutive post-stratifications were completed to ensure that the sum of the final weights for the respondents was equal to the population counts from the Census. The post-stratifications were also completed to ensure that the sample did not under- or over-represent Census Aboriginal groups—a second post-stratification was carried out to guarantee that the total Aboriginal population matched those estimated from the Census filter questions (Statistics Canada, 2002).

The Aboriginal Peoples Survey is not simply a random sample of the target population. Rather, the survey is based on a complex sampling design in which respondents were selected according to unequal probabilities. As a result, survey weights

must be used in making estimates and analyses to ensure that the over- or under-representation of some groups in the unweighted file can be taken into consideration. Therefore, the variances calculated from using analysis methods integrated into statistical packages that allow the use of weights are practically meaningless because the meaning and definition of the weights often differ from those that apply in the context of a sample survey (Statistics Canada, 2003). Statistics Canada recommends that in methods of analysis such as linear regression, logistic regression, estimation of rates or proportions and analysis of variance, applying current software packages may be made more meaningful by standardizing the weights that appear in the records so that the average weight is equal to 1. As per the recommendation, standardization was completed by dividing each weight by the overall average weight prior to proceeding to the analysis. The same weighting strategy was used for both Inuit and Métis samples. Both unweighted cases and weighted cases were analyzed and reported.

2.2.4 Measuring Depressive Symptoms

The questions related to depression that are included in the Aboriginal Peoples' Survey (2001) are as valid as other measures for assessment of depression in research that utilized brief measures. As noted earlier in the literature review, recent studies demonstrate the validity of asking a few questions to assess depression and have provided the opportunity for this exploratory study. Previous researchers (e.g.,Whooley, AVins, & Browner, 1997; Arroll, Khin, & Kerse, 2003) demonstrate that as few as two questions about depressive symptoms are as valid as longer instruments such as the CES-D and the BDI in screening for depression. The questions in the Aboriginal Peoples' Survey (2001)

that ask about depressive symptoms (Appendix A) that are used in this study are similar to questions in previous studies and are therefore adequate in this exploratory study of screening for depression. As mentioned earlier, questions that asked about depressive symptoms were only included in the Inuit and Métis supplement questionnaires of the Aboriginal Peoples Survey. Therefore, only participants who identified themselves as having Inuit or Métis ancestry will be included in this study.

Both the Inuit and Métis supplement surveys included three questions about depressive symptoms. The questions in each supplement survey comprised a Mental Health Inventory in the 2001 Aboriginal Peoples Survey (that also included questions about anxiety) to identify the portion of the population that has or is at risk of having anxiety or depression (Statistics Canada, 2006). The survey questions in the Inuit supplement are: (1) on a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you felt downhearted and blue?; (2) on a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you been a happy person?; (3) on a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you felt so down that nothing could cheer you up?

The survey questions of the Métis supplement are: (1) during the past 12 months, was there ever a time when you felt sad, blue or depressed for 2 weeks or more in a row?; (2) please think of the 2-week period during the past 12 months when those feelings were the worst. How often did you feel this way during those two weeks--every day, almost every day, or less often? (note the question was asked of respondents who answered 'yes'

to the question, "During the past 12 months, was there ever a time when you felt sad, blue, or depressed for 2 weeks or more in a row?); (3) have you ever seriously considered committing suicide or taking your own life?

2.2.5 Measuring Anxiety Symptoms and Alcohol Use

The 2001 Aboriginal Peoples Survey also included the following items in the Inuit supplement survey about anxiety symptoms: (1) On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you been a very nervous person?; and (2) On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you felt calm and peaceful? Stepwise multiple regression analysis was conducted with the items about anxiety symptoms as the dependent variables.

The Inuit, Métis, and North American Indian respondents were asked the following item about alcohol use: "On the days that you had a drink, how many drinks did you usually have" was asked of all respondents. This provided an opportunity to explore how all respondents may experience a potentially concerning issue in relation to measures of population health. Stepwise multiple regression analysis was conducted with the item about alcohol use as the dependent variable.

2.2.6 Measuring Health Determinants

Researchers have demonstrated strong relationships between health determinants and poor health outcomes. For example, income and education have been found to have strong relationships with health status (e.g. Lantz, Lynch, House, Lepkowski, Mero, Musick, & Williams, 2001). For the purpose of this study, the independent variables as

potential health determinants that will be explored in relation to depressive symptoms are as follows: (1) Income as a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of sources of income, family total income, employment income, and total income; (2) Education, as a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of school grade completion, completion of post-secondary education, and completion of postsecondary education, correspondence/ distance education; (3) Employment and Working Conditions, as a potential health determinant, is measured in the Aboriginal Peoples' Survey, in part (i.e. employment), in terms of temporary lay-off from work, full-time or part-time employment, satisfaction with job opportunities in the community, seasonal employment, commuting distance, and reasons for not working (note that only employment is measured because the survey questions are inadequate indicators of working conditions); (4) Physical environment, as a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of family rental or ownership of household, need for repair of dwelling, and availability of safe drinking water, wait list for social housing, problems for Aboriginal people in the community/neighbourhood where living, satisfaction in the community (e.g., housing, recreation, availability of health services), personal safety, considered moving out of the community; (5) Personal health practices and coping skills, as a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of cigarette smoking and alcohol use, gambling, exercise/recreational activity; Social support networks, a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of to whom the participant turns for support, availability of different kinds of support when

needed, and strength of ties with family members; (6) Social Support, as a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of frequency of availability of social support, religion/spirituality, and strength of ties with family in other household, community involvement; (7) Health services, as a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of availability of traditional medicines, healing or wellness practices, in the city, town or community where the participant currently lives, contact with health professionals about the participant's physical, emotional, or mental health (e.g. nurse), availability of traditional medicines, healing or wellness practices, been a patient overnight, needed health care but did not receive it, how often had to acquire drugs or medications in the past 12 months, had a prescription that could not fill; (8) Culture, as a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of attendance at a federal residential school or industrial school, a family member's attendance at a federal residential school or industrial school, participation in traditional cultural activities (e.g. hunting, art), Aboriginal language ability (e.g. speak, read, write), use and importance of Aboriginal language; education about Aboriginal people, and (9) Gender, as a potential health determinant, is measured in the Aboriginal Peoples' Survey in terms of sex (i.e. male or female).

The other independent variables cited earlier in this study as potential health determinants include the following: biology and genetic endowment and healthy child development. For the purpose of this study however, biology and genetic endowment and

healthy child development will not be included because the survey did not include questions that were suitable measures as indicators of determinants of health status.

2.3 Procedure

The data was retrieved from an existing database that comprises the responses of the 2001 Aboriginal Peoples' Survey. Data on survey respondents is made available via a co-operative arrangement between Statistics Canada and the University of Regina. The cooperative arrangement is referred to as the Data Liberation Initiative, whereby educators and students can use selected Statistics Canada data for teaching and research purposes at no cost to the individual teacher or student (Statistics Canada, National Contact Centre, Client Services Division, Personal Communication, March17, 2007).

2.4 Ethics

The Aboriginal Peoples Survey was conducted under the authority of the *Statistics Act,* which requires that the information that participants provide be kept confidential. Any information that can identify a participant cannot be released to anyone without permission from the participant (Statistics Canada, 2008). Identifying information is not included in the data set that was provided for this exploratory study. Statistics Canada is "prohibited by law from releasing any data which would divulge information obtained under the Statistics Act that relates to any identifiable person, business, or organization without the prior knowledge or the consent in writing of that person, business, or organization (Statistics Canada, p. 1, 2004)." Meigen Schmidt, the Research and Ethics Officer of the Office of Research Services, University of Regina was contacted to inquire about any requirement for ethics approval. Ms. Schmidt stated that according to the

Research Ethics Board policies, submission for ethics approval is not required for use of aggregate data because there is no identifying information of the participants.

The database has been provided by Marilyn Andrews, Data Librarian, at the Dr. John Archer Library, University of Regina, via computer disc. Marilyn Andrews stated that my use of the Aboriginal Peoples Survey for graduate research purposes is appropriate with the Data Liberation Initiative Licence that the University of Regina has signed (Personal Communication, October 16, 2007). Ms. Andrews noted that because I am working with raw data that does not include personal identifying information (e.g., name, address, social insurance number); ethics is not in question because I will not be able to breach anyone's confidentiality.

2.5 Data Analysis

The dependent variables were the depressive symptoms and the independent variables were the determinants of health indicators. Items from the Aboriginal Peoples' Survey (2001) were selected as independent and dependent variables. The dependent variables were the six items of the Aboriginal Peoples' Survey that ask about depressive symptoms (Appendix A). Items that ask questions related to the determinants of health (Appendix A) were selected as the independent variables. The dependent variable, depressive symptoms, was measured using questionnaire items from the Métis and Inuit supplement questionnaires that evaluate the depressive symptoms.

The independent variables were the determinants of health indicators and were derived from responses to survey questions related to the determinants of health. Specifically, the variables analyzed were as follows: 1) survey questions that ask about

income were analyzed in relation to the questions that ask about depressive symptoms; 2) survey questions that ask about education were analyzed in relation to the questions that ask about depressive symptoms; 3) survey questions that ask about employment were analyzed in relation to the questions that ask about depressive symptoms; 4) survey questions that ask about physical environment were analyzed in relation to the questions that ask about depressive symptoms; 5) survey questions that ask about personal health practices and coping skills were analyzed in relation to the questions that ask about depressive symptoms; 6) survey questions that ask about social support networks were analyzed in relation to the questions that ask about depressive symptoms; 7) survey questions that ask about health services were analyzed in relation to the questions that ask about depressive symptoms; 8) survey questions that ask about culture were analyzed in relation to the questions that ask about depressive symptoms; and 9) survey questions that ask about gender were analyzed in relation to the questions that ask about depressive symptoms. Responses to the survey questions that measure determinants of health are measured on ordinal scales and dichotomous scales.

The use of multiple-item scales may improve the psychometric performance of measures of constructs (Marsden, Landon, Wilson, McInnes, Hirschhom, Ding, & Cleary, 2006). The depressive symptoms variables were aggregated to create one depressive symptom scale for the Inuit and one depressive symptom scale for the Métis. Two separate aggregate variables were created because different questions related to depression were asked in the supplement surveys for the Inuit and Métis. The scores from

the depressive symptom scales may be used to establish a threshold for screening to suggest the likelihood of clinically significant depression.

Reliability analysis of the variables related to depressive symptoms was conducted. Cronbach's alpha reliability estimate was used to measure the internal consistency of the aggregate variable for the Inuit (Cronbach's $\alpha = .198$) and the Métis (Cronbach's $\alpha = .599$). Reliability is limited because there were only three items related to depression in each supplement survey.

Some of the independent variables were also aggregated to improve the reliability of the variables. Variables were aggregated if the items were related to the same construct. The following are the aggregate variables that were created: Community Aboriginal Problem for both the Métis and Inuit (Cronbach's $\alpha = .903$), Exercise/Recreational Activity for the Métis (Cronbach's $\alpha = .816$), Frequency of Availability of Social support for both the Métis and Inuit (Cronbach's $\alpha = .927$), Contact with Health Professionals for both the Métis and Inuit (Cronbach's $\alpha = .514$), Community Satisfaction Items (Inuit) (Cronbach's $\alpha = .735$), and Diagnosed with a Health Problem for the Métis (Cronbach's $\alpha = .574$). For specific items that comprise the aggregate variables, refer to Appendix B.

2.6 Preliminary Analyses

During data collection for the APS, interviewers checked each questionnaire to ensure that items were completed correctly and clearly. If questions were missed, interviewers were instructed to contact the respondent and obtain information for missed items. The survey data were then checked for errors, gaps and inconsistencies (e.g.,

invalid multiple responses to certain questions). If errors were detected, the information was either blanked out, coded as "not stated" or "invalid" code, or corrected based on the answers to other questions(Statistics Canada, 2003). Statistics Canada also analyzed frequency distributions to identify anomalies in the data (e.g. missing categories or unusually large frequencies).

Data from the questionnaires were coded and entered into SPSS 17.0. Prior to examining the hypotheses, the data were screened to ensure accuracy and to eliminate outliers. Screening for outliers is important because outliers bias the mean and inflate the standard deviation (Field, 2009). Outliers were detected by performing descriptive statistical analyses and histograms for each dependent and independent variable.

Exploratory analyses of the sample data also indicated the prevalence of depressive symptoms for Métis and Inuit in the target population who report experiencing symptoms in a twelve month period. Pearson product-moment correlational analyses were performed. Pearson correlation is used to explore the strength of the relationship between two continuous variables, indicating both the direction (i.e. positive or negative) and the strength of the relationship (Pallant, 2001). As the author noted, the directions are as follows: a positive correlation indicates that as one variable increases, the other increases; a negative correlation indicates that as one variable increases, the other decreases. Bivariate correlations were used to explore the relationships between depressive symptoms and determinants of health as measured by the 2001 Aboriginal Peoples Survey. A bivariate correlation is an example of a Pearson correlation that will be

used in the analysis that measures the relationship between two variables to determine if the two variables are associated (Field, 2009).

Multiple regression analyses were performed by combining variables to construct a model with several predictors. A stepwise regression is a procedure to examine the impact of each variable to the model step by step. The variable that cannot contribute much to the variance explained would be thrown out (Field, 2009). The stepwise method of regression was used in which predictors were added to the equation one at a time and a removal test was made of the least useful predictor each time a predictor was added. With this method, the regression equation is constantly reassessed to determine if any redundant predictors may be removed (Field, 2009).

3. RESULTS

3.1 Overview

This section provides a brief description of the results of the data analyses that were performed to answer the research questions. Data were derived from the questions in the Aboriginal Peoples Survey (2001) that investigate the determinants of health to explore correlations with the questions in the Aboriginal Peoples Survey that investigate depressive symptoms (see Appendix A).

3.2 Missing Data

Although respondents were asked to answer all questions of the Aboriginal Peoples' Survey, the resulting proportions of the analysis may not reach 100 per cent because respondents may not have answered all questions of the survey. The inconsistent responding became particularly problematic when performing the multiple regression analyses. Three variables, "income source: social assistance," "prevents from working: health problems," and "prevents from working: retired," had to be dropped from the analysis because a large number of cases were lost if the variables were included (the analyses could not be completed if the variables were retained).

3.3 Descriptive Sample Information

Variables comprising descriptive information of the sample of respondents to the Aboriginal People Survey that was included in the study were analyzed. Frequencies and percentages were calculated for variables such as age, gender, and Aboriginal ancestry.

3.4 Demographics

Table 1 provides information regarding the proportion of gender of the sample before the weighting is applied. Table 2 provides information regarding the gender proportions of the weighted sample. For the weighted sample, approximately 46.2 % of the sample reported their gender to be male and approximately 53.8 % of the sample reported their gender to be female.

Tables 3 and 4 provide demographic information regarding the range of ages of the sample. The range of ages of the sample of 29,592 respondents of the Aboriginal People Survey was from 15 years to 55+ years. Table 3 provides information regarding the proportions of ages of the sample before the weighting is applied. Table 4 provides information regarding the proportions of ages of the weighted sample.

For the weighted sample, approximately 24.3 % of the sample reported their age to be between 35-44 years; 22% of the sample reported their age to be between 25-34 years; 16.5% of the sample reported their age to be between 45-54 years; 13.8% of the sample reported their age to be between 15-19 years; 12.8% of the sample reported their age to be 55+ years; and 10.6% of the sample reported their age to be between 20-24 years.

Tables 5 and 6 provide demographic information regarding the portion of the population who reported having Aboriginal ancestry by group. Table 5 provides information regarding the proportions of the sample before the weighting is applied. Table 6 provides information regarding the proportions of the weighted sample.

Table 1

Gender of the Unweighted Sample

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	13602	46.0	46.0	46.0
Female	15990	54.0	54.0	100.0
Total	29592	100.0	100.0	

Table 2

Gender of the Weighted Sample

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	13660	46.2	46.2	46.2
Female	15932	53.8	53.8	100.0
Total	29592	100.0	100.0	

Table 3

Age Ranges of the Unweighted Sample

Age	Frequency	Percent	Valid Percent	Cumulative Percent
15-19	4279	14.5	14.5	14.5
20-24	3351	11.3	11.3	25.8
25-34	6584	22.0	22.0	48.0
35-44	6809	23.0	23.0	71.0
45-54	4585	15.5	15.5	86.5
55+	3984	13.5	13.5	100.0
Total	29592	100.0	100.0	

Table 4

Age Ranges of the Weighted Sample

Age	Frequency	Percent	Valid Percent	Cumulative Percent
15-19	4090	13.8	13.8	13.8
20-24	3147	10.6	10.6	24.5
25-34	6505	22.0	22.0	46.4
35-44	7180	24.3	24.3	70.7
45-54	4881	16.5	16.5	87.2
55+	3788	12.8	12.8	100.0
Total	29592	100.0	100.0	

Table 5

Aboriginal Ancestry

Ancestry by Group	Frequency	Percent	Valid %	Cumulative %
Non-Inuit (Arctic only)	428	1.4	1.4	1.4
Single origin: North American Indian	12788	43.2	43.2	44.7
Single origin: Métis	7770	26.3	26.3	70.9
Single origin: Inuit	2314	7.8	7.8	78.7
Multiple origins: N. Am. Indian Métis	5525	18.7	18.7	97.4
Other multiple origins	254	.9	.9	98.3
Not part of Aboriginal origin	513	1.7	1.7	100.0
Total	29592	100.0	100.0	

Table 6

Aboriginal Ancestry by Group of the Weighted Sample

Ancestry by Group	Frequency	Percent	Valid %	Cumulative %
Non-Inuit (Arctic only)	180	.6	.6	.6
Single origin: North American Indian	16235	54.9	54.9	55.5
Single origin: Métis	6343	21.4	21.4	76.9
Single origin: Inuit	1080	3.6	3.6	80.6
Multiple origins: N. Am. Indian Métis	5081	17.2	17.2	97.7
Other multiple origins	286	1.0	1.0	98.7
Not part of Aboriginal origin	386	1.3	1.3	100.0
Total	29592	100.0	100.0	

For the weighted sample, approximately 98.7 % of the population reported being part of the Aboriginal ancestry population and 1.3 % reported not being a part of the Aboriginal ancestry population.

3.5 Health Determinant Indicators and Depressive Symptoms

The relationship between health determinants and depressive symptoms was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity, and homoscedasticity. Both Métis and Inuit responses from the Aboriginal Peoples Survey will be explored, including the corresponding Métis and Inuit Supplement Survey results. Cohen (1992) suggested that a correlation that explains 1 % of the total variance ($r = .10$) is considered to be a small effect. Many correlations will be analyzed using a large sample, therefore only significant variances that are larger than 1 % will be interpreted.

Please note the inconsistent direction of coding of the variables in the survey data set. For example, the frequency that a respondent is prescribed drugs is greater according to the higher the number in the response of the variable, whereas the need for health care, but not receiving health care is higher according to the lower the number in the response of the variable. In order to assist the reader in reviewing the results, an arrow will be placed beside each variable to indicate the direction of the score in a manner that is consistent with the construct of the variable. Please also note that for both the Métis and Inuit depression items, the arrow will be an upward arrow (↑) indicating the direction of symptom severity according to the data set.

3.6 Métis respondents

The results of analyses of the Métis respondents will be explored first. Results will include the bivariate correlations and multiple regression analyses.

3.6.1 Income and depressive symptoms

Hypothesis 1, the relationship between income and depressive symptoms was investigated. It was hypothesized that respondents with lower income levels would report higher prevalence of depressive symptoms compared with respondents with higher income levels. Variables related to income, such as source of income and total income, were explored. Table 7 provides information regarding correlations between income level and depressive symptoms.

Consistent with the hypothesis, there was a significant negative Pearson correlation between the two variables, "social assistance as a source of income" and depressive symptoms (r=-.110, N = 3024, p<.01), accounting for 1.2 % of the variance. The results indicate that people who are on Social Assistance are more likely to have depressive symptoms.

Correlations between the variables "Old Age Security Pension (OAS), Guaranteed Income Supplement (GIS), or Spouse's Allowance" and "Canada Pension Plan (CPP) or Quebec Pension Plan (QPP)" as sources of income and depressive symptoms were significant, but each accounted for less than 1 % of the variance and are not interpreted because of the small correlation. It should be noted that the size of these correlations are so small that they are effectively zero and therefore the sign of these correlations are also

Table 7

Income with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Income source: OAS, GIS, or Spouse's Allowance ↓	0.083**	3037	< 1%
1 = Yes 2 = No			
Income source: CPP or QPP ↓	.040*	3033	< 1%
1 = Yes 2 = No			
Income source: Social Assistance ↓	**-.110****	**3024**	**1.2%**
1 = Yes 2 = No			
Economic family income ↑	-.067**	3046	< 1%
1 = less than $10,000 . . . 7= $80,000 or more			
Household income ↑	-.064**	3046	< 1%
1 = $1 - 2,499 . . . 13 = $80,000 and over			

** p <.01 (1-tailed), *p<.05 (1-tailed)

meaningless. Correlations between the variables "economic family income" and "household income" and depressive symptoms are also significant, but each accounted for less than 1 % of the variance and was not interpreted. See Table 1 in Appendix C for results regarding other variables related to income that were not significantly correlated with depression.

3.6.2 Education and depressive symptoms

Hypothesis 2, the relationship between education and depressive symptoms was investigated. It was hypothesized that respondents with less education would report higher prevalence of depressive symptoms compared with respondents with more education. Variables related to the levels of education completed were explored. Table 8 provides information regarding correlations between level of education and depressive symptoms.

Consistent with the hypothesis, there was a significant positive Pearson correlation between "highest level of schooling" and depressive symptoms. However, the correlations accounted for less than 1 % of the variance and are not interpreted because of the small correlations. See Table 2 in Appendix C for results regarding other variables related to education that were not significantly correlated with depression.

3.6.3 Employment and working conditions and depressive symptoms

Hypothesis 3, the relationship between employment and working conditions and depressive symptoms was investigated. It was hypothesized that respondents with poorer employment and working conditions would report higher prevalence of depressive symptoms compared with respondents with better employment and working conditions.

Table 8

Level of Education with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Highest level of schooling ↑	.031*	3011	< 1%

1 = No schooling 11= above Bachelor's degree

* p<.05 (1-tailed)

Variables such as "employment status and reasons preventing the respondent from working" were explored. Table 9 provides information regarding correlations between employment and working conditions and depressive symptoms.

The results were consistent with the hypothesis. There was a significant negative Pearson correlation between "health problems as a reason preventing from working" and depressive symptoms (r =-.185 N = 764, p<.01), accounting for 3.42 % of the variance. The results indicate that people who are having health problems that prevent them from working are more likely to have depressive symptoms. There is also a significant positive correlation between "retired as a reason preventing from working" and depressive symptoms (r =.150 N = 764, p<.01), accounting for 2.25 % of the variance. The results indicate that there is an inverse relationship between "retired as a reason preventing from working" and depressive symptoms. That is, people who are prevented from working because they are retired are less likely to have depressive symptoms.

There was also a significant correlation between "not qualified for jobs preventing the respondent from working" and depressive symptoms. However, the correlation accounted for less than 1 % of the variance and was not interpreted because of the small correlation. Other variables related to employment and working conditions that were not significantly related to depression are presented in Table 3 in Appendix C.

3.6.4 Physical/Social environment and depressive symptoms

Hypothesis 4, the relationship between physical environment and depressive symptoms was investigated. It was hypothesized that respondents with problems or concerns in the physical environment would report higher prevalence of depressive

Table 9

Prevents Employment with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Prevents working: health problems ↓	**-.185****	**764**	**3.42%**
1 = Yes 2 = No			
Prevents working: not qualified for available jobs ↓	-.084**	764	< 1%
1 = Yes 2 = No			
Prevents working: retired ↓	**.150****	**764**	**2.25%**
1 = Yes 2 = No			
Prevents working: other reason ↓	.008	764	< 1%
1 = Yes 2 = No			

* *p<.01 (1-tailed)

symptoms compared with respondents with less problems or concerns in the physical environment. Variables related to the physical environment such as "problems for Aboriginal people in the community or neighbourhood," "the need for repairs of the dwelling," and "contaminated water" were explored. An aggregate of the variables indicating community problems (i.e., suicide, unemployment, family violence, sexual abuse, drug abuse, alcohol abuse, and other) was created to improve the reliability of the variables (Cronbach's $\alpha = .903$).

Table 10 provides information regarding the correlations between physical environment and depressive symptoms. Table 11 provides information regarding the correlations between the aggregate variable of community problems and depressive symptoms. See Table 4 in Appendix C for information regarding the correlations between the specific variables that comprise the aggregate variable of community problems and depressive symptoms.

The correlations between the variables "considers water in home safe to drink," "home rented/owned by respondent/another household member," "on waiting list for social assistance," "water is contaminated at times," and depressive symptoms were also significant. Although these variables are significant, each accounted for less than 1 % of the variance and was not interpreted because of the small correlations.

With respect to variables that were indicators of community problems for Aboriginal people in the community or neighbourhood, Pearson correlations were found that were consistent with the hypothesis. There was a significant negative correlation

Table 10

Physical/Environmental Problems with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Home rented/owned by respondent/other member ↓ 1 = Rented 2 = Owned	.076**	2830	< 1%
Considers water in home safe to drink ↓ 1 = Yes 2 = No	.083**	2737	< 1%
Times of the year water is contaminated ↓ 1 = Yes 2 = No	.042*	2605	< 1%
On waiting list for social housing ↓ 1 = Yes 2 = No	-.067*	852	< 1%

*p<.05 (1-tailed), * *p<.01 (1-tailed)

Table 11

Aggregate: Community Aboriginal Problems and Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Community Aboriginal problem items ↓ 1 = Yes 2 = No	**-.191****	**1410**	**3.6%**

* p<.01 (1-tailed)

between the aggregate "comprised of the community Aboriginal problem items" (r = -.191, N = 1410, p<.01) and depressive symptoms, accounting for 3.6 % of the variance. The variables that comprised the aggregate "community Aboriginal problem items" that were found to have significant negative correlations were as follows: "suicide" (r =-.125, N = 2184, p<.01), accounting for 1.56 % of the variance; "family violence" (r =.143, N = 2325, p<.01), accounting for 2.04 % of the variance; "sexual abuse" (r =-.153, N = 1989, p<.01), accounting for 2.34 % of the variance; "drug abuse" (r =-.123, N = 2427, p<.01), accounting for 1.5 % of the variance; and "other" (r =-.154, N = 2280, p<.01), accounting for 2.37 % of the variance. The results indicate that people who report problems for Aboriginal people in the neighbourhood or community where they are living are more likely to have depressive symptoms.

3.6.5 Personal health practices, coping skills, and depressive symptoms

Hypothesis 5, the relationship between personal health practices and coping skills and depressive symptom was investigated. It was hypothesized that respondents with poorer personal health practices and coping skills would report higher prevalence of depressive symptoms compared with respondents with better personal health practices and coping skills. Variables related to personal health practices and coping skills such as smoking, alcohol use and exercise were explored.

The relationship between personal health practices and coping skills and depressive symptoms was also investigated using items from the Métis supplement survey regarding exercise/recreational activities and depressive symptoms. An aggregate of the variables indicating exercise/recreational activities was created to improve the

reliability of the variables (Cronbach's $\alpha = .816$) Table 12 provides information regarding correlations between personal health practices and coping skills and depressive symptoms.

Table 13 provides the results of the correlation between the aggregate of the exercise variables and depressive symptoms. Table 4 in Appendix C provides information regarding the correlations between the specific variables that comprise the aggregate variable of community problems and depressive symptoms.

The Pearson correlations were consistent with the hypothesis. There was a significant negative correlation between the variables "frequency smoke cigarettes at present" and "depressive symptoms" ($r = -.111$, $N = 3047$, $p<.01$), accounting for approximately 1.23% of the variance. The results indicate that respondents who report that they smoke more frequently are more likely to have depressive symptoms. There was also a significant negative correlation between the variables "type of smoker and depressive symptoms" ($r = -.118$, $N = 3030$, $p<.01$), accounting for approximately 1.39% of the variance. The results indicate that the people who report that they smoke daily are more likely to have depressive symptoms than people who have never smoked.

Correlations between the variables "smoked over 100 cigarettes over a lifetime" and depressive symptoms, and "number of drinks per day on days when had a drink" and depressive symptoms, were also significant. However, each correlation accounted for less than 1 % of the variance and was not interpreted because of the small correlation. The variables "drank alcoholic beverage in past year" and "how often gambled" were also analyzed, but were not significantly correlated with depression (Table 5 in Appendix C).

Table 12

Personal Health Practices, Coping Skills, with Depressive Symptoms ↑ (Métis)

		r	N	% Variance
At present time frequency smoke cigarettes	↓	**-.111****	**3047**	**1.23%**
1 = Daily . . . 2= Not at All				
Over a lifetime smoked 100 or more cigarettes	↓	-.053*	1340	< 1%
1 = Yes 2 = No				
Type of smoker	↓	**-.118****	**3030**	**1.39%**
1 = Daily . . . 5= Non-smoker now, former occasional				
Number of drinks per day on days when had a drink↑		.035*	2196	< 1%
1 = 1 . . . 13 = more than 12				

*p<.05 (1-tailed), * *p< .01 (1-tailed)

Table 13

Aggregate: Exercise/Recreational Activity with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Exercise/recreational activity items ↓	.017**	2627	< 1%
1 = Yes 2 = No			

** p < .01 (1-tailed)

The correlation between the variable that comprised the exercise/recreational activity items and depressive symptoms was also significant, but accounted for less than 1 % of the variance and was not interpreted because of the small correlation. Table 6 in Appendix C provides information regarding the correlations between the specific variables that comprise the aggregate variable of the exercise/recreational activity items and depressive symptoms.

3.6.6 Social support networks and depressive symptoms

Hypothesis 6, the relationship between social support networks and depressive symptoms was investigated. It was hypothesized that respondents with less availability of social support would report higher prevalence of depressive symptoms compared with respondents with more social support. Variables such as "availability of social support" were explored. For survey items regarding availability of social support, an aggregate of the variables was created to improve the reliability of the variables (Cronbach's $\alpha = .927$). See Table 14 for the correlation between the aggregate of the social support variables with depressive symptoms. Table 7 in Appendix C provides information regarding the correlations between the specific variables that comprise the aggregate variable of social support and depressive symptoms.

Table 15 provides information regarding the correlations between the variable related to religion/spirituality (Métis supplement survey) and alcohol use and depressive symptoms.

Table 14

Aggregate: Frequency of Availability of Social Support with Depressive Symptoms ↑

		r	N	% Variance
Aggregate Social support items	↓	**.125****	**2899**	**1.56%**
1 = All of the Time . . . 4 = Almost None of the Time				

* *p<.01 level (1-tailed)

Table 15

Religion/Spirituality with Depressive Symptoms ↑ (Métis)

		r	N	% Variance
How religious/spiritual are you	↓	-.084**	3043	< 1%
1 = Very . . . 4 = Not at All				

* *p<0.01 (1-tailed)

Pearson correlations were found that were consistent with the hypothesis. There was a significant positive correlation between the aggregate "comprised of availability of social support items" and depressive symptoms (r = .125 N = 2899, p<.01), accounting for approximately 1.6 % of the variance. The results indicate that there is an inverse relationship between social support items and depressive symptoms. The variables that comprised the aggregate "availability of social support items" that were found to have significant positive correlations were as follows: "have someone to take you to the doctor" (r =.116, N = 3005, p<.01), accounting for 1.34 % of the variance; "how often have someone to have a good time with" (r =.109, N = 3000, p<.01), accounting for 1.18 % of the variance; "how often have someone get together with to relax" (r =-.103, N = 2997, p<.01), accounting for 1.06 % of the variance; and "how often have someone to do something enjoyable" (r = -.100, N = 2999, p<.01), accounting for 1 % of the variance. That is, people who reported having less availability of social support are more likely to have depressive symptoms.

The correlation between the variable "religion/spirituality" and depressive symptoms was significant. The correlation was significant, but accounted for less than 1 % of the variance and was not interpreted. Also see Table 7 in Appendix C for results regarding other variables related to personal health practices and coping skills that were not significantly correlated with depression.

3.6.7 Health services and depressive symptoms

Hypothesis 7, the relationship between health services and depressive symptoms was investigated. It was hypothesized that respondents involved with health services

(e.g., problems with access) would report higher prevalence of depressive symptoms compared with respondents who are less involved with health services. Variables related to health services were explored such as "contact with health professionals" and "receiving health care when needed." An aggregate of the variables indicating contact with health professionals was created to improve the reliability of the variables. See Table 16 for the correlation between the aggregate of the contact with health professionals variables with depressive symptoms. Table 8 in Appendix C provides information regarding the correlations between the specific variables that comprise the aggregate variable of contact with health professionals and depressive symptoms (Cronbach's $\alpha = .514$). Table 17 provides information regarding correlations between health services variables and depressive symptoms.

Table 16

Aggregate: Contact with Health Professionals with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Aggregate contact with health professionals ↓	**-.158****	**2908**	**2.50%**
1 = Yes 2 = No			

* *p<.01 (1-tailed)

Table 17

Health Services with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Access traditional medicine/healing/wellness practices↓	.060*	2075	< 1%
1 = Yes 2 = No			
Patient in hospital past year ↓	-.080**	3048	< 1%
1 = Yes 2 = No			
Ever seen an Aboriginal healer ↑	.095**	3044	< 1%
1 = Yes 2 = No			
Needed health care, but didn't get it↓	**-.181****	**3032**	**3.28 %**
1 = Yes 2 = No			
How often prescribed drugs in past year ↑	**.157****	**3046**	**2.46 %**
01 = Never 05 = More than 10 times			
Lacked money for prescribed drugs ↓	**-.162****	**2479**	**2.62 %**
1 = Yes 2 = No			

*p<.05 (1-tailed), **p<.01 (1-tailed)

Pearson correlations were found that were consistent with the hypothesis. There was a significant negative correlation between the aggregate variable "contact with health professionals" and depressive symptoms (r =-.158 N = 2908, p<.01), accounting for approximately 2.5% of the variance. The only variable that comprised the aggregate "contact with health professionals" that was found to have a significant negative correlation was "contact in the past year with a social worker/counsellor/psychologist" (r =-.213, N = 3023, p<.01), accounting for 4.54 % of the variance. The results indicate people who reported having more contact with health professionals are more likely to have depressive symptoms.

For the Métis respondents, there were also variables in the Métis supplement survey related to health services. There was a significant positive correlation between the variables "needed health care, but did not get it" and depressive symptoms (r = -.181, N = 3032, p<.01), accounting for 3.28 % of the variance. The results indicate that people who reported needing but not receiving health care are more likely to have depressive symptoms. There was a significant positive correlation between the variables "how often prescribed drugs in past year" and depressive symptoms (r =.157 N = 3046, p<.01), accounting for 2.46 % of the variance. The results indicate that people who frequently were prescribed drugs in the past year are more likely to have depressive symptoms. There was a significant negative correlation between "lacked money for prescribed drugs" and depressive symptoms (r = -.162 N = 2479, p<.01), accounting for 2.62 % of the variance. The results indicate people who reported lacking money for prescribed drugs are more likely to have depressive symptoms.

The correlations between the variables "access to traditional medicine/healing/ wellness practitioner," "ever seen an Aboriginal healer," and "patient in hospital in past year," and depressive symptoms were also significant. Although the correlations are significant, they accounted for less than 1 % of the variance and are not interpreted because of the small correlations.

3.6.8 Culture and depressive symptoms

Hypothesis 8, the relationship between culture and depressive symptom was investigated. It was hypothesized that respondents involved with aspects of culture would report lower prevalence of depressive symptoms compared with respondents who report less involvement with culture. Variables related to culture such as language and cultural practices were explored. Tables 18, 19, and 20 provide information regarding correlations between variables related to language, school, and other cultural practices and depressive symptoms.

Table 18

Language with Depressive Symptoms ↑ (Métis)

	r	N	% Varianc
Ability to understand primary Aboriginal language ↓	**.107****	**635**	**1.14 %**
1 = Yes 2 = No			
Ability to speak primary Aboriginal language ↓	**.125****	**633**	**1.56 %**
1 = Very well 4= Few words			
Usage primary Aboriginal language: in household↓	**.134****	**635**	**1.80 %**
1 = All of the time 5= Not at all			
Usage of primary Aboriginal language: other places↓	**.115****	**623**	**1.32 %**
1 = All of the time 5= Not at all			
Importance of your Aboriginal language↓	-.075**	2956	< 1%
1 = Very important 4=Not important			

*p < 0.05 (1-tailed), ** p < .01 (1-tailed)

Table 19

School with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Family member student at residential/industrial school↓	-.031*	3062	< 1%
1 = Yes 2 = No			
Any teachers or teachers' aides were Aboriginal ↓	.036*	2743	< 1%
1 = Yes 2 = No			
Taught about Ab. People in elementary/2ndary school ↓	-.032*	2923	< 1%
1 = Yes 2 = No			
Asses accuracy of teachings about Aboriginal people↓	.71**	1400	< 1%
1 = Usually accurate 4 = Never accurate			
Was Aboriginal language spoken at home ↓	.058*	2992	< 1%
1 = Yes 2 = No			

*p < .05 l (1-tailed), **p < .01 (1-tailed)

Table 20

Other Cultural Practices with Depressive Symptoms (Métis Supplement Survey)

	r	N	% Variance
Own Métis cultural articles ↓	-.046**	2933	< 1%
1 = Yes 2 = No			
How important for children learn Aboriginal language↓	.058**	2924	< 1%
1 = Very important . . . 4 = Not important at all			
How important for children learn Métis culture↓	-.044**	2920	< 1%
1 = Very important . . . 4 = Not important at all			
Do any traditional art or craftwork ↓	-.076**	3015	< 1%
1 = Yes 2 = No			

*p < .05 (1-tailed), **p < .01 (1-tailed)

Pearson correlations were found that were consistent with the hypothesis. There was a significant positive correlation between the variables "use of primary Aboriginal language at home" and depressive symptoms, (r =.134, N = 635, p<.01), accounting for approximately 1.8 % of the variance. The results indicate that respondents who do not use primary Aboriginal language at home are more likely to have depressive symptoms. There was a significant positive correlation between the variables "ability to speak primary language" and depressive symptoms (r =.125 N = 633, p<.01) accounting for approximately 1.56 % of the variance. The results indicate that respondents who are unable to speak Aboriginal language are more likely to have depressive symptoms. The results also indicated that in comparison with other variables related to culture, language was the most significant variable.

There was a significant positive correlation between the variables "usage of primary Aboriginal language at other places" and depressive symptoms (r =.115 N = 623, p<.01) accounting for approximately 1.32% of the variance. The results indicate that respondents who are able to speak Aboriginal language at other places are less likely to have depressive symptoms. There was also a significant positive correlation between the variables "ability to understand primary Aboriginal language" and depressive symptoms (r =.107 N = 635, p<.003) accounting for approximately 1.14% of the variance. The results indicate that respondents who are able to understand Aboriginal language are less likely to have depressive symptoms.

The relationship between culture in the context of school experiences and depressive symptoms was also investigated. Correlations between the variables

"assessment of accuracy of teachings of Aboriginal people," "any teachers or teachers' aides were Aboriginal," "Aboriginal language spoken at home," "is/was taught about Aboriginal peoples in elementary/secondary," "family member as student at residential/industrial school," and depressive symptoms were significant. Although the correlations are significant, they accounted for less than 1 % of the variance and are not interpreted because of the small correlations.

Correlations between the variables related to Aboriginal cultural practices and importance of culture and depressive symptoms from the Métis supplement survey were also analyzed. Correlations between the variables "do any traditional art or craftwork," "how important for children to learn Aboriginal language," "own Métis articles," "importance of learning Métis culture," and depressive symptoms were significant. However, the correlations accounted for less than 1 % of the variance and are not interpreted because of the small correlations. Results regarding other variables related to culture that were not significantly correlated with depression are presented in Table 9 in Appendix C.

3.6.9 Gender and depressive symptoms

The final hypothesis, Hypothesis 9, the relationship between gender and depressive symptom was investigated. It was hypothesized that female respondents would report higher prevalence of depressive symptoms compared with male respondents. Table 21 provides information regarding the correlation between gender and depressive symptoms.

The positive correlation between the variables "gender" and depressive symptoms was significant. However, the correlation accounted for less than 1 % of the variance and is not interpreted because of the small significance.

3.7 Multiple Regression Analysis

Upon completing the correlation analyses, the variables with significant correlations for the Métis respondents were selected for the stepwise regression model and are reported in Table 22. The variables that were candidates in the analysis were as follows: "social assistance as income source," "prevents working: health problems" and "prevents working: retired," "community Aboriginal problems," "frequency smoke cigarettes," "type of smoker," "aggregate social support items," "aggregate contact with health professionals," "needed health care but did not get it," "how often prescribed drugs in past year," "lacked money for prescribed drugs," "ability to understand primary Aboriginal language," "ability to speak primary Aboriginal language," "use of primary Aboriginal language at home," and "use of primary Aboriginal language at other places."

Table 21

Gender with Depressive Symptoms ↑ (Métis)

		r	N	% Variance
Gender	↑	.031*	3064	< 1%

1 = Male 2=Female

* $p < .05$ (1-tailed)

Table 22

Correlations with Depression ↑ (Métis)

Variable	*r*
Income source: social assistance ↓	- .110
Prevents working: health problems ↓	-.185
Prevents working: retired ↓	.150
Community Aboriginal Problems ↓	.191
Frequency smoke cigarettes ↓	-.111
Type of smoker ↓	-.118
Social support items ↓	.125
Contact with health professionals ↓	-.158
Needed health care, but didn't get it ↓	-.181
How often prescribed drugs in past year ↑	.157
Lacked money for prescribed drugs ↓	-.162
Understand primary Aboriginal language ↓	.107
Speak primary Aboriginal language ↓	.125
Use primary Aboriginal language at home ↓	.134
Use Aboriginal language at other places ↓	.115

Note: Italicized variables were dropped because of loss of cases due to missing data3.8

3.8 Predicting Health Determinants

A stepwise multiple regression analysis was performed to predict correlations with depressive symptoms. The variables that were entered into the multiple regression analysis were the aggregated depression variable as the dependent variable and the variables with significant and substantial correlations (greater than 1 % variance) were candidates as the independent variables.

The stepwise regression showed that the following variables were significant predictor variables for depressive symptoms: "aggregate contact with health professional," "needed health care but didn't get it," "usage of primary Aboriginal language in household," and "type of smoker." As shown in Table 23, the R^2 for Step is as follows: $R^2 = .043$ for Step 1: $R^2 = .092$ for Step 2: $R^2 = .135$ for Step 3: $R^2 = .176$ for Step 4, $p < .01$. The results of the final model indicate that respondents who have contact with a health professional, need health care, but do not receive health care, do not use Aboriginal language in the household, and smoke on a daily basis will be more likely to have depressive symptoms. Tables 24 and 25 provide the ANOVA summary and coefficients.

Table 23

Stepwise Regression for Métis With Depressive Symptoms

Variables removed	Variables in the model	R	R^2	Adjusted R^2
	1 Contact health professional	.207	.043	.038
	2 Contact health professional Needed health care, but not get	.303	.092	.083
	3 Contact health professional Needed health care, but not get Use Ab. language in home	.367	.135	.123
	4 Contact health professional Needed health care, but not get Use Ab. language in home Type of smoker	.419	.176	.160

Table 24

ANOVA for Métis With Depressive Symptoms

	Sum of Squares	df	Mean Square	F	Sig.
Regression	14.875	4	3.719	11.338	.000
Residual	69.860	213	.328		
Total	84.735	217			

Table 25

Coefficients for Métis with Depressive Symptoms

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	*t*	Sig.
(Constant)	-.829	.218		-3.812	.000
Contact health professional	.161	.070	.150*	2.318	.021
Needed health care didn't get it	.222	.087	.168*	2.540	.012
Use Ab. language in home	-.108	.034	-.198**	-3.147	.002
Type of smoker	.069	.021	.207**	3.247	.001

* $p < .05$ (1-tailed), **$p < .01$ (1-tailed)

3.9 Inuit respondents

The results of analyses of the Inuit respondents will also be explored. Results will include the bivariate correlations and multiple regression analyses.

3.9.1 Income and depressive symptoms

Hypothesis 1, the relationship between income level and depressive symptoms was investigated. It was hypothesized that respondents with lower income levels would report higher prevalence of depressive symptoms compared with respondents with higher income levels. Variables related to income, such as source of income and total income, were explored. Table 26 provides information regarding correlations between income level and depressive symptoms.

Consistent with the hypothesis, there was a significant positive Pearson correlation between the two variables, "social assistance as a source of income" and depressive symptoms ($r = .130$, $N = 2115$, $p<.01$), accounting for 1.69 % of the variance. The results indicate that respondents who are on Social Assistance are more likely to have depressive symptoms.

Correlations between the variables "Old Age Security Pension (OAS) and Guaranteed Income Supplement (GIS) as sources of income" and depressive symptoms was significant, but accounted for less than 1 % of the variance and are not interpreted because of the small correlation. Correlations between the variables "economic family income," "household income," "employment income," and "total income" and depressive symptoms were also significant, but each accounted for less than 1 % of the variance and

was not interpreted. Table 10 in Appendix C provides results regarding variables related to income that were not significantly correlated with depression.

Table 26

Income With Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Income source: OAS, GIS, or Spouse's Allowance ↓	.043*	2120	< 1%
1 = Yes 2 = No			
Income source: Social Assistance ↓	**- .130****	**2115**	**1.69%**
1 = Yes 2 = No			
Economic family income ↑	-.078**	2133	< 1%
1 = less than $10,000 . . . 7= $80,000 or more			
Household income ↑	-.074**	2133	< 1%
1 = $1 - 2,499 . . . 13 = $80,000 and over			
Employment income ↑	-.070**	2133	< 1%
1 = loss or none . . . 7= $40,000 or more			
Total income ↑	-.065**	2133	< 1%
1 = less than $5,000 . . . 7= $40,000 or more			

** p <.01 (1-tailed), *p<.05 (1-tailed)

3.9.2 Education and depressive symptoms

Hypothesis 2, the relationship between education and depressive symptoms was investigated. It was hypothesized that respondents with less education would report higher prevalence of depressive symptoms compared with respondents with more education. Variables related to the levels of education completed were explored. Table 27 provides information regarding correlations between level of education and depressive symptoms.

For the Inuit, the Pearson correlation between "graduating from high school" and depressive symptoms accounted for less than 1 % of the variance and are not interpreted because of the small correlations. Also see Table 11 in Appendix C for results regarding other variables related to education that were not significantly correlated with depression.

Table 27

Level of Education With Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Did you graduate from high school (not equiv/GED)↓	.091*	628	< 1%
1 = Yes 2 = No			

* p<.05 (1-tailed)

3.9.3 Employment and working conditions and depressive symptoms

Hypothesis 3, the relationship between employment and working conditions and depressive symptoms was investigated. It was hypothesized that respondents with poorer employment and working conditions would report higher prevalence of depressive symptoms compared with respondents with better employment and working conditions. Variables related to employment such as employment status and reasons preventing the respondent from working were explored. Table 28 provides information regarding the correlation between "employment and working conditions" and depressive symptoms.

The results were consistent with the hypothesis. There was a significant negative Pearson correlation between "prevents from working: health problems" and depressive symptoms (r = -.133 N = 482, p<.01), accounting for approximately 1.76% of the variance. The results indicate that respondents who are having health problems that prevent them from working are more likely to have depressive symptoms. There was a significant positive correlation between "retired as a reason preventing from working" and depressive symptoms (r = -.175 N = 482, p<.01), accounting for approximately 3.06% of the variance. Respondents who are prevented from working because they are retired are less likely to have depressive symptoms. Labour force activity was also significantly correlated with depressive symptoms, but the correlation accounted for less than 1 % of the variance and was not interpreted. Variables related to employment and working conditions that were analyzed but not significantly correlated with depression are in Table 12 in Appendix C.

Table 28

Prevents Employment With Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Prevents working: health problems ↓	**-.133****	**482**	**1.76%**
1 = Yes 2 = No			
Prevents working: retired ↓	**.175****	**482**	**3.06%**
1 = Yes 2 = No			
Labour force activity ↓	.052**	2118	< 1%
1 = Employed 2=Unemployed			

* *p<.01 (1-tailed)

3.9.4 Physical/Social environment and depressive symptoms

Hypothesis 4, the relationship between physical environment and depressive symptoms was investigated. It was hypothesized that respondents with problems or concerns in the physical environment would report higher prevalence of depressive symptoms compared with respondents with less problems or concerns in the physical environment. Variables related to the physical environment such as problems in the community or neighbourhood for Aboriginal people, the need for repairs of the dwelling, and contaminated water were explored.

An aggregate of the variables indicating community problems was created to improve the reliability of the variables (Cronbach's $\alpha = .903$). Table 29 provides information regarding the small correlations between physical environment and depressive symptoms. Table 30 provides information regarding the correlations between the aggregate variable of community Aboriginal problems and depressive symptoms. Table 13 in Appendix C provides information regarding the correlations between the specific variables that comprise the aggregate variable of community Aboriginal problems and depressive symptoms.

Correlations between the variables "home rented/owned by respondent or other family member," "considers water safe to drink," and "times of year water is contaminated" were also significant, but each accounted for less than 1 % of the variance and were not interpreted.

Table 29

Environment Problems With Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Home rented/owned by respondent/house member ↓ 1 = Rented 2 = Owned	-.081**	1954	< 1%
Considers water in home safe to drink ↓ 1 = Yes 2 = No	.052*	1894	< 1%
Times of the year water is contaminated ↓ 1 = Yes 2 = No	-.065**	1761	< 1%
On waiting list for social housing ↓ 1 = Yes 2 = No	.039	337	< 1%

*p<.05 (1-tailed), * *p<.01 (1-tailed)

Table 30

Aggregate Variable: Community Aboriginal Problems With Depressive Symptoms ↑

	r	N	% Variance
Community Aboriginal problem items ↓ 1 = Yes 2 = No	**-.116****	**923**	**1.35%**

** p<.01 (1-tailed)

With respect to variables that were indicators of community problems in the community or neighbourhood for Aboriginal people, Pearson correlations were found that were consistent with the hypothesis. There was a significant negative correlation between the aggregate comprising the "community Aboriginal problem" items (r = -.116, N = 923, $p<.01$) and depressive symptoms, accounting for approximately 1.35% of the variance. The results indicate that respondents who report problems for Aboriginal people in the neighbourhood or community where they are living are more likely to have depressive symptoms.

The variable, "family violence" (r = -.112, N = 1409, $p<.01$), accounting for approximately 1.25% of the variance, was the only variable among the variables that comprised the aggregate "community Aboriginal problem items" that was found to have a significant negative correlation. The significance of the variable, "family violence," was almost as strong as the aggregate comprising the "community Aboriginal problem" items. The other variables comprising the aggregate each accounted for less than 1 % of the variance and are not interpreted. The results indicate that people who report problems for Aboriginal people in the neighbourhood or community where they are living are more likely to have depressive symptoms.

The Inuit supplement included a section in which Inuit respondents were asked about whether or not they were satisfied with a number of issues in their community. An aggregate of the variables indicating satisfaction with community aspects was created (Cronbach's α = .735). Table 31 provides information regarding the correlation between community satisfaction and depressive symptoms. The specific variables that comprise

Table 31

Aggregate Variable: Community Satisfaction With Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Community satisfaction items ↓	**.147****	**657**	**2.16%**
1 = Yes 2 = No			

** p<.01 (1-tailed)

the aggregated variable of indicators of aspects of community satisfaction are provided in Table 14 in Appendix C.

The Inuit supplement also included a section in which Inuit respondents were asked about whether or not they felt safe in their community. With respect to the Inuit respondents, the relationship between the physical environment and depressive symptoms was investigated using items from the Inuit supplement survey regarding how safe the respondent feels from crime in the community and depressive symptoms. Table 32 provides information regarding the correlation between community problems and depressive symptoms.

There was a significant positive correlation between the aggregate comprised of the "community satisfaction" items (r =.147 N = 657, p<.01) and depressive symptoms, accounting for approximately 2.16% of the variance. The results suggest that the respondents who reported having less community satisfaction were more likely to have depressive symptoms. The variable, "satisfaction with present life in community" (r = .202, N = 1906, p<.01), accounting for approximately 4.08% of the variance, was the only variable among the variables that comprised the aggregate "community satisfaction items" that was found to have a significant negative correlation as the other variables each accounted for less than 1 % of the variance and are not interpreted.

Significant correlations were found for all three variables related to safety in the community. There was a significant negative correlation between the variable "how safe feel when home alone in the evening" and depressive symptoms (r = -.144 N = 2068,

Table 32

Safety from Crime With Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
How safe feel when walking alone in evening ↓	**-.144****	**2068**	**2.07%**
1 = Very Safe 5 = Does not walk alone			
Satisfaction with personal safety from crime ↓	**.137****	**1929**	**1.87%**
1 = Satisfied 4 = Dissatisfied			
Past 5 years considered moving out of community↓	**-.121****	**2041**	**1.46%**
1 = Yes 2 = No			

*p<.05 (1-tailed), * *p<.01 (1-tailed)

$p<.01$), accounting for approximately 2.07% of the variance. There is an inverse relationship between feeling safe when walking home in the evening and depressive symptoms. That is, respondents who feel safe walking home in the evening are more likely to have depressive symptoms. There was a significant positive correlation between "satisfaction with personal safety from crime" and depressive symptoms ($r = -.137$ $N = 1929$, $p<.01$), accounting for approximately 1.87% of the variance. The results indicate that respondents who reported feeling dissatisfied with personal safety from crime are more likely to have depressive symptoms. There was a significant negative correlation between the variable "considering moving out of the community in the past 5 years" and depressive symptoms ($r = -.121$ $N = 2041$, $p<.01$), accounting for approximately 1.46% of the variance. There is an inverse relationship, indicating that respondents who considered moving out of the community in the past 5 years were more likely to have depressive symptoms.

3.9.5 Personal health practices, coping skills, and depressive symptoms

Hypothesis 5, the relationship between personal health practices, coping skills, and depressive symptoms was investigated. It was hypothesized that respondents with poor health practices or coping skills would report higher prevalence of depressive symptoms compared with respondents with better health practices or coping skills. Variables such as "type of smoker," "drank alcoholic beverages in past year," "frequency smoke cigarettes at present," and "how often had 5 + drinks on one occasion in past 12 months" were explored. Table 33 provides information regarding correlations between personal health practices and coping skills and depressive symptoms.

Table 33

Personal Health Practices, Coping Skills, with Depressive Symptoms ↑ (Inuit)

		r	N	% Variance
At present time frequency smoke cigarettes	↓	-.077**	2124	< 1 %
1 = Daily . . . 2 = Not at All				
Type of smoker	↓	-.084**	2114	< 1 %
1 = Daily . . . 5 = Non-smoker now, former				
Drank alcoholic beverage in past year	↓	-.081**	2106	< 1 %
1 = Yes 2 = No				

*p<.05 (1-tailed), * *p< .01 (1-tailed)

The variables "frequency smoke cigarettes at present," "type of smoker," "drank alcoholic beverages in past year," and "how often had 5 + drinks on one occasion in past 12 months" were significantly correlated with depressive symptoms, but the correlations accounted for less than 1 % of the variance and were not interpreted. The variable "over a lifetime smoked 100 or more cigarettes" and "number of drinks per day on days that had a drink" were also analyzed but were not significantly correlated with depression (Table 15 in Appendix C).

3.9.6 Social support networks and depressive symptoms

Hypothesis 6, the relationship between social support networks and depressive symptom was investigated. It was hypothesized that respondents with less availability of social support would report higher prevalence of depressive symptoms compared with respondents with more social support. Variables related to social support networks such as availability of social support were explored. For survey items regarding availability of social support, an aggregate of the variables was created to improve the reliability of the variables (Cronbach's $\alpha = .927$). See table 34 for the results of the aggregate of the social support variables correlated with depressive symptoms. The specific variables that comprise the aggregate variable of social support and depressive symptoms are provided in Table 16 in Appendix C.

Pearson correlations were found that were consistent with the hypothesis. There was a significant positive correlation between the aggregate that comprised "availability of social support items" and depressive symptoms ($r = .260$ N = 1954, $p < .01$), accounting

Table 34

Aggregate: Frequency of Availability Social Support with Depressive Symptoms (Inuit)

	r	N	% Variance
Aggregate social support items ↓	**.260****	**1954**	**6.76%**

1 = All of the Time . . . 4 = Almost None of the Time

* *p<.01 level (1-tailed)

for approximately 6.76% of the variance. The results indicate that there is an inverse relationship between social support items and depressive symptoms. The variables that comprised the aggregate "social support items" that were found to have significant negative correlations were as follows: "how often you have someone to listen to you" (r =.163, N = 2048, p<.01); accounting for approximately 2.66% of the variance "how often someone to count on when need advice" (r =.197, N = 2046, p<.01), accounting for approximately 3.88% of the variance; "how often have someone to take you to the doctor" (r =.153, N = 2024, p<.01), accounting for approximately 2.34% of the variance; "how often have someone who shows love/affection" (r =.212, N = 2037, p<.01), accounting for approximately 4.49% of the variance; "how often have someone to have a good time with" (r =.183, N = 2048, p<.01), accounting for approximately 3.35% of the variance; "how often someone have someone to confide in/talk about problems" (r =.223, N = 2028, p<.01), accounting for approximately 4.97% of the variance; "how often have someone get together with to relax" (r =.222, N = 2035, p<.01), accounting for approximately 4.92% of the variance; and "how often have someone to do something enjoyable" (r =.216, N = 2048, p<.01), accounting for approximately 4.67% of the variance. That is, people who reported having less availability of social support are more likely to have depressive symptoms.

In the Inuit supplement survey, the variable related to strength of ties with family in other household in community as an indicator of social support was also analyzed. Table 35 provides information regarding the correlation between strength of ties with family and depressive symptoms.

Table 35

Strength of Family Ties With Depressive Symptoms (Inuit) ↑

	r	N	% Variance
Strength ties w/family in other household ↑	**-.205****	**2106**	**4.20%**

1 = Very weak . . . 5 = Very strong

* *p<.01 level (1-tailed)

There was a significant negative correlation between the variable "strength of ties with family in other household in community" and depressive symptoms (r = -.205, N = 2106, p<.01), accounting for approximately 4.20% of the variance. The inverse relationship suggests that respondents who reported having weak ties with family in the community were more likely to have depressive symptoms.

The Inuit supplement survey also included a section in which respondents were asked questions about community involvement. Table 36 provides information regarding the correlation between community involvement and depressive symptoms. Correlations between the variables "related to community involvement" and depressive symptoms are significant. However, the correlations accounted for less than 1 % of the variance and are not interpreted.

3.9.7 Health services and depressive symptoms

Hypothesis 7, the relationship between health services and depressive symptoms was investigated. It was hypothesized that respondents involved with health services (e.g., problems with access) would report higher prevalence of depressive symptoms compared with respondents who experience fewer problems or less involvement with health services. Variables related to health services were explored such as "contact with health professionals" and "receiving health care when needed." An aggregate of the variables indicating contact with health professionals was created to improve the reliability of the variables (Cronbach's α = .514). Table 37 provides information regarding correlations between health services variables and depressive symptoms.

Table 36

Community Involvement With Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Volunteered community organization in past 12 months ↓	.053**	2068	< 1 %
1 = Yes 2 = No			
Worked at community event in past 12 months ↓	.067**	2073	< 1 %
1 = Yes 2 = No			
Attended local committee or board in past 12 months ↓	.064**	2069	< 1 %
1 = Yes 2 = No			
Attended public meeting in community past 12 months ↓	.067**	2074	< 1 %
1 = Yes 2 = No			
Attended/participated local sports event past 12 months ↓	.069**	2077	< 1 %
1 = Yes 2 = No			

* *p<.01 level (1-tailed)

Table 37

Aggregate: Contact with Health Professionals with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Aggregate contact with health professionals ↓	-.090**	2094	< 1 %
1 = Yes 2 = No			

* *p<.01 (1-tailed)

Table 17 in Appendix C provides information regarding the specific variables that comprise the aggregated variable of indicators of the variable contact with health professionals.

Correlations between the variables "contact with health professionals" and depressive symptoms were significant, but accounted for less than 1 % of the variance and were not interpreted. The variable, "contact in the past year with social worker/counsellor/psychologist" (r = -.159, N = 2120, p<.01), accounting for approximately 2.53% of the variance, was the only variable among the variables that comprised the aggregate "contact with health professionals" that was found to have a significant negative correlation. The other variables each accounted for less than 1 % of the variance and are not interpreted. The results indicate that people who report having contact with a social worker/counsellor/psychologist are more likely to have depressive symptoms.

3.9.8 Culture and depressive symptoms

Hypothesis 8, the relationship between culture and depressive symptom was investigated. It was hypothesized that respondents involved with cultural aspects would report lower prevalence of depressive symptoms compared with respondents who report less involvement with culture. Variables related to culture such as language and having Aboriginal teachers were explored. Table 38 provides information regarding correlations between variables related to language and school and depressive symptoms.

Correlations between the variables "any teachers or teachers' aides were Aboriginal," "teachers or teachers' aides taught in Aboriginal language," "is/was taught

Table 38

School and Language with Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Any teachers or teachers' aides were Aboriginal ↓	-.071*	1887	< 1%
1 = Yes 2 = No			
Teacher/teachers' aides taught in Aboriginal language ↓	-.079**	1919	< 1%
1 = Yes 2 = No			
Is/was taught Ab. language in elementary/secondary ↓	-.069**	1918	< 1%
1 = Yes 2 = No			

*p < .05 l (1-tailed), **p < .01 (1-tailed)

Aboriginal language in elementary/secondary school," and depressive symptoms were significant. Although the correlations were significant, they accounted for less than 1 % of the variance and were not interpreted because of the small correlations. The variables that were analyzed but were not significantly correlated with depression are in Tables 18 and 19 in Appendix C

3.9.9 Gender and depressive symptoms

The final hypothesis, Hypothesis 9, the relationship between gender and depressive symptom was investigated. It was hypothesized that female respondents would report higher prevalence of depressive symptoms compared with male respondents. Table 39 provides information regarding the correlation between gender and depressive symptoms.

The positive correlation between the variables "gender" and depressive symptoms was significant. However, the correlation accounted for less than 1 % of the variance and is not interpreted because of the small significance.

Table 39

Gender and Depressive Symptoms ↑ (Inuit)

		r	N	% Variance
Gender	↑	.050*	2140	< 1%

1 = Male 2=Female

* $p < .05$ (1-tailed)

3.10 Multiple Regression Analysis

3.10.1 Depressive Symptoms for the Inuit

Upon completing the correlation analyses, the variables with significant correlations were selected for the stepwise regression model. The selected variables are reported in Table 40 for the Inuit respondents. The variables that were candidates in the analysis were as follows: "social assistance as income source," "prevents working: health problems" and "prevents from working: retired," "aggregate community satisfaction items," "how safe feel when at home alone in the evening," "satisfaction with personal safety from crime," "in past 5 years have considered moving out of community," "community Aboriginal problems," "strength of ties with family in other household in community," and "aggregate social support items." However, the following variables were removed from the regression analysis because too many cases were lost when the variables were entered into the analysis: "income source: social assistance," "prevents from working: health problems," and "prevents from working: retired."

3.10.2 Predicting Health Determinants

A stepwise multiple regression analysis was performed to predict correlations with depressive symptoms. The variables that were entered into the multiple regression were the aggregated depression variable as the dependent variable and the variables with significant and substantial correlations (greater than 1 % variance) were candidates as the independent variables.

Table 40

Correlations with Depression ↑ (Inuit)

Variable	*r*
Income source: social assistance ↓	- .130
Prevents working: health problems ↓	-.133
Prevents working: retired ↓	.175
Community Satisfaction items ↓	-.147
How safe feel when home alone in evening ↓	-.144
Satisfaction with personal safety from crime ↓	.137
Considered moving out of community ↓	-.121
Community Aboriginal problems ↓	-.116
Strength of ties w/family in other household ↑	-.116
Social support items ↓	.260

Note: Italicized variables were dropped because of loss of cases due to missing data

On the first step, the aggregate variable "social support" was entered into the model. It was significantly correlated with depressive symptoms. On the second step, "strength of ties with family in another household in the community" was entered into the model. On the third and subsequent steps, the following variables were entered into the analysis in consecutive steps as follows: 3) "aggregate community satisfaction items"; 4) "how safe feel when at home alone in the evening"; 5) "satisfaction with personal safety from crime"; 6) "aggregate community Aboriginal problems"; and 7) "in past 5 years, considered moving out of the community."

The stepwise regression showed that the following variables were significant predictors variables for depressive symptoms: "aggregate social support," "community satisfaction," "feel safe home alone in the evening," and "in the past 5 years considered moving out of the community" (R^2 =.282 for Step 4, *p < .05). As shown in Table 41, the R^2 for Step is as follows: R^2 = .019 for Step 1: R^2 = .048 for Step 2: R^2 = .065 for Step 3: R^2 = .079 for Step 4, p < .05. The results of the final model indicate that the respondents who had low social support, low satisfaction with the community, did not feel safe at home alone in the evening, and considered moving out of the community were more likely to have depressive symptoms. Tables 42 and 43 provide the ANOVA summary and standardized and unstandardized coefficients coefficients.

3.10.3 Further Exploratory Analyses

Anxiety symptoms for the Inuit. The 2001 Aboriginal Peoples Survey also included questions related to symptoms of anxiety. The survey questions in the Inuit supplement

Table 41

Stepwise Regression for Inuit with Depressive Symptoms

Variables removed		Variables in the model	*R*	R^2	Adjusted R^2
	1	Aggregate social support	.137	.019	.016
	2	Aggregate social support	.220	.048	.043
		Community satisfaction items			
	3	Aggregate social support	.256	.065	.057
		Community satisfaction items			
		Feel safe home alone evening			
	4	Aggregate social support	.282	.079	.068
		Community satisfaction items			
		Feel safe home alone evening			
		Considered move out community			

Table 42

ANOVA for Inuit with Depressive Symptoms

	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.885	4	.721	7.285	.000
Residual	33.463	338	.099		
Total	33.348	342			

Table 43

Coefficients for Inuit with Depressive Symptoms

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	*t*	Sig.
(Constant)	1.515	.144		10.524	.000
Aggregate social support	.052	.021	.128*	2.430	.016
Community satisfaction items	.061	.026	.130*	2.399	.017
Feel safe home alone evening	-.091	.041	-.118*	-2.222	.027
Considered moving out community	-.085	.038	-.124*	-2.267	.024

* $p < .05$ (1-tailed)

are: (1) On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you been a very nervous person?; and (2) On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you felt calm and peaceful? The inclusion of the items in the 2001 Aboriginal Peoples Survey provided an opportunity to explore how respondents may experience anxiety, another symptom of psychological distress, in relation to measures of population health. An aggregate of the variables indicating anxiety symptoms was created (Cronbach's $\alpha = .527$).

Upon completing correlation analyses of the same variables related to the health determinants with anxiety symptoms, the variables with significant correlations were selected for the stepwise regression model as further exploratory analyses. The selected variables for the Inuit respondents are reported in Table 44. The variables that were candidates in the analysis were: "prevents working: going to school and retired," "aggregate community satisfaction items," "how safe feel when at home alone in the evening," "satisfaction with personal safety," "aggregate social support items," and "strength of ties with family in other household in community."

3.10.4 Predicting health determinants with anxiety symptoms

A stepwise multiple regression analysis was performed to predict correlations with anxiety symptoms. The variables that were entered into the multiple regression were the aggregated anxiety variable as the dependent variable and the variables with significant and substantial correlations (greater than 1 % variance) were candidates as the independent variables.

Table 44

Correlations with Anxiety ↑ (Inuit)

Variable	*R*
Prevents working: going to school ↓	-.108
Prevents working: retired ↓	.151
Community Satisfaction items ↓	.119
How safe feel when home alone in evening ↓	-.155
Satisfaction with personal safety from crime ↓	.135
Social support items ↓	.167
Strength of ties w/family in other household ↑	-.159

Note: Italicized variables were dropped because of loss of cases due to missing data

On the first step, the aggregate "social support" was entered into the model. It was significantly correlated with anxiety symptoms. On the second step, "strength of ties with family in another household in the community" was entered into the model. On the third and subsequent steps, the following variables were entered into the analysis in consecutive steps: 3) "aggregate community satisfaction items"; 4) "how safe feel when at home alone in the evening"; 5) "satisfaction with personal safety from crime"; 6) "aggregate community Aboriginal problems"; and 7) "in past 5 years, considered moving out of the community" (see Table 45).

The stepwise regression showed that the following variables were significant predictors variables for depressive symptoms: "aggregate social support," "strength of ties w/family outside home," "in the past 5 years considered moving out of the community," and "feel safe home alone in the evening," (R^2 =.054 for Step 4, **p < .01). As shown in Table 49, the R^2 for Step is as follows: R^2 = .008 for Step 1: R^2 = .026 for Step 2: R^2 = .039 for Step 3: R^2 = .054 for Step 4, p < .05. The results of the final model indicate that respondents who have low social support, weak ties with family in the community, low satisfaction with the community, and do not feel safe when home alone in the evening will be more likely to be anxious. Tables 46 and 47 provide the ANOVA summary and coefficients.

Table 45
Stepwise Regression for Inuit with Anxiety Symptoms

Variables removed		Variables in the model	*R*	R^2	Adjusted R^2
	1	Aggregate social support	.089	.008	.006
	2	Aggregate social support	.163	.026	.023
		Strength of ties w/family outside home			
	3	Aggregate social support	.197	.039	.034
		Strength of ties w/family outside home			
		Community satisfaction items			
	4	Aggregate social support	.232	.054	.048
		Strength of ties w/family outside home			
		Community satisfaction items			
		Feel safe home alone evening			

Table 46

ANOVA for Inuit with Anxiety Symptoms

	Sum of Squares	Df	Mean Square	F	Sig.
Regression	7.721	4	1.930	8.518	.000
Residual	133.525	598	.227		
Total	143.246	602			

Table 47

Coefficients for Inuit with Anxiety Symptoms

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	*t*	Sig.
(Constant)	1.846	.166		11.142	.000
Aggregate social support	.018	.025	.029	.706	.481
Community satisfaction items	-.064	.021	-.129**	-3.109	.002
Strength ties w/family outside home	.077	.030	.102*	2.537	.011
Feel safe home alone evening	-.136	.044	-.124**	-3.076	.002

* $p < .05$, ** $p < .01$

Alcohol use for the Inuit, Métis, and North American Indian respondents. The item in the 2001 Aboriginal Peoples Survey that asked, "On the days that you had a drink, how many drinks did you usually have" was asked of the Métis, Inuit, and North American Indian respondents. A stepwise multiple regression analysis was performed to predict correlations with the variables for all Aboriginal respondents. The variables that were entered into the multiple regression analysis were "number of drinks per day on days when had a drink" as the dependent variable and the following variables were candidates as the independent variables: on the first step, the aggregate variable "social support" was entered into the model. On the second step, "contact in past year with social worker/counselor/ psychologist" was entered into the model. On the third and subsequent steps, the following variables were entered into the analysis in consecutive steps: 3) "diagnosed health problems"; 4) "community problem: suicide"; 5) "community problem: sexual abuse"; 6) "self-rated health status"; and 7) "usage of Aboriginal language as primary language in household."

The stepwise regression showed that the following variables were significant predictors variables for "number of drinks per day or the days when had a drink": "aggregate social support," "contact in past year with social worker/counselor /psychologist," "aggregate diagnosed health problems," "self-rated health status," and "use Aboriginal language in household" (R^2 =.035 for Step 5, ** $p < .01$). As shown in Table 48, the R^2 for Step is as follows: R^2 = .014 for Step 1: R^2 = .018 for Step 2: R^2 = .021 for Step 3: R^2 = .023 for Step 4: R^2 = .035 for Step 5, $p < .01$, as seen in Table 56.

Table 48

Stepwise Regression for Inuit, Métis, and North American Indian with Alcohol Use

Variables removed		Variables in the model	*R*	R^2	Adjusted R^2
	1	Aggregate social support	.119	.014	.014
	2	Aggregate social support	.135	.018	.018
		Contact past year SW/CR/psychologist			
	3	Aggregate social support	.145	.021	.020
		Contact past year SW/CR/psychologist			
		Aggregate diagnosed health problems			
	4	Aggregate social support	.150	.023	.021
		Contact past year SW/CR/psychologist			
		Aggregate diagnosed health problems			
		Self-rated health status			
	5	Aggregate social support	.188	.035	.034
		Contact past year SW/CR/psychologist			
		Aggregate diagnosed health problems			
		Self-rated health status			
		Use Ab. language in household			

The results of the final model indicate that respondents who have low social support, frequent contact with a social worker/counselor/psychologist, have been diagnosed with a health problem, poorly rate their health status, and do not use Aboriginal language in the household, were more likely to drink more drinks per day. Tables 49 and 50 provide the ANOVA summary and coefficients.

3.11 Summary of the results for both Métis and Inuit respondents

The results of the correlations between health determinants and depressive symptoms provided many significant results, although some could not be interpreted because the correlations accounted for less than 1 % of the variance. Many of the results were similar for both Métis and Inuit respondents, although the strength of the significance varied slightly for some variables.

There was a significant relationship between income level and depressive symptoms, however only the correlation between "income source: social assistance" and depressive symptoms for Inuit respondents was large enough to be interpreted. There was a significant relationship between education and depressive symptoms however the correlations for both the Métis and Inuit respondents were too small to be interpreted. There was a significant relationship between employment and depressive symptoms: the correlations between "prevents working: health problems" and "prevents working: retired" and depressive symptoms were most significant for both Métis and Inuit respondents.

There was a significant relationship between physical/social environment and depressive symptoms: the most significant correlation was between "aggregate

Table 49

ANOVA for Inuit, Métis, and North American Indian with Alcohol Use

	Sum of Squares	df	Mean Square	F	Sig.
Regression	1181.341	5	236.268	19.060	.000
Residual	33305.613	2598	12.396		
Total	33386.954	2603			

Table 50

Model 6 *Coefficients for Inuit, Métis, and North American Indian with Alcohol Use*

	Unstandardized Coefficients		Standardized Coefficients		
	B	Std. Error	β	*t*	Sig.
(Constant)	18.534	3.300		5.617	.000
Aggregate social support	.396	.084	.094**	4.734	.000
Contact past year SW/CR/psych	-.706	.184	-.076**	-3.842	.000
Aggregate diagnosed health problems	.539	.183	.064**	2.953	.003
Self-rated health status	.131	.070	.041	1.880	.060
Use Ab language in household	-.289	.049	-.115**	-5.887	.000

* $p < .05$

community Aboriginal problem items" and depressive symptoms, with a larger significance for the results of the Métis compared with the Inuit respondents. For the Inuit respondents who answered the items in the Inuit supplement survey, there was also a significant relationship between "community satisfaction items," "how safe feel when home alone in the evening," "satisfaction with personal safety from crime," "past 5 years considered moving out of community," and depressive symptoms. There was a significant relationship between "personal health practices," "coping skills," and depressive symptoms, however only the correlations between "type of smoker" and depressive symptoms for the Métis respondents was large enough to be interpreted.

There was a significant relationship between social support networks and depressive symptoms for both Métis and Inuit respondents: the most significant correlation was between "aggregate social support" items and depressive symptoms. For the Inuit respondents who answered the items in the Inuit supplement survey, there was also a significant relationship between "strength of family ties" and depressive symptoms. The correlations for both the Inuit respondents who answered other questions from the Inuit supplement survey that were significantly correlated with depressive symptoms were too small to be interpreted.

There was a significant relationship between health services and depressive symptoms. The correlation between "aggregate contact with health professionals" and depressive symptoms was significant for the Métis respondents, but the significance for the Inuit respondents was too small to be interpreted. For the Métis respondents who answered the items in the Métis supplement survey, there was also a significant

relationship between "needed health care, but did not get it," "how often prescribed drugs in the past year," and "lacked money for prescribed drugs" and depressive symptoms.

There was a significant relationship between culture and depressive symptoms, however only the correlations between "ability to understand primary Aboriginal language," "ability to speak primary Aboriginal language," "usage of primary Aboriginal language in household," and "usage of primary Aboriginal language in other places" and depressive symptoms for the Métis respondents was large enough to be interpreted. None of the correlations for the Inuit respondents were large enough to be interpreted. There was a significant correlation between gender and depressive symptoms however the correlations for both the Métis and Inuit respondents were too small to be interpreted.

3.12 Summary of the regression analyses for Métis, Inuit, and North American Indian respondents

For the stepwise regression analyses of depressive symptoms, the predictor variables differed when comparing the results of the Métis and Inuit respondents. For the Métis respondents, "aggregate contact with health professional," "needed health care but did not get it," "usage of primary Aboriginal language in household," and "type of smoker" were significant predictor variables for depressive symptoms. For the Inuit respondents, "aggregate social support," "community satisfaction," "feel safe at home alone in the evening," and "considered moving out of the community in the past 5 years" were significant predictor variables for depressive symptoms.

For the stepwise regression analyses for anxiety symptoms for the Inuit respondents, the significant predictor variables for anxiety symptoms were "aggregate

social support," "community satisfaction," "feel safe at home alone in the evening," and "considered moving out of the community in the past 5 years." For the Inuit respondents, the predictor variables that were significant for anxiety symptoms were also significant for depressive symptoms in the stepwise regression analyses.

A stepwise multiple regression analysis was performed to predict correlations with the variables for all Aboriginal respondents (i.e., Métis, Inuit, and North American Indian). For the stepwise regression analyses of the number of drinks per day on the days when had a drink as the dependent variable, the significant predictor variables were as follows: "aggregate social support," "contact in past year with social worker/counsellor/psychologist," "aggregate diagnosed health problems," "self-rated health status," and "use of Aboriginal language in household."

4. DISCUSSION

4.1 Summary of the Research Objectives and Purpose

This dissertation is an exploratory study of the relationship between determinants of health and depressive symptoms as well as anxiety symptoms (for the Inuit) that may affect Aboriginal health. The research was conducted from the population health approach to understand how determinants of health are related to depressive symptoms among Métis and Inuit respondents and to anxiety symptoms for the Inuit of the Aboriginal Peoples' Survey (2001). This study also included an exploration of how the determinants of health are related to alcohol use for Métis, Inuit, and North American Indian respondents of the 2001Aboriginal Peoples Survey.

4.2 Findings From the Exploratory Study

In review of the results, there were a number of significant findings in terms of the relationship between determinants of health and depressive symptoms. There were also consistencies in correlations in comparison of the Métis and Inuit responses. Table 51 provides a summary of the significant findings of the correlations between health determinants and depressive symptoms of the Métis and Inuit respondents. The findings for each health determinant will be discussed and will include the comparisons of the Métis and Inuit groups of survey respondents. Refer to page 147 for a list of the highlights of the key findings of the study.

Table 51

Summary of Significant Findings for Inuit and Métis Respondents

Variables in the model		*Métis %* *Variance*	*Inuit %* *Variance*
1	Income		
	Social Assistance as source of income	1.2%	1.69%
2	Education		
	Highest level of schooling	<1%	
	Graduated from high school		<1%
3	Employment		
	Health problems prevent from working	3.42%	1.76%
	Retired prevents from working	2.25%	3.06%
4	Physical/social environment		
	Community Aboriginal problem	3.6%	1.35%
	Inuit survey:		
	Community satisfaction		2.16%
	How safe feel when walking alone in evening		2.07%
	Satisfied with personal safety from crime		1.87%
	Past 5 years considered move out of community		1.46%
5	Personal Health Practices		
	Frequency smoke cigarettes at present	1.23%	<1%
	Type of smoker	1.39%	<1%

Table 51

Summary of Significant Findings for Inuit and Métis Respondents (con't)

Variables in the model	*Métis % Variance*	*Inuit % Variance*
6 Social Support		
Availability of social support	1.6%	6.76%
Inuit supplement survey: Strength of ties with family in other household		4.20%
7 Health Services		
Contact with health professionals	2.5%	<1%
Métis supplement survey:		
Needed health care, but did not get care	3.28%	
How often prescribed drugs in past year	2.46%	
Lacked money for prescribed drugs	2.62%	
8 Culture		<1%
Métis supplement survey:		
Able to understand primary Ab. language	1.14%	
Use primary Ab. language at home	1.8%	
Able to speak Ab. language	1.56%	
Use primary Ab. language other places	1.32%	
9 Gender	<1%	<1%

Highlights of the Key Findings of the Study

- The correlation between Social Support and depressive symptoms for Inuit respondents was the most significant finding in the study.
- The correlations between Education and depressive symptoms and Gender and depressive symptoms for Métis and Inuit respondents and were not significant enough to be interpreted.
- For Métis respondents, those who were able to speak, use, or understand their Aboriginal language were less likely to have depressive symptoms.
- Métis and Inuit Respondents who had contact in the past year with a social worker/counsellor/psychologist were more likely to be depressed. The results may indicate that respondents access mental health services when needed.
- The correlations between Culture and depressive symptoms for Inuit respondents was not significant enough to be interpreted.
- One surprising finding was that Métis respondents who smoke daily were more likely to have depressive symptoms.
- Inuit respondents who have low social support, weak ties with family in the community, and who do not feel safe when home a lone in the evening were more likely to be anxious.
- For all respondents (Inuit, Métis , North American Indian), alcohol use increased with low social support, frequent contact with a social/worker/counsellor/psychologist, have been diagnosed with a health problem, poorly rate their health status, and do not use Aboriginal language at home.

4.2.1 Income and depression

Consistent with the hypothesis that income is negatively correlated with depressive symptoms, respondents who reported lower income also reported having depressive symptoms. Specifically, both Métis and Inuit respondents who reported being on social assistance reported higher rates of depressive symptoms. This finding provides new evidence similar to Wu et. al's (2003) findings of higher rates of depression for people related to socioeconomic differentials. The current findings support Smylie's (2001) assertion that social conditions such as social assistance have an adverse impact on the health status of individuals. While the direction of the relationship between social assistance and depressive symptoms is not known, the current study demonstrates that social assistance is a social condition that is related to depressed mood for Aboriginal people. Poverty affects the individual's ability to purchase nutritious food, fill prescriptions, travel to medical appointments, and afford adequate housing (Smylie, 2001).

Although the reporting of economic income, household income, and family income accounted for less than 1 % of the variance, the significance is important to note because of the large number of respondents (the correlation was slightly stronger among the Inuit respondents). Research has shown that people with lower socioeconomic status (SES) are more likely to develop a depressive illness and that their depression is more severe than that of people higher on the SES scale. The results of a recent meta analysis demonstrate that low SES is related to slight increases in the risk of a depressive episode and moderate increase in the risk for persistence of depression (Lorant, Deliege, Eaton,

Robers, Philippot, & Ansseau, 2003). The authors further noted that the association persists throughout the entire social stratum and is not limited to the lowest of the low SES group, which may account for the low correlation. The authors also suggest that the direction of the relationship between depression and SES is more consistently supported as a direction of causation (i.e., low SES increases the risk of depression) than a direction of selection (i.e., depression hinders social mobility), although both processes contribute to the phenomenon.

Researchers have also demonstrated that poverty is an important contributor to emotional ill health among ethnic minorities. The prevalence of depression was three times higher in low income respondents (19.3%) compared to the higher income group (5.9%, $p<0.001$) in a large urban South Indian population (Poongothai, Pradeepa, Ganesan, & Mohan, 2009). Similar results were found with Indigenous Australians as poverty and income quality were important contributors to and manifestations of emotional ill health (Maudsley, 2005).

Researchers asserted that low-income ethnic minority primary care patients have relatively high rates of depression, but are less likely to receive care for depression or be prescribed antidepressants (Kessler, Berglund, Demler, Jin, Koretz, Merikangas, Rush, Walters, & Wang, 2003). Although the researchers noted that one issue was that patients were living in the United States and were underinsured, in Canada, patients frequently require medication, but cannot afford to purchase prescription medication that is not covered under public health.

4.2.2 Education and depression

The hypothesis regarding education and reporting of depressive symptoms was not sufficiently supported in the current findings. The correlation between lower education and depressive symptoms was not significant among the Métis respondents. The negative correlation between graduate from high school (not equivalence/GED) and depressive symptoms for Inuit respondents accounted for less than 1 % of the variance. Recent literature demonstrates that the Inuit are the most disadvantaged within the Aboriginal population in terms of achieved level of education (Reading & Wien, 2009).

However, cultural differences may influence the relationship between education and depression for the Inuit population. Guillou and Rasmussen (2007) noted that Inuit culture differs from First Nations in language, history, geography, politics, social relations, values, and beliefs. The authors indicated two important factors that may influence the unique relationship between education and depressive symptoms for Inuit people: first, consulting Elders for their wisdom is much less common in southern Canada; second, educational attainment is measured and valued according to completed degrees in southern Canada, which is very different from the Inuit population. For the Inuit, educational attainment is based upon language and traditional knowledge rather than completing university degrees, extending beyond schools where the methods of teaching and testing knowledge are limited. The authors assert that non-formal education and the frequency and quality of interactions with Elders should be included as an indicator of Inuit women's health. The findings may indicate that Inuit who achieve

formal education may have acquired less education that is culturally based (and may be a resource or buffer against depression) and be more likely to have depressive symptoms.

While the findings suggest that Métis respondents may not be more likely to have depressive symptoms if they have less education, the potential negative effect on respondents' children/youth is unknown in this study. In a recent study of youth in Saskatoon, parental education status was found to be the only socioeconomic variable associated with depressed mood in the both non-Aboriginal and Aboriginal youth (Lemstra, Neudorf, Mackenbach, D'Arcy, Scott, Kershaw, & Nannapaneni, 2008). Although Lemstra et al. indicated that the participants were Aboriginal people living off-reserve and the portion of participants and parents who were either Métis or First Nations was not interpreted. The potential significant effect on the Aboriginal population is unknown.

4.2.3 Employment and depression

The survey items that were related to employment and working conditions provided mixed results when correlations with depression were analyzed. The most significant result, which was one of the highest correlations in the study for both the Métis and Inuit respondents, was the negative correlation between the variable "prevents working: health problems" and depression. The findings are not surprising, given the prevalence of health problems for Aboriginal people. The APS 2001 survey results indicated that the most prevalent chronic conditions for North American Indian, Métis, and Inuit populations were: arthritis or rheumatism, high blood pressure, asthma, stomach problems or intestinal ulcers, diabetes, and heart problems (Statistics Canada, 2003). The

Inuit reported lower rates of the aforementioned chronic conditions however the rates may be affected by factors such as less contact with health care professionals in the Canadian Arctic, resulting in many undiagnosed chronic conditions. Statistics Canada also noted that nearly half of Inuit are under the age of 20 and may be less likely to have chronic conditions.

Researchers also suggest that not only are unemployment and underemployment associated with poorer health, but are also associated with stressful work (Health Council of Canada, 2005). The Council asserts that those who have more control over their work circumstances and less job-related stress than those who have more stressful work are healthier and often live longer. Aboriginals tend to have lower education and as a result tend to be employed in menial or clerical/support/labour positions with little control over their work conditions (Health Council of Canada, 2005).

The relationship between poor work conditions and health is not a new finding. Syme (1988) investigated the prevalence of hypertension in African Americans in the United States and found that hypertension was associated with occupational stress and high work demands over which workers have little latitude. Unfortunately, the APS 2001 survey does not inquire about the types of employment, only the number of jobs. Analyses of the relationship between types of employment and depressive symptoms may have revealed similarly intriguing findings.

4.2.4 Physical environment and depression

Analysis of the relationship between the physical environment and depression revealed mixed results. Variables related to housing and water issues were significant, but

not enough to be interpreted. Unfortunately, there were only four items in the survey related to physical conditions. The negative correlation between "considers water in home safe to drink" and depressive symptoms accounts for less than 1 % of the variance. However, given the population sample (2737 respondents), consideration of the correlation between "not having safe drinking water" and housing and higher reporting of depressive symptoms may be warranted as potential health determinants to be further explored.

The Senate Committee on Social Affairs, Science, and Technology (2009) noted that housing problems (i.e., inadequate housing, such as overcrowding, homes requiring significant repairs, substandard dwellings) contributes to increased stress and physical and mental illness. The committee asserted that 10% of health outcomes are attributable to the physical environment. Further investigation of the impact of inadequate housing on depressed mood may be valuable for developing policies, for example for rental housing in establishing standards in repair and maintenance of rental properties.

Housing, indoor air quality and the design of communities can significantly influence psychological well-being (Public Health Agency of Canada, 2003). In a recent study of depression in youth living in Saskatoon, moderate or severe depressed mood was found to be most common in youth whose parents did not have a professional occupation, lived in one of six contigious low-income neighbourhoods, or were Aboriginal (Lemstra et al., 2008). Analyses of variables related to respondents' perceptions of problems in their neighbourhood yielded interesting results and accounted for more variance than most of the variables that were explored in the current study. The problems for

Aboriginals in the community that were most significantly related to depression were: suicide, family violence, sexual abuse, drug abuse, and other problems. Although the areas in which the respondents live are unknown, other recent research has also found that people who live in low-income areas are twice as likely as people in middle-income areas and two and a half times as likely as people in high-income areas to be suicidal (Cohen, Houck, Szanto, Dew, Gilman, & Reynolds, 2006). If people are living in certain neighbourhoods where they perceive there to be more problems in their community, the current findings provide valuable insight into factors of living in certain communities that potentially negatively affect mood. The current findings suggest that the social aspects of the environment are more important than the physical aspects of the environment.

4.2.5 Personal health practices, coping skills, and depression

Analysis of the relationship between personal health practices, coping skills, and depression revealed mixed results. Significant correlations were found between smoking and depressive symptoms, but not between drinking or gambling and depressive symptoms. The correlations were more significant for the Métis than the Inuit respondents.

The significant finding of the relationship between smoking and depression is interesting, particularly as smoking was also included in the stepwise multiple regression as a predictor of depressive symptoms. In a recent study of smoking and depression among Aboriginal youth in British Columbia, smoking increased as depression scores increased and as life satisfaction decreased (Hutchinson, Richardson, & Buttorff, 2008). The researchers noted that the youth were motivated to quit smoking and that initiatives

for smoking cessation may be more successful if culturally appropriate strategies to promote mental health are included.

The findings related to exercise and depressive symptoms for the Métis respondents were not sufficiently significant to be interpreted. The findings are not as consistent with the hypothesis as other research with Aboriginal people. The results of a recent study conducted with antenatal non-Aboriginal and Aboriginal women in Saskatchewan found that exercise was a significant mediator for depression (Bowen, Stewart, Baetz, & Muhajarine, 2009). Analysis of all Aborignal groups in this study may have generated results similar to the recent study, but unfortunately only the Métis were asked about exercise.

4.2.6 Social support networks and depression

Analysis of the relationship between social support and depression revealed that both the Métis and Inuit respondents who have low social support are more likely to have depressive symptoms. The correlation was stronger for Inuit respondents. Social support, for the Inuit respondents, was the most significant variable related to depressive symptoms among all of the variables explored in the current study. Inuit respondents who have weaker ties with family in the community and were less involved in their community were also more likely to have depressive symptoms (although the correlation with community involvement accounted for less than 1% of the variance).

The relationship between social support and depression has been one of the most widely studied psychosocial factors (Southwick, Vythilingam, & Charney). While social support has been established as a predictor of better depression outcomes (e.g., Nasser &

Overholser, 2005), perceived adequacy of social support has also been demonstrated to reduce depressive symptoms (Cappeliez, Robitaille, McCusker, Cole, Yaffe, Sewitch, Cepoiu, Ciampi, Dawes, & Latimer, 2007). What is important to the individual is not the number of friends and relatives, but rather the perceived quality of the relationships and recognizing that help is available (Bosworth, Hays, George, & Steffens, 2002). Researchers have established that social support (emotional and instrumental) from family and friends was predictive of depression outcome for individuals from age 25 to 55 years (Nasser & Overholser, 2005) and recently for older adults (Cappeliez et al., 2007).

4.2.6.1 Frequency of social support

While previous studies have not found a relationship between the frequency of visits with friends and relatives and depression outcome (Cappeliez et al., 2007), the current findings demonstrate that frequency of social support is negatively correlated with depressive symptoms (i.e., someone to listen to you, someone to count on when you need advice, have someone to take you to the doctor, have someone who shows you love and affection, have someone to have a good time with, have someone to get together with to relax, have someone to do something enjoyable with). Furthermore, the correlation between frequency of social support and depressive symptoms was the strongest correlation for the Inuit population that was found among all of the analyses of the study. Also of importance to note is that frequency of social support that is provided to meet needs, such as having someone to take the respondent to the doctor, was significantly correlated with depressive symptoms. One of the previous studies did not investigate the

severity of depression, which has been noted as an important factor in the outcome of depression and may have affected their results (Fran, Rucci, Katon, Barrett, Williams, & Oxman, 2002).

4.2.6.2 Source of support

The Inuit survey included items regarding to whom the individual turns for support that were combined into an aggregate of the variables. The results were not interpreted because the individual items did not account for more than 1% of the variance with the exception of turning to a spouse/common-law partner for support. Another item in the survey related to "strength of ties with family in another household" was also significant and was negatively associated with depressive symptoms. The variable was one of the most significant variables found in the current study. The significant inverse correlation between "having a supportive spouse or relative" and depression is consistent with other research that demonstrated an inverse correlation between having a supportive spouse or relative and risk for major depression (Wade & Kendler, 2000). However, the interaction between age and gender in the current study are unknown. An interaction between age and gender was found in Schwarzer and Gutierrez-Dona's (2005) study of Costa Ricans in which spousal support and depression were only significantly correlated for men and the older women were, the less support they reported receiving from their spouses.

4.2.6.3 Religion and spirituality

The Métis supplement survey included an item regarding the respondents' perception of how spiritual they considered themselves. The results were not interpreted

because the individual items did not account for more than 1% of the variance. However, because the variance accounted for in the results was close to one per cent, the potential importance of religion and spirituality in the Aboriginal population ought to be acknowledged and further explored. Religion and spirituality are complex variables and involve cognitive, emotional, behavioural, interpersonal, and physiological dimensions (Hill & Pargament, 2003). Religion provides social and emotional support, motivation, and promotes healthy lifestyles (Lee & Newberg, 2005). Religion also protects against depression for individuals who experience uncontrollable stressors such as physical illness (Wink et al., 2005). Religion/spirituality has been found to be linked to physical and mental health and psychologists are beginning to learn why links exist (Hill & Pargament, 2003).

Keeping in mind the limited sample of respondents who answered the questions about depressive symptoms in the Métis supplement, an exploratory analysis of the correlation between religion/spirituality and physical illness was performed. Tables D1 and D2 in Appendix D demonstrate the relationship between being diagnosed with a health problem and depressive symptoms. An aggregate variable was created from items related to being told that the respondent has a physical illness (e.g., hepatitis, kidney disease, stomach problems) (Cronbach's $\alpha = .574$). The results showed a significant negative correlation between being diagnosed with a health problem and reporting that they are very religious/spiritual, accounting for approximately 2.13% of the variance (see Table D3 in Appendix D).

Earlier in the discussion, it was noted that there is a significant positive correlation between respondents being diagnosed with a health problem and reporting that they have depressive symptoms. The exploratory analyses indicated that Métis respondents who were diagnosed with health problems were more likely to report being religious/spiritual and as having depressive symptoms. Recent research that investigates the relationship between social support and coping indicates that social support is also positively associated with proactive coping with chronic health conditions and negatively with depression (Greenglass et al., 2006).

Spirituality/religion as means of social connectedness and the effects on areas such as health, successful aging, and well-being (Cacioppo et al, 2005; Miller & Thorensen, 2003) may be valuable indicators of clinically significant distress as well as resources that may be overlooked. While the current results were not sufficiently significant to demonstrate that spirituality or religion as forms of social support are related to depressive symptoms among the Métis and Inuit populations, other research provides evidence of religion as providing social support. Integrating religion/spirituality with health care services may be an important component in coping with medical illness, depression, and other problems. Traditional spiritual practices were historically an important means of support for Aboriginal people, but were forbidden by the government. Thus, the potential significance of spirituality/religion as social support is unknown. Ensuring that spiritual/religious practices are more accessible may restore an important means of coping with life challenges.

4.2.7 Health services and depression

Analysis of the relationship between health services and depression revealed that Métis and Inuit who reported having contact with a health professional were more likely to have depressive symptoms. The results also revealed that Métis respondents who reported requiring health care, but not receiving care, or higher frequency of being prescribed drugs, or lacking money for prescribed drugs, were more likely to have depressive symptoms. The correlations provide some insight into the availability of health services.

The correlation between "contact with social worker/counsellor/psychologist" and depression was most prevalent, with the next highest significance demonstrated for "contact with medical doctors." Although the aggregate variable for "contact with health professionals" accounted for less than 1% of the variance for Inuit respondents, "contact with a social worker, counsellor, or psychologist" was significant for both the Inuit and Métis. Contact with medical doctors was close to 1% of the variance for the Métis and is worth discussion. The correlation may be explained by the lack of insight of patients regarding depressive symptoms leading to contact with a physician and reporting somatic symptoms. Adults who are depressed, particularly older adults (Vannoy, Powers, & Unutzer, 2006) and patients in non-Western countries (Simon, VonKorff, Piccinelli, Fullerton, & Ormel, 1999) do not realize that they are depressed and report somatic symptoms to their physician or other health care provider. Patients may have limited knowledge about depression or do not disclose depressed mood in an effort to avoid

being labeled as "mentally ill" (Vannoy, Powers, & Unutzer, 2006). Patients may contact a physician, but not contact a mental health professional.

The results of this study do not indicate the reasons for respondents to have contact with a health professional (e.g., addictions), nor do the results indicate to what extent Aboriginal people are experiencing depressive symptoms, but not having contact with a health professional for their depressive symptoms. The results provide minimal information about the relationship between contact with health or mental health professionals and depressive symptoms, so one can only speculate. It is unknown if respondents are receiving adequate treatment as it is evident in the literature that inadequate treatment for depression is a serious concern (Kessler, Berglund, Demler, Jin, Koretz, Merikangas, Rush, Walters, & Wang, 2003). In their recent study, 51.6 % of cases diagnosed with Major Depressive Disorder (MDD) received health care treatment for 12 months, but treatment was found to be adequate for only 41.9% of the patients, indicating that 21.7% of the 12-month MDD cases were being adequately treated. The authors assert that although the availability of treatment is increasing, it is still inadequate.

The findings from the current study also provide some insight into barriers to accessing health care. Barriers that contribute to disparities in health care for Aboriginal people include rural location, isolation, poverty, and communication barriers (Marrone, 2007). The current findings indicate that respondents who did not receive care when needed or did not have money to fill prescriptions were more likely to have depressive symptoms.

Studies have shown that although Canada has a public health care system, Aboriginal people with lower incomes have lower rates of access to health care and utilization (Marrone, 2007). For example, a study comparing Aboriginal and non-Aboriginal women in Manitoba who were receiving prenatal care found that predictors for Aboriginal women receiving inadequate care included low income, low self-esteem, high levels of perceived stress, and Aboriginal background (Heaman, Gupton, & Moffatt, 2005).

However, the disparities appear not to be limited to socioeconomic status. Other studies reveal that when socioeconomic status is taken into account, Indigenous people with a publicly funded health care system have less access to the system and health care services that are less adequate and of less quality compared with the majority population. A study of rural residents of northern Ontario indicated that factors beyond socioeconomic status and geographic conditions affect primary care access in Aboriginal communities (Baiju, Shah, Gunraj, & Hux, 2003). The authors asserted that systemic barriers such as availability of primary care physicians and high rates of physician turnover affect access to care for Aboriginal communities.

Although Aboriginal people have higher prevalence of diabetes, hypertension, cigarette smoking and coronary artery disease compared with the general population, they do not demonstrate higher utilization of many procedures that rely on referrals to specialized care (Baiju et al, 2003). The authors asserted that higher income is correlated with increased frequency of specialist visits, renal transplant, coronary artery bypass surgery, and other procedures. When reviewing the reasons why Métis respondents did

not get health care when needed, not getting around to seeking care and having too long of a wait time were the most prevalent reasons and not having the appropriate care in the area accounted for only ten percent of the responses (see Table D4 in Appendix D). The current results suggest that the wait may be too long for Métis respondents and they are becoming depressed. There may be a similar problem with referrals to psychiatrists or psychologists in the public health care system for mental health services for depressive symptoms. It is unknown to what extent depressive symptoms prevent patients from accessing care. Research results have revealed an increase in prevalence of depression in patients with medical illness such as diabetes, heart disease, and multiple sclerosis (Katon & Ciechanowski, 2002; Dalton and Heinrichs. 2005). Prevalence of depression has been found to increase from 10 to 30 per cent in patients with chronic illness (Glasser, 2000).

There are of course, many other barriers to accessing health care that are beyond the scope of this study. For example, the patient's cultural values and experiences influence how they communicate their symptoms and perceptions of feedback from the practitioner about their health status (Marrone, 2007). Nonetheless, the current findings offer insight into the relationship between depressive symptoms and indicators such as contact with health care professionals that may be useful for improving services to Aboriginal patients with depression.

4.2.8 Culture and depression

The results that indicated the relationship between the respondents' or family members' attendance at residential school and depressive symptoms revealed that Aboriginal language, Aboriginal teachers, and passing on traditional cultural practices to

the next generation are significant. Cultural factors in the context of health services will also be discussed.

While the Métis reported that attendance at residential school was not a significant indicator of depression, attendance of family members was significantly correlated although the variance was less than 1 %. The results suggest that it may not be the respondents' experience of attendance at residential school that is important, but rather what has been lost as a result of family members attending residential school and cultural assimilation. Some believe that residential schools were pivotal in transforming Aboriginal societies from relatively trauma-free and functional to traumatized and dysfunctional, suffering from alcoholism, substance abuse, depression, criminal behavior, violence, or neglect of family responsibilities (Warman, 2004). Waldram asserted that the passing on of dysfunctional behavior through the generations is well-accepted, but there have been no empirical studies focused on the intergenerational trauma related to residential schools.

Cultural traditions and practices have been damaged from centuries of post-colonial contact, negatively impacting generations of Indigenous youth (Marrone, 2007). Residential school was a means of acculturation that had a significant negative impact on parenting and passing on traditional cultural practices such as language. One-third of the almost one million Aboriginal people living in Canada have been affected by residential school experiences, either directly as students or indirectly via family or community members as attendees (Standing Senate Committee, 2006). Residential school experiences have also interrupted the transmission of parenting, created a loss of

knowledge, language and tradition, devaluing of aboriginal identity, and treated Aboriginal identity as something intrinsic to the person and static (Couture, 1994; Kirmayer, Simpson, & Cargo, 2003). As a result, there has been a loss of individual and collective self-esteem as well as an individual and collective disempowerment that has reverberated throughout communities and families and has led to the destruction of some communities (Couture, 1994; Kirmayer, Simpson, & Cargo, 2003).

Denham (2008) emphasizes a need for scientific investigation of how historical trauma continues to negatively affect the health status of Indigenous populations in the United States, Canada, Australia, and New Zealand. Clinicians and researchers have documented the symptoms including higher levels of depression, withdrawal, anxiety, suicidal ideation and behavior, substance abuse, anger, violence, guilt behaviour and adopting a victim identity. Brave Heart (2003) distinguished between historical trauma and the response to historical trauma. She asserted that the literature rarely acknowledges the features related to, or the reaction to, historical trauma. Unfortunately, the data for Aboriginal respondents in the current study could not be analyzed in terms of investigating the relationship between attendance or family attendance at residential school and depressive symptoms. The results may be expected to be more significant than the results of the Métis respondents, as a significant portion of the First Nations population were mandated to attend residential school.

Experiencing historical trauma may potentially cause depression however, there are mediating factors that facilitate healing for Aboriginal people. Denham's narrative study demonstrated that historical trauma does not always result in psychiatric distress

and that an alternative perspective regarding the impact, transmission, and manifestation of historical trauma exists in some families and communities. He noted that transmission of cultural knowledge is often accomplished through traditional practices such as sweat ceremonies. The larger family focuses on survival or adopting a strengths-based perspective and acts as a protective factor, providing the individual with the skills and confidence that is central to the process of resilience (Denham, 2008). As one family stated, the strategy of the larger family encouraging family member to connect with and generate meaning from an experience "keeps their lives in balance and prevents the 'whirlwinds from wrecking the center'" (Denham, 2008, p. 410).

Compared to other variables related to culture in the current study, language was the most important variable related to the reporting of depressive symptoms. Findings such as use of primary Aboriginal language in the household, at school, and at other places, and carrying on traditional art or craftwork may be important mediating factors as culture is preserved and subsequently preventing Aboriginals from loss of identity and becoming depressed.

Although access to traditional health services were analyzed and discussed earlier in this section, culture in the context of traditional medicine also needs to be noted. Analysis of the relationship between traditional cultural practices and depression did not reveal the expected significance in terms of access to traditional medicine/healing/ wellness practices or contact with a traditional healer. Neither contact with a traditional healer nor access to traditional practices was significant for the Inuit respondents, but the

indicators were significant for the Métis respondents (although the results could not be interpreted because the variance accounted for was less than 1 %).

The significance among the remainder of the Aboriginal population is unknown and may be significant. The results of a study with urban and rural American Indians indicated that 66 % of the 100 Mi'kmaq patients in a Canadian health clinic reported having used Mi'kmaq medicine, and 92.4 % of the respondents had not discussed the use with their physician (Cook, 2005). The results are similar to American Indian respondents of a survey of which 70 % reported using traditional practices for health related reasons (i.e., smudging, traditional herbal medicines, and healing ceremonies) (Buchwald, Beals, & Manson, 2000). Cook emphasized the importance of considering the influence of traditional medical beliefs and how they may impact the utilization of health care. Based on my experience in belonging to an Aboriginal traditional spiritual society, for Aboriginal people who actively participate in traditional practices, there is common knowledge that maintaining secrecy of such practices protects the spiritual power. Researchers cannot rely on reporting of traditional practices, but must rather acknowledge its continued vitality and encourage policy makers to facilitate protection of such practices and possibly facilitate access.

4.2.9 Gender and depression

Gender was found to be related to depressive symptoms, but not sufficiently enough to report the results. At the approximate time that the Aboriginal Peoples' Survey was administered, the prevalence of depression was higher among women than in men among all age groups (Patten, 2000).

Although the significance is small, the higher prevalence for females is consistent with other research. A study that involved a chart review of 2,375 patients in a remote rural community in British Columbia in 2001 to determine the prevalence of depression and anxiety among patients revealed that the prevalence rate of depression was 6.4 % for both Aboriginal and non-Aboriginal populations and that the rates were similar for the Aboriginal and non-Aboriginal populations (Thommasen, Baggaley, Thommasen, & Zhang, 2001). The researchers found that the women's rate of depression and anxiety disorders was higher than men (10.3 % versus 4.7 %, respectively); the rate for non-Aboriginal patients was slightly higher (8.5 %) than for Aboriginal patients (6.3 %).

The results of the current study reveal interesting information about who is experiencing depressive symptoms. The results indicate that prevalence rates of depressive symptoms may be higher for Aboriginal men than expected based on prevalence among the non-Aboriginal population. The higher prevalence rate for males seems to be similar to the Aboriginals in Australia, where the rate for young males climbed dramatically (Elliot-Farrelly, 2004). The author noted that for Aboriginals, suicide was caused by eight factors: a lack of a sense of purpose in life, lack of publicly recognized role models and mentors, disintegration of the family and lack of meaningful support networks in the community, sexual assault, drug and alcohol misuse, animosity and jealousy as a part of factionalism, persistent grief because of the high number of deaths in the community, and illiteracy (and subsequent exclusion and alienation). Marrone (2007) also found that suicide rates of young adult Indigenous men was 2 to 5

times higher than the general population in Canada, United States, New Zealand, and Australia.

While the prevalence of depressive symptoms among men cannot be discounted, prevalence among women cannot be ignored either. Ignoring gender will have implications in other areas, for example, if gender is controlled for in studies, the socioeconomic inequalities in depression may increase, taking away from a focus on decreasing chronicity of depression among people in the lower socioeconomic strata (Lorant, Deliege, Eaton, Robert, Philippot, & Ansseau, 2003). The current results suggest that both male and female respondents may need to be considered in understanding the prevalence of depressive symptoms.

4.2.10 Additional exploratory analyses

Stepwise multiple regression analyses were performed to explore the relationship between the determinants of health and anxiety and alcohol use. Although the correlation between alcohol use and depression did not account for more than one per cent of the variance in the bivariate correlation analyses, the multiple regression analysis for all Aboriginal groups revealed that the following factors were significant for predicting alcohol use: social support, contact with a social/worker/counsellor/ psychologist, diagnosed health problems, self-rated health status, and use of Aboriginal language in the household. Marrone (2006) found that alcohol use, suicide, and mental health problems were "staggeringly" high among Indigenous groups in Canada, United States, Australia, and New Zealand. Higher rates of substance and alcohol abuse among Indigenous groups have been shown to be related to increased rates of suicide (Hunter & Harvey. 2002).

Treatment strategies may need to be tailored for dual diagnosis in Aboriginal people (i.e., alcohol and substance abuse and depression).

The variables that made the greatest contribution to the stepwise regression model (i.e., social support, use of Aboriginal language, and contact with a health worker), appear to be significant predictors of alcohol use, but also as potential mediators of alcohol use, while having health problems, perception of health, provide insight into the overall health or perceived health of an Aboriginal who uses alcohol. Health practitioners may be more effective in monitoring alcohol use and referring as necessary.

The multiple regression analysis of Inuit with anxiety symptoms as the dependent variable also revealed significant results similar to the analysis with depressive symptoms. The results indicate that anxiety is similarly related to the determinants of population health. The results are consistent with recent research that found that higher scores of suicidal ideation were associated with higher anxiety and alcohol abuse, but were not associated with gender or higher depression (Haggarty, Cernovsky, Bedard, & Merskey, 2008). Aboriginals tend not to be studied in terms of anxiety symptoms, similar to Australia, where youth of the general population have been studied, but Indigenous youth have not been studied (Adermann & Campbell, 2007). The results of this study demonstrate further need for research of anxiety symptoms in Aboriginal people.

5. CONCLUSIONS, IMPLICATIONS, AND FUTURE RESEARCH

5.1 Summary of the Research

Exploring the needs of Aboriginal people from a population health perspective with an understanding of how the determinants of health are related to depression is important in understanding the unique needs of Aboriginal people and in developing intervention strategies. This research will contribute to the presently limited literature that explores the determinants of health that Aboriginal people experience. As the needs of Aboriginal people become more understood, better implementation of services to Aboriginal people may improve lifestyles and living conditions of Aboriginal people. The proposed research will further our knowledge of the relationship between depression and determinants of health for Aboriginal people in Canada with the hope that results may be utilized to develop policy and interventions that accommodate the needs and concerns of Aboriginal people.

This study was conducted from a population health approach to understand the relationship between determinants of health and depressive symptoms. Analyses of the data were retrieved from the 2001 Aboriginal Peoples Survey of Métis and Inuit respondents who completed the survey. The results confirmed that Inuit and Métis respondents experience significant symptoms of depression that seem to be related to determinants of health. While the correlations found in this study are small, the sample of the population was fairly large for both the Inuit and Métis and the results of the study provided a number of important insights for understanding Aboriginal people. In this

chapter, implications of the results will be discussed, including possibilities for the development and implementation of prevention and intervention initiatives.

5.2 Implications

The results of this study provide insight into health determinants that are related to depressive symptoms for Aboriginal people. The results also provide support for offering culturally appropriate services. The findings from this study will hopefully be helpful in improving existing services and creating new services that Aboriginal people may access when they are depressed.

Time and resources of primary care are limited (Cappeliez et al., 2007). Depression is often missed when physicians examine patients because of busy schedules and having to priorize patient concerns as well as the lack of training to differentiate depressive symptoms from physical symptoms (Vannoy, Powers, & Unutzer, 2006). The results of a recent study with depressed older adults of ethnic minority groups seen in primary care indicated that, for patients with low adequacy of social support, the issues that may be targeted in psychological interventions include "demanding and receiving help" and "social integration," which may entail offering services such as problem-solving therapy or cognitive therapy (Arean, Avalon, Hunkeler, Lin, Tang, Harpole, Hendrie, Williams, Unutzer, & IMPACT Investigators, 2005). The authors suggest that a collaborative system of care that involves integrating mental health providers into primary care may be an effective and efficient way to provide care for patients with depression. One way to overcome barriers is to integrate mental health providers into primary care to support and augment primary care practitioners who are limited to

prescribing medication for treatment of depression. The authors assert that collaborative care can become an effective, efficient way to provide high-quality depression care to patients who might otherwise go untreated.

In order to implement services in settings such as primary care centres or community centres, operational and financing issues must be addressed (Vannoy, Powers, & Unutzer, 2006). In the United States, the IMPACT project ((Improving Mood: Promoting Access to Collaborative Treatment for Late-life Depression) was developed and potential funding sources for primary care-based management are available to hire a depression care manager or depression clinical specialist (i.e., nurse, social worker, or psychologist) to work in a primary care practice collaboratively with the physician and consulting psychiatrist. Integrating mental health providers to educate, coach, and support patients and provide counseling as needed, including relapse prevention, would likely result in significant savings of usage of primary care. As part of the program, the depression care manager measures patients' depressive symptoms at onset of treatment and at regular intervals using instruments such as the 9-item depression scale of the Patient Health Questionnaire (PHQ-9). The PHQ-9 is a reliable and valid measure of depression severity (Kroenke, Spitzer, & Williams, 2001).

Encouraging physicians to ask two or three questions to screen for depressive symptoms may also be an effective strategy to identify depression and arrange intervention as necessary, which may mediate the severity of depression and improve outcomes. Given the shortage of psychiatrists and the physicians' expanding patient lists, establishing collaborative care such as the IMPACT project may be a cost-effective

solution for the Canadian health care system. Based on the results of the current study, a brief inventory could be developed to assess comorbidity and risk factors (i.e. determinants of health) that the physician could ask of patients who may seem depressed. The patient's responses may provide valuable information for referrals and perhaps for service providers to establish treatment groups or develop community services.

The disparities in health for Aboriginal people continue to increase, suggesting that the current level of societal intervention has not been effective in improving health status (Marrone, 2007). The author underscored the importance of understanding the unique influences that underlie health disparities. The findings from the current study would be important as the results facilitate understanding of the unique influences that are important in order to develop unique strategies to more effectively meet the needs of Aboriginal people.

For example, if social support is not available for some people who become depressed and possibly suicidal, we need to find novel ways to provide means of support. The results of the current study indicate that frequency of social support is negatively correlated with depression, which provides important insight for prevention and intervention with depression. If the frequency of having someone to take the respondent to the doctor is related to lower reporting of depressive symptoms, then having support available in a community may be valuable if an individual does not have access to a friend or family member who is able to fulfill the need. In terms of health services, hiring a paraprofessional to accompany someone may reduce depressive symptoms as well as offset costs and inconveniences of the health care system if someone postpones or does

not show for necessary appointments, potentially complicating an individual's medical or mental illness.

Religion/spirituality, community connections through language and culture, and other aspects may be important components in prevention and intervention. Researchers recommend that a spiritual history (Rippentrop, 2005) and enquiry about spiritual beliefs (Crossley & Salter, 2005) be included as a component of the initial patient interview. Trice and Bjorck recommend that therapists inquire specifically about the spiritual values and beliefs of the client as routinely as therapists inquire about the client's physical health. Integration and awareness of religious/spiritual factors can promote communication that is clearer, improve rapport, and provide a more thorough conceptualization of patients that leads to more effective treatment (Rippentrop, 2005). If spirituality/religion may not be significant for an Aboriginal patient, the process of asking about spirituality/religion may demonstrate empathy and understanding and enable patients to report psychological problems.

Both treatment programs and health care providers should become aware of how involvement in religion can affect symptoms, quality of life, and willingness to receive treatment (Newberg & Lee, 2005). An assessment of religious/spiritual beliefs provides a means of gathering information on an individual's support system and belonging to a spiritual/religious community and connection with a support may be encouraged or referral to a chaplain or clergy member may be warranted (Trice & Bjorck, 2006). For Aboriginal people, primary health care workers who have a resource list for Elders and Aboriginal agencies in the community may be a valuable resource for patients.

The current research results will also be valuable in developing culturally appropriate support services for Aboriginal people. Rather than focus on literature that is related to dysfunction of Aboriginal people (e. g., alcohol use and suicide) as Waldram (2004) cautioned, it is important to identify the potential predictors that have been revealed to develop ways to mediate depressive symptoms. The understanding of public health issues such as alcohol use and suicide in the context of the effect of historical trauma upon generations of Indigenous communities who have been exposed to significant trauma related to colonial contact is beginning to emerge as a new area of research (Marrone, 2007). Understanding the long-term consequences of historical trauma in terms of the impact of colonization on mental and physical health and developing interventions may effectively begin to address the effects of historical trauma. In terms of culture and healing from historical trauma, Denham emphasizes the need for interventions for Indigenous communities to address the consequences of historical trauma by helping individuals and communities negotiate and establish the meaning of contemporary or historical experiences. He also suggested that a focus on survival or adopting a strengths-based perspective, even if younger generations seem unwilling, because it is important as a practical effort in responding to historical trauma.

The current findings related to culture provide empirical evidence for and underscore the importance of the role of culture in mental health. Addressing respondents' concerns in the community, such as suicide and sexual abuse, with culturally appropriate initiatives may shift Aboriginal peoples' perceptions and concerns about their community. Programs that address family generational needs may be

important for improving depressive symptoms and perceptions of community problems. For example, community-based strategies to alleviate sexual abuse may have an impact on obesity, physical health, and subsequent public health care costs. For example, an organization called Pasco Kids First in Florida provides education, prevention, assessment, and intervention services using the most effective and research-supported treatment methods (http://www.pascokidsfirst.org/SATP.html). The program includes community education and prevention funding, and consultation and coordination with community resources. The interesting aspect of the program is that is also includes treatment for children and parents of children who have been sexually abused to help parents cope with their own feelings.

More recently, suicide rates are decreasing for the Inuit in places in the Arctic, such as in Greenland and urban Alaska; however, in other areas, suicides continue to be a concern (Hicks, 2007). Suicide and self-injury are the leading causes of death in Aboriginal youth (Kafele, 2004). Kafele noted that in 2000, 22 percent of all deaths among Aboriginal youth in Canada were from suicide and 16 percent among Aboriginals aged 20 to 44 years. Leineweber examined reports for deaths between 1993 and 1995 and found that common factors in suicidal cases were frequent conflict with family and friends, a recent life-threatening experience, expressing suicidal intentions and acute alcohol abuse.

Hicks noted that Inuit take their lives for the same reasons that other people commit suicide in addition to other reasons that are specific to Inuit societies in their current existence. He described the Arctic as a rough place to be a child over the past 50

years. While some families had the coping skills and resiliency to protect their children, many are passing their historical trauma onto the next generations. He recommended that a coherent strategy be developed and communities be provided with the resources and support required to try community-based projects that communities feel would make a difference in their home villages (e.g., Alaska Suicide Prevention Program) rather than scattered interventions. He noted that Nunavut has also been receiving financial support and preparing a suicide prevention strategy with a focus on wellness.

The Inuit culture is somewhat different from other Aboriginal cultures in different areas of Canada. For the Inuit culture, attaining formal education is a determinant of health and is important for Inuit women and girls to develop their awareness of health wellness issues (Guillou & Rasmussen, 2007). However, the authors assert that non-formal learning is also important, particularly from interacting with the elders. Elders in southern Canada are sought for their wisdom much less frequently and education is measured and valued based on degree status.

For the Inuit, educational attainment and wisdom are not necessarily the same and education attainment is based on language and tradition knowledge. Learning and living are separated in institutions, as are knowledge, judgment and skill, whereas in Inuit heritage, they are never separated. In schools, time and energy is invested in teaching and testing formal knowledge, but achievements are limited as knowledge by itself does not lead to wisdom, independence, or power. The authors conclude that in the context of determinants of health, non-formal educational and frequency (and quality) of interactions with elders should be included in addition to formal educational attainment

as indicators of Inuit health. Teaching culture as a means of restoring traditional aspects of culture such as language should not be limited to the school environment. Language should be taught in the community, where Aboriginal people could learn their language as families. Families could then practice speaking the language in their home, which is also evident in the current study to be a potential mediator for depressive symptoms.

Some Aboriginals are also maintaining their culture and passing traditions on to the next generation. Medical health practitioners must acknowledge and respect such practices and enable patients to feel comfortable to disclose such practices. Patients may be using traditional practices and not reporting them to physicians, which potentially has implications for health care delivery. In terms of health care delivery, other studies found use of traditional medical beliefs, which Cook (2005) asserts may have implications in terms of understanding patients' health care values and in providing effective cross-cultural care. Unfortunately, First Nations respondents could not be included in this study and the use of traditional practices for First Nations people may be significant.

When developing health frameworks, it is important to acknowledge that Inuit and First Nations (and Métis) are different cultures with different experiences, languages, histories, geography, politics, social relations, values, and beliefs that need to be respected and accommodated (Guillou & Rasmussen, 2007). The authors added that each has their own unique cultural heritage with different philosophical approaches to healing. Programs and services as well as ways of delivering existing services should accommodate the uniqueness of Aboriginal culture accordingly for Aboriginal patients.

5.3 Policy

In terms of developing policy based on the current study, what is important is not what policies may be developed, but rather, ensuring that policy incorporates unique aspects of what is learned about the health determinants. Of equal importance is involving Aboriginal people in the process of developing policy. Research initiatives from a population health approach have been successful in creating new institutional research partnerships and in establishing research initiatives that emphasize the necessity to build social capital via a process that is owned, controlled, and accessible to First Nations. As First Nations people continue to become more pluralistic, population health research will need to explore more critically the health determinants; as partnerships continue to be established, the collaborative efforts of researchers and First Nations communities will be successful in understanding the health determinants and in communicating the findings to government and policy-makers.

Research initiatives such as SPHERU's model (i.e., research is conducted in collaboration with communities to identify the sources of health inequities as well as to identify strategies to reduce the inequities) and the Manitoba First Nations Centre for Aboriginal Research have been successful in demonstrating the necessity to build social capital through a process that is owned, controlled, and accessible to First Nations in order to build human capital in population. As population health research initiatives continue to be successful and as people and organizations collaborate their efforts in a pluralistic manner, the potential for social change in alleviating health problems and restoring wellness of First Nations people becomes an integral part of future directions.

The results of the current study should be disseminated to stakeholders involved in the consultation process who may be involved in policy and programs. Stakeholders must include Aboriginal leaders, representatives, and communities. Self-determination is an inherent right for Aboriginal people. Partnerships should be established with First Nations and institutions in the interest of influencing the behaviour of governments to address the determinants of health and to improve the health of First Nations. Partnerships enable those who are skilled to organize with grassroots people to create a collective voice that will potentially be heard by government and policy makers to create policies that address population health issues rather than create policies to reduce administration costs.

Unfortunately, decisions may be made because of economic interests rather than in the interest of improving health. Lavis et al. (2003) found that 45 % of civil servants in finance departments believed that they should not consider health determinants in all major government initiatives. Policies that affect First Nation people are also made by politicians and bureaucrats who "act on the basis of rational self-interest under conditions of imperfect knowledge" (Brooks & Miljan, 2003, p. 40). Politicians and bureaucrats seek re-election and promotion and capping funds may be considered as a means to maximize self-interest. Advocacy on behalf of Aboriginal people to ensure adequate mental health services are provided will be an important part of evaluating existing policies and developing new policies.

When developing policy and initiatives, discussions regarding historical trauma should involve exploring aspects to broaden our understanding of individual and

collective trauma experiences (Denham, 2008). Discussions must involve Aboriginal people to ensure that policies and initiatives are developed within a cultural context. Denham asserted that practical efforts should be made with consideration of the potential for expressing resilience as an alternative while encouraging and supporting culturally appropriate response(s) to historical trauma. Rather than rely on the health care system or government agencies to establish initiatives or programs, communities must also take ownership to promote health and wellness. Labonte (2005) asserted that two important factors are citizen and community commitment to promoting change and the capacity of policy-makers to engage with the results. Unique policies and programs tailored separately for each community will ensure appropriateness and effectiveness.

5.4 Limitations of the Study

Prior to formulating any conclusions based on the data analyses of this study, various limitations of this project must be identified. One area of concern is the possibility that depressive symptoms may have been a significant barrier for respondents when completing the survey. The DSM-IV-TR diagnostic criteria for major depressive episode, as noted earlier in this study, includes symptoms such as depressed mood, fatigue or loss of energy, and diminished ability to concentrate. The symptoms may contribute to lower survey response rate and the underreporting may affect the results.

The extent to which respondents may have underreported depressive symptoms is unknown. Stigma and denial are among other factors that lead to low rates of identifying depression (Stewart, 2008). The authors noted that numerous studies in developed countries indicate that only half of patients with depression are identified in primary care

or general hospital settings. As noted earlier, patients may either report somatic symptoms or do not report depressive symptoms.

The Aboriginal Peoples' Survey categorized people based on ancestry as referring to the ethnic or cultural origin of a person's ancestors. An ancestor was considered more distant than a grandparent. If a person reported at least one Aboriginal ancestry (i.e., North American Indian, Inuit, Métis), the person was categorized as having Aboriginal ancestry (Statistics Canada, 2007). Statistics Canada considered ethnicity to be fluid and probably the most complex concept measured in the census. Respondents' understanding of ancestry and awareness of their family background affect the reporting of ancestry. From one census to the next, respondents change the reporting of their Aboriginal affiliations (Statistics Canada, 2007). The categorization of respondents may affect the results of the study.

With respect to the content of the Aboriginal Peoples' Survey, the questionnaire was designed by a government agency that may influence the type of questions asked in a survey. For example, questions that may be pertinent to day-to-day living and negatively affect health, mood, and life satisfaction may be excluded or ignored because of subsequent costs if problems were reported (e.g., Do you have mold in your house? Has the mold been reported? Has an agency or contractor responded to your report of the mold?). The current study was limited by the questions that were asked in the survey that limits the results of the study, such as the lower reliability of the items related to depressive symptoms for the Inuit. Questions that are worded to acknowledge depressive symptoms that may be expressed differently in other cultures, such as somatic symptoms

or vegetative symptoms may also elicit more accurate reporting from respondents who may lack insight into their depressed mood. Also, the wording of questions in the questionnaire may be confusing or unclear. Respondents may also be hesitant to report honestly for some questions, such as if the respondent considered suicide.

Finally, respondents were contacted by telephone and it is not explicitly stated if respondents who do not have a phone were excluded from participating in the survey. Missing respondents who do not have telephones, who may likely be of lower socioeconomic status and more isolated without a telephone, may also limit the generalizability of the study.

Given the limitations of the study, it is important to note that the sample size was quite large and includes a number of questions that increase our understanding of Aboriginal people from a population health approach. The problem is, and what is perhaps the greatest and most unfortunate limitation, is that questions about depressive symptoms were only selectively included in the Métis and Inuit supplement surveys. Inquiring only the Métis and Inuit respondents about depressive symptoms limits generalizability to the rest of the Aboriginal population and perhaps limited the significance of results.

Finally, the results are based on the 2001 Aboriginal Peoples' Survey, which is less current than the 2006 Aboriginal Peoples' Survey. The more recent survey would provide more current and possibly more significant results in some areas, such as attendance at residential school since thousands of civil claims and retributions have occurred for residential school attendees and family members over the past few years.

Unfortunately, the 2006 survey does not include any questions about depressive symptoms. This is concerning and somewhat distressing, given the significance of the relationship among various indicators and depression that were analyzed in this study.

5.5 Directions for Future Research

Further research is needed to understand the experience of depressive symptoms for Aboriginal people. Different Aboriginal groups have unique cultural traditions and unique needs. Different geographical locations also have unique circumstances and experiences (i.e., urban/rural, on-/off-reserve, northern/southern Canada). Research from a population health perspective provides an opportunity to explore a variety of factors related to mental health for Aboriginal people.

In order for a study similar to the current study to be replicated with more recent data from Statistics Canada, the items related to depressive symptoms must be included in the next Aboriginal Peoples' Survey. Furthermore, the questions must be asked of not only the Métis and Inuit, but also First Nations respondents living both on- and off-reserve.

Although indicators as determinants of health were analyzed separately, the results do not merely demonstrate that depression is associated with factors occurring in isolation from one another when influencing individuals. As Cohen et. al (2006) noted it is essential that future research examines all factors (e.g. neighbourhoods, social support, stress, income inequalities) that potentially mediate the association between SES and depression outcomes.

For future research, it is important to investigate the unequal access to and lower utilization of health care services for Aboriginal people, particularly in the context of the influence of factors such as SES, rural location, racism, cultural and communication differences (Marrone, 2007). Other aspects of mental health are also important to explore, such as anxiety that was briefly investigated in this study.

Some correlations in the current study were significant but were not strong enough to be interpreted. Nonetheless, the relationships are worthy of further investigation. For example, more research is needed to better understand the complexity of religion and spirituality related to depression and medical illness in establishing treatment approaches. Further research into the importance of religion/spirituality for Aboriginal people may provide evidence for allocating more funding to increase the availability and accessibility of pastors, priests, Elders, and other means of spiritual guidance as support.

With the dramatic increase in use of technology over the past decade, items such as mobile phones or computers may also be important to investigate, not only to be considered as indicators of social class/SES, but also as potentially related to social support and depression. Recent technology that has brought changes in our methods of communication has enabled for new opportunities for social interaction. For example, researchers have recently demonstrated that the use of the internet as a source of health-related information for people suffering from illness such as HIV (Kalichman, Benotsch, Weinhardt, Austin, Luke, & Cherry, 2003; Kalichman, Cherry, Pope, Eaton, &

Kalichman, 2005). The authors asserted that patients reported more active coping strategies and greater social support.

The relationship between cellular telephones and social connectedness is also being explored. Based on a survey of Taiwanese college students attending university in the United States, Wei and Lo (2006) found that cellular telephones provide instant membership in a community for individuals who are otherwise poorly connected socially. Wei and Lo noted that cellular telephones augment connectedness by strengthening family bonds, expanding the students' psychological neighborhoods, and facilitating symbolic proximity to those with whom the students were socially connected.

5.6 Conclusion

In conclusion, this study revealed some significant findings about the experience of depression for Aboriginal people in relation to several determinants of health. This study provides information and understanding about the complexity of factors that are related to the depressive symptoms. Population health is a framework that is helpful to understand factors that may be related to depression for Aboriginal people.

The current study demonstrated that exploring results from survey data banks and using the population health framework to examine depressive symptoms enables the phenomena to be studied in a more complex way than merely measuring prevalence rates for depression. While the direction(s) of the relationship is not known, the results of this study provide support for the relationship between determinants of health and depressive symptoms. Although the results are limited to Métis and Inuit populations, considering the limited amount of information available regarding Aboriginal people and depression

as well as in the context of determinants of health, this study contributes significantly to the knowledge and understanding of Aboriginal people in Canada. Future research is needed to determine prevalence for all Aboriginal groups in Canada and to develop further understanding of the relationship between depressive symptoms and population health.

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APPENDIX A

Items from the Aboriginal Peoples' Survey (2001)

Questions for Identification

1. Are you an Aboriginal person, that is, North American, Métis or Inuit?
Yes, North American
Yes, Métis
Yes, Inuit
No
Don't Know

2. Are you a Treaty Indian or a Registered Indian as defined by the Indian Act of Canada?
Yes
No
Don't Know

3. Do any of your ancestors belong to any of the following Aboriginal groups?
01 Yes, North American Indian
02 Yes, Métis
03 Yes, Inuit
04 No

4. Sex.
Male
Female

5. Age in years as of Census day (May 15, 2001).

01 *15-19 years*
02 *20-24 years*
03 *25-34 years*
04 *35-44 years*
05 *45-54 years*
06 *55 +*

Independent Variables

1) Income and Social Status

1. During the year ending December 31, 2000, did you yourself receive any income from the following sources:

	Yes 01	No 02	Don't Know	Missing	Not Stated or Invalid
Paid employment or self-employment?					
Employment Insurance?					
Social assistance?					
OAS, GIS, or Spouse Allowance?					
CPP or QPP?					

2. Economic family total income.
Less than $10,000
$10,000 - $19,999
$20,000 - $29,999
$30,000 - $39,999
$40,000 - $59,999
$60,000 - $79,999
$80,000 or more
Missing
Note: (1) Data for this variable were obtained from the respondent's answers in the 2001 Census.(2) The total income of an economic family is the sum of the total incomes of all members of that family.(3) An economic family refers to a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption.

3. Employment Income.
Loss or none
$1 - $4,999
$5,000 - $9,999
$10,000 - $19,999
$20,000 - $29,999
$30,000 - $39,999
$40,000 or more
Missing
Note: (1) Data for this variable were obtained from the respondent's answers in the 2001 Census. (2) Earnings or employment income refers to total income received by persons 15 years of age and over during calendar year 2000 as wages and salaries, net income

from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income.

4. Total income.

Less than $5,000
$5,000 - $9,999
$10,000 - $14,999
$15,000 - $19,999
$20,000 - $29,999
$30,000 - $39,999
$40,000 or more
Missing

Note: (1) Data for this variable were obtained from the respondent's answers in the 2001 Census. (2) Refers to the total money income received from the following sources during calendar year 2000 by persons 15 years of age and over: wages and salaries (total); net farm income; net non-farm income from unincorporated business and/or professional practice; Canada Child Tax Benefits; Old Age Security pension and Guaranteed Income Supplement; benefits from Canada or Quebec Pension Plan; benefits from Employment Insurance; other income from government sources; dividends, interest on bonds, deposits and savings certificates, and other investment income; retirement pensions, superannuation and annuities, including those from RRSPs and RRIFs; other money income.

5. Household income.

For the year ending December 31st, 2000 please think of the total amount earned by all members of your household from the sales of fish, meat, carvings, skin clothing, furs, crafts, ivory and other similar goods. Which of these ranges does this amount fall into? (Interviewer: Read list. Mark only one circle.)

No income or income loss
$1 - 2,499
$2,500 - 4,999
$5,000 - 9,999
$10,000 - 14,999
$15,000 - 19,999
$20,000 - 24,999
$25,000 - 29,999
$30,000 - 39,999
$40,000 - 49,999
$50,000 - 59,999
$60,000 - 69,999
$70,000 - 79,999
$80,000 and over
Don't know
Refused

2) Education

1. Did you graduate from high school? Please do not include graduation through a High School Equivalency program (GED).
Yes
No
Missing
Not stated or Invalid

Coverage: Respondents who answered 'Eleven','Twelve','Thirteen','Don't know' or 'Refused' to question A1. *Note:* (1) High school graduation varies from province to province and can mean anything from grade 11 to grade 13. As well, it may vary according to the year the respondent graduated (for example, 20 years ago, high school graduation in Quebec was Grade 12). 'Graduate' means the respondent successfully completed secondary school.

2. Have you successfully completed a High School Equivalency program (GED)?
01 Yes
02 No
4. Did you take any of your postsecondary courses by correspondence or through some other form of distance education? By "distance education" we mean education received via mail or electronic media such as television, CD-Rom or the Internet.
01 Yes
02 No

3. Highest level of schooling.
01 No schooling
02 Less than high school diploma
03 High school diploma
04 Some post-secondary
07 Diploma or certificate from trade school
08 Diploma or certificate from other non-university institution
09 University certificate or diploma below Bachelor's level
10 Bachelor's degree
11 University degree, certificate or diploma above Bachelor's level

4. Did you take any of your postsecondary courses by correspondence or through some other form of distance education? By “distance education” we mean education received via mail or electronic media such as television, CD-Rom or the Internet.

3) Employment and Working Conditions

1. During the year ending December 31st, 2000, did you have a paid full-time job (30 hours a week or more), not including self-employment?

01 Yes
02 No

2. Last week, were you on temporary lay-off or absent from your job or business?
01 Yes
02 No

3. Did you look for paid work during the past four weeks? For example: did you contact an employment centre, check with employers, place or answer newspaper ads?

01 Yes
02 No

4. Are you currently working at more than one paid job?

01 Yes
03 No

5. Commuting distance to work.

01 Less than 5 km
02 5 to 9.9 km
03 10 to 14.9 km
04 15 to 19.9 km
05 20 to 24.9 km
06 25 to 29.9 km
07 30 km or more

6. Labour force activity.

01 Employed
02 Unemployed
03 Not in the labour force

7. What are the reasons that have kept you from working a full-time job?

	Yes	Other response(s) to question	Missing	Not Stated or Invalid
Going to school				
No full-time jobs available in the area where I live				
Health problems				
Family responsibilities				
Not qualified for available jobs				
Retired				
Other reason				

4) Physical Environment

1. Is your home rented or owned by you or another member of this household?
01 Rented by you or another member of this household
02 Owned by you or another member of this household
Don't know

2. Do you consider the water available to your home safe for drinking?

01 Yes
03 No

3. Are there times of the year that your water is contaminated?
01 Yes
03 No

4. Are you on a waiting list for social housing?
01 Yes
03 No

5. Are any of the following a problem for Aboriginal people in the community or neighbourhood where you are living now?

	Yes 01	No 02	Don't Know	Refused
Suicide				
Unemployment				
Family violence				
Sexual abuse				
Drug abuse				
Alcohol abuse				
Other				

6. Are you satisfied or dissatisfied with job opportunities in your community? (Inuit)
01 Satisfied
04 Dissatisfied

7. Are you satisfied or dissatisfied with your most recent job in your community? (Inuit)
01 Satisfied
04 Dissatisfied

8. Are you satisfied or dissatisfied with the quality of education in your community? (Inuit)
01 Satisfied
04 Dissatisfied

9. Are you satisfied or dissatisfied with the availability of health services (e.g. nursing station, hospital) in your community? (Inuit)
01 Satisfied
04 Dissatisfied

10. Are you satisfied or dissatisfied with the quality of housing in your community? (Inuit)
01 Satisfied
04 Dissatisfied

11. Are you satisfied or dissatisfied with recreational facilities (e.g. ice rinks, gyms) in your community? (Inuit)
01 Satisfied
04 Dissatisfied

12. Are you satisfied or dissatisfied with how well the provincial or territorial government is dealing with needs in your community (for example, needs related to job creation, education and health? (Inuit)
01 Satisfied
04 Dissatisfied

13. Are you satisfied or dissatisfied with the work of your local police force (or by-law officer) in keeping your community safe from crime? (Inuit)
01 Satisfied
04 Dissatisfied

14. Are you satisfied or dissatisfied with how the territorial or provincial court deals with people who break the law? (Inuit)
01 Satisfied
04 Dissatisfied

15. When ALONE in your home in the evening, do you feel . . . (Inuit)
01 is very worried?
02 is somewhat worried?
03 is not at all worried about your safety from crime

16. In general, are you satisfied or dissatisfied with your personal safety from crime? (Inuit)
01 Satisfied
04 Dissatisfied

17. In the last five years have you ever considered moving out of this community? (Inuit)
01 Yes
02 No

5) Personal Health Practices and Coping Skills

1. At the present time do you smoke cigarettes daily, occasionally or not at all (frequency)?
01 Daily
02 Occasionally
03 Not at all
04 Refused

2. Over your lifetime, have you smoked a total of 100 or more cigarettes (about 4 packs)?
01 Yes
02 No
03 Refused

3. Type of smoker.
01 Daily smoker
02 Occasional smoker but former daily smoker
03 Always an occasional smoker
04 Non-smoker now, former daily smoker
05 Non-smoker now, former occasional smoker
06 Never smoked

4. During the past 12 months, have you had a drink of beer, wine, liquor or any other alcoholic beverage?
01 Yes
02 No
03 Refused

5. On the days that you had a drink, how many drinks did you usually have?
6 Don't know
7 Refused
9 Not stated or Invalid
01 1 drink per day to
12 12 drinks per day
13 More than 12

6. In a typical week in the past 3 months, how often have you engaged in recreational gambling such as Bingo, Casino, Video Lottery Terminal, Lotto 6/49, etc.?
01 None
02 Less than once a month
03 Once a month
04 Once a week
05 2 to 3 times a week
06 4 to 6 times a week
07 Every day
08 Don't know
09 Refused

7. Have you done any of the following in the past 12 months?

	Yes 01	No 02	Don't know 03	Refused 04
Walk for exercise				
Gardening				
Swimming				
Bicycling				
Popular or social dance				
Home exercises				
Ice hockey				
Ice skating				
In-line skating/ rollerblading				
Jogging or running				
Golfing				
Exercise class or aerobics				
Downhill skiing				
Hunting				
Soccer				
Bowling				
Baseball or softball				
Tennis				
Weight-training				
Fishing				
Volleyball				
Basketball				

6. Do you think you are overweight, underweight or that your weight is just about right? (Métis) (for Multiple Regression)
01 Overweight
02 Underweight
03 Just about right
04 Don't know

6) Social support networks

1. People sometimes look to others for companionship, assistance, guidance or other types of support. Could you tell me how often each of the following kinds of support is available to you when you need it:

	All of the time 01	Most of the time	Some of the time	Almost none of the time 04	Refused	Missing	Not stated or invalid
Someone you can count on to listen to you when you need to talk							
Someone you can count on when you need advice							
Someone to take you to the doctor if you need it							
Someone who shows you love and affection							
Someone to have a good time with							
Someone to confide in or talk about yourself or your problems							
Someone to get together with for relaxation							
Someone to do something enjoyable with							

3. How religious or spiritual a person do you consider yourself to be? (Métis)
01 Very
02 Moderately
03 Not very
04 Not at all
05 Refused
98 Missing
99 Not stated or invalid

4. On a scale of 1 to 5, with 1 being very weak and 5 being very strong, how strong are your ties with members of your family living in your community but in another household? (Inuit)
01 Very weak
02 Weak
03 Moderate
04 Strong
05 Very strong
06 Missing
07 Not stated or Invalid J05TIES

5. The next set of questions are about your participation in the community. Thinking of the last 12 months...

Did you volunteer for a community organization or group (e.g., radio station, search and rescue team, church group, youth group)?	Yes 01	No 02	Don't Know 03
Did you work at a community event (incl. feasts, festivals, food distribution, spring clean-up)?			
Did you attend a local community or board meeting?			
Did you attend a public meeting held in the community?			
Did you attend or participate in a local sports event?			

7) Health Services

1. In the past 12 months, have you seen or talked on the telephone with the following health professionals about your physical, emotional or mental health?

	Yes 01	No 02	Missing	Not Stated or Invalid
Family doctor or general practitioner				
Other medical doctor (such as surgeon, allergist, or orthopedist)				
Traditional healer				
Nurse				
Dentist or orthodontist				
Social worker, counselor, or psychologist				
Chiropractor				
Physiotherapist or occupational therapist				

2. Are First Nations, Métis or Inuit traditional medicines, healing or wellness practices available in the city, town or community where you currently live? (Métis)
01 Yes
02 No
03 Don't know

3. In the past 12 months, have you been a patient overnight in a hospital, nursing home or convalescent home? (Métis)
01 Yes
02 No
03 Don't know

5. In the past 12 months, was there ever a time when you felt you needed health care but didn't receive it? (Métis)
01 Yes
02 No
03 Don't know
04 Refused

6. In the past 12 months, how often have you had to acquire drugs or medications from a hospital, drug store or pharmacy with a prescription from a medical doctor or dentist? (Métis)
01 Never → End interview
02 One or two times
03 From 3 to 5 times
04 From 6 to 10 times
05 More than 10 times

7. In the past 12 months, have you ever had a prescription that you could not fill because of lack of money? (Métis)
01 Yes
02 No
03 Don't know

8) Culture

1. Were you ever a student at a federal residential school or industrial school?
01 Yes
02 No
03 Refused

2. Was any member of your family ever a student at a federal residential school or industrial school?

01 At least one family member was a student
02 No family member was a student

3. Do any of your teachers or teachers' aides teach in an Aboriginal language?
01 Yes
02 No
03 Don't know

4. Are you being taught an Aboriginal language at elementary or high school?
01 Yes
02 No
03 Don't know

5. Are you being taught about Aboriginal people at elementary or high school?
01 Yes
02 No
03 Don't know

6. Were any of your teachers or teachers' aides in elementary or high school (including High School Equivalency program) Aboriginal?
01 Yes
02 No
03 Don't know

7. Did any of your teachers or teachers' aides teach in an Aboriginal language?
01 Yes
02 No
03 Don't know

9. Were you taught an Aboriginal language while you were attending elementary or high school (including High School Equivalency program)?
01 Yes
02 No
03 Don't know
Go to Question 35
10. Do you feel that what you are being taught about Aboriginal people is usually accurate, sometimes accurate, seldom accurate or never accurate?
01 Usually accurate
02 Sometimes accurate
03 Seldom accurate
04 Never accurate
05 Don't know

11. Do you understand or speak an Aboriginal language?
01 Yes
02 No

12. How would you rate your ability to understand your primary Aboriginal language? By 'primary' we mean the language that you use most often or that you are most comfortable using. Would you say you can ...
01 Understand very well
02 Understand relatively well
03 Understand with effort
04 Understand a few words

13. How would you rate your ability to speak your primary Aboriginal language? Would you say you can ...
01 Speak very well
02 Speak relatively well
03 Speak with effort
04 Speak a few words

14. How would you rate your ability to read in your primary Aboriginal language? Would you say you can...
01 Read very well
02 Read relatively well
03 Read with effort
04 Read a few words
05 Not read in your primary Aboriginal language
06 Not applicable (it is not a written language)

15. How would you rate your ability to write in your primary Aboriginal language? Would you say you can...
01 Write very well
02 Write relatively well
03 Write with effort
04 Write a few words
04 Not write in your primary Aboriginal language

16. How much of the time do you currently use your primary Aboriginal language in your household?
01 All the time
02 Most of the time
03 Some of the time
04 Very seldom
05 Not at all
06 Not applicable

17. How much of the time do you currently use your primary Aboriginal language at work?
01 All the time
02 Most of the time
03 Some of the time
04 Very seldom
05 Not at all
06 Not applicable

18. How much of the time do you currently use your primary Aboriginal language at school?
01 All the time
02 Most of the time
03 Some of the time
04 Very seldom
05 Not at all
06 Not applicable

19. How much of the time do you currently use your primary Aboriginal language in other places?
01 All the time
02 Most of the time
03 Some of the time
04 Very seldom
05 Not at all
06 Not applicable

20. How important is it that you keep, learn or re-learn your Aboriginal language? Is it ...
01 Very important
02 Somewhat important
03 Not very important
04 Not important

The remaining questions are from the Métis Supplement Survey:

22. Was any Aboriginal language, such as Michif, Cree, Saulteaux or Dene ever spoken at home when you were a child?
01 Yes
02 No
03 Don't know

23. Do you own a sash, a traditional Métis shirt or other articles traditionally associated with Métis culture?
01 Yes
02 No
03 Don't know

24. How important is it, or would it be to you, for your children to learn an Aboriginal language? Is it ...
01 Very Important?
02 Fairly Important?
03 Not too Important?
04 Not Important at all?
05 Don't know

25.How important is it, or would it be to you, for your children to learn about Métis culture and history? Is it ...
01 Very Important?
02 Fairly Important?
03 Not too Important?
04 Not Important at all?
05 Don't know

26.Do you do any art or craftwork, such as leatherwork, beadwork, weaving, tanning, carving or painting, in traditional Métis or Aboriginal style or motifs?
01 Yes
02 No
03 Don't know

9) Gender
1. Sex:
01 Male
02 Female

Dependent Variables
Depressive Symptoms
Inuit:
1. On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you felt downhearted and blue?
Never
Almost never
Sometimes
Fairly often
Very often
Always

2. On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you been a happy person?
Never
Almost never
Sometimes
Fairly often
Very often
Always

3. On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you felt so down that nothing could cheer you up?
Never
Almost never
Sometimes
Fairly often
Very often
Always

Métis:
1. During the past 12 months, was there ever a time when you felt sad, blue or depressed for 2 weeks or more in a row?
01 Yes
02 No
03 Don't know

2. Please think of the 2-week period during the past 12 months when those feelings were the worst. How often did you feel this way during those two weeks?
01 Every day
02 Almost every day
03 Less often

3. Have you ever seriously considered committing suicide or taking your own life?
01 Yes
02 No
03 Don't know

Anxiety Symptoms (Inuit)

1. On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you been a nervous person?

01 Never or almost never
03 Sometimes or fairly often
05 Very often or always

2. On a scale of 1 to 6, with 1 being never and 6 being always, how much of the time, during the last month, have you felt calm and peaceful?

08 Never or almost never
10 Sometimes or fairly often
12 Very often or always

APPENDIX B

The following are the aggregate variables that were created: Community Aboriginal Problem for both the Métis and Inuit (Cronbach's $\alpha = .903$), Exercise/ Recreational Activity for the Métis (Cronbach's $\alpha = .816$), Social Support for both the Métis and Inuit (Cronbach's $\alpha = .927$), Contact with Health Professionals for both the Métis and Inuit (Cronbach's $\alpha = .514$), Community Satisfaction Items (Inuit) (Cronbach's $\alpha = .735$), and Diagnosed with a Health Problem for the Métis (Cronbach's $\alpha = .574$).

Aggregate Variable: Community Aboriginal Problem items:

1. Is Suicide a problem for Aboriginal people in the community or neighbourhood where you are living now?
2. Is unemployment a problem for Aboriginal people in the community or neighbourhood where you are living now?
3. Is family violence a problem for Aboriginal people in the community or neighbourhood where you are living now?
4. Is sexual abuse a problem for Aboriginal people in the community or neighbourhood where you are living now?
5. Is drug abuse a problem for Aboriginal people in the community or neighbourhood where you are living now?
6. Is alcohol abuse a problem for Aboriginal people in the community or neighbourhood where you are living now?
7. Is there another problem for Aboriginal people in the community or neighbourhood where you are living now?

Aggregate Variable: Exercise/Recreational Activity

Have you done any of the following in the past 12 months?

1. Walked for exercise
2. Gardening
3. Swimming
4. Bicycling
5. Popular or social dance?
6. Home exercises?
7. Ice hockey?
8. Ice skating?
9. In-line skating/rollerblading?
10. Jogging or running?
11. Golfing?
12. Exercise class or aerobics?
13. Downhill skiing?
14. Hunting?
15. Soccer?
16. Bowling?
17. Baseball or softball?
18. Tennis?
19. Weight-training?
20. Fishing?

21. Volleyball?

22. Basketball?

Aggregate Variable: Frequency of Availability of Social Support

People sometimes look to others for companionship, assistance, guidance or other types of support. Could you tell me how often each of the following kinds of support is available to you when you need it:

1. Someone you can count on to listen to you when you need to talk.
2. Someone you can count on when you need advice.
3. Someone to take you to the doctor if you need it.
4. Someone who shows you love and affection.
5. Someone to have a good time with.
6. Someone to confide in or talk about yourself or your problems.
7. Someone to get together with for relaxation.
8. Someone to do something enjoyable with.

Aggregate Variable: Contact with Health Professionals

In the past 12 months, have you seen or talked on the telephone with the following health professionals about your physical, emotional or mental health?

1. Family doctor or general practitioner.
2. Other medical doctor (such as surgeon, allergist, or orthopedist).
3. Traditional healer.
4. Nurse.
5. Dentist or orthodontist.

6. Social worker, counselor, or psychologist.

7. Chiropractor.

8. Physiotherapist or occupational therapist.

Aggregate Variable: Community Satisfaction Items

1. Are you satisfied or dissatisfied with job opportunities in your community?

2. Are you satisfied or dissatisfied with your most recent job in your community?

3. Are you satisfied or dissatisfied with the quality of education in your community?

4. Are you satisfied or dissatisfied with the availability of health services (e.g. nursing station, hospital) in your community?

5. Are you satisfied or dissatisfied with the quality of housing in your community?

6.. Are you satisfied or dissatisfied with recreational facilities (e.g. ice rinks, gyms) in your community?

7. Are you satisfied or dissatisfied with how well the provincial or territorial government is dealing with needs in your community (for example, needs related to job creation, education and health?

8. Are you satisfied or dissatisfied with the work of your local police force (or by-law officer) in keeping your community safe from crime?

9. Are you satisfied or dissatisfied with how the territorial or provincial court deals with people who break the law?

Aggregate Variable: Diagnosed with a Health Problem

Have you been told by a doctor, nurse, or other health professional that you have:

1. Diabetes.
2. Arthritis or rheumatism.
3. Asthma.
4. Chronic bronchitis.
5. Emphysema or shortness of breath.
6. Cancer.
7. Effects of a stroke.
8. High blood pressure.
9. Heart problems.
10. Stomach problems, ulcers.
11. Hepatitis.
12. Kidney disease.
13. Tuberculosis.
14. Other (not HIV/AIS).

APPENDIX C

Table 1

Income Level with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Income source: paid/self-employment ↓ 1 = Yes 2 = No	.18	3049	--
Income source: employment insurance ↓ 1 = Yes 2 = No	-.005	3035	--
Employment income ↑ 1 = loss or none . . . 7= $40,000 or more	-.020	3046	--
Total income ↑ 1 = less than $5,000 . . . 7= $40,000 or more	-.025	3046	--

** p <.01 (1-tailed), *p<.05 (1-tailed)

Table 2

Level of Education with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Did you graduate from high school ↓ 1 = Yes 2 = No	-.006	1915	--
Completed high school equivalency program ↓ 1 = Yes 2 = No	-.013	1647	--
Postsecondary courses by correspondence/distance ed. 1 = Yes 2 = No ↓	-.024	1500	--

** p <.01 (1-tailed), *p<.05 (1-tailed)

Table 3

Employment and Working Conditions and Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Labour force activity 1 = Employed 2=Unemployed ↓	.023	3030	--
Job was full-time (30 hours or more/week) ↓ 1 = Yes 2 = No	.030	1722	--
On temporary layoff or absent last week ↓ 1 = Yes 2 = No	-.016	1415	--
Looked for paid work in past 4 weeks ↓ 1 = Yes 2 = No	-.008	1302	--
Prevents working: going to school ↓ 1 = Employed 2=Unemployed	-.047	764	--
Prevents working: no full-time jobs available in area ↓ 1 = Yes 2 = No	.035	764	--
Prevents working: family responsibilities ↓ 1 = Yes 2 = No	.041	764	--
Currently working at more than one paid job ↓ 1 = Yes 2 = No	.021	1708	--
Commuting distance to work ↑ 1 = Less than 5 km . . . 7=30 km or more	-.016	3046	--

* p<.05 (1-tailed)

Table 4

Community Aboriginal Problems and Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Community Aboriginal Problem: Suicide ↓	**-.125****	**2184**	**1.56%**
1 = Yes 2 = No			
Community Aboriginal Problem: Unemployment ↓	-.088**	2505	< 1%
1 = Yes 2 = No			
Community Aboriginal Problem: Family Violence ↓	**-.143****	**2325**	**2.04%**
1 = Yes 2 = No			
Community Aboriginal Problem: Sexual Abuse ↓	**-.153****	**1989**	**2.34%**
1 = Yes 2 = No			
Community Aboriginal Problem: Drug Abuse ↓	**-.123****	**2427**	**1.5%**
1 = Yes 2 = No			
Community Aboriginal Problem: Alcohol Abuse ↓	-.092**	2539	< 1%
1 = Yes 2 = No			
Community Aboriginal Problem: Other ↓	**-.154****	**2280**	**2.37%**
1 = Yes 2 = No			

* *p<.01 (1-tailed)

Table 5

Personal Health Practices, Coping Skills, with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Drank alcoholic beverage in past year ↓	.014	3035	--
1 = Yes 2 = No			
How often gambled ↑	-.020	3031	--
1 = None . . . 6 = 4 times per week or more			

*p<.05 (1-tailed), * *p< .01 (1-tailed)

Table 6

Exercise/Recreational Activity with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Walked for exercise in past year ↓	.016	3038	
1 = Yes 2 = No			
Gardened in past year ↓	-.019	3017	
1 = Yes 2 = No			
Swam in past year ↓	.037*	3011	< 1 %
1 = Yes 2 = No			
Bicycled in past year ↓	.014	3003	
1 = Yes 2 = No			
Danced in past year ↓	.009	3016	
1 = Yes 2 = No			
Done home exercises in past year ↓	.0007	3002	
1 = Yes 2 = No			
Played ice hockey in past year ↓	-.042**	3012	< 1 %
1 = Yes 2 = No			
Skated on ice in past year ↓	-.034*	3007	< 1 %
1 = Yes 2 = No			
Did in-line skating in past year ↓	.387	3002	
1 = Yes 2 = No			
Jogged or ran in past year ↓	-.015	3002	
1 = Yes 2 = No			
Golfed in past year ↓	-.033*	3002	< 1 %
1 = Yes 2 = No			

Taken exercise class in past year ↓	-0.11	2996	
1 = Yes 2 = No			
Downhill skiing in past year ↓	-.030	3001	
1 = Yes 2 = No			
Hunted in past year ↓	-.039*	2991	< 1 %
1 = Yes 2 = No			
Played soccer in past year ↓	-.010	2997	
1 = Yes 2 = No			
Bowled in past year ↓	.004	2985	
1 = Yes 2 = No			
Played softball/baseball in past year ↓	-.021	2991	
1 = Yes 2 = No			
Played tennis in past year ↓	-.015	2991	
1 = Yes 2 = No			
Did weight training in past year ↓	.025	2987	
1 = Yes 2 = No			
Fished in past year ↓	-.023	2973	
1 = Yes 2 = No			
Played volleyball in past year ↓	-.020	3001	
1 = Yes 2 = No			
Played basketball in past year ↓	.017	2982	
1 = Yes 2 = No			

*p<.05 level (1-tailed); **p < .01 (1-tailed)

Table 7

Frequency of Availability of Social Support with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
How often you have someone to listen to you ↓	.072**	3016	< 1%
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone to count on when need advice↓	.088**	3014	< 1%
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone to take you to the doctor↓	**.116****	**3005**	**1.34%**
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone who shows love/affection ↓	095**	3015	< 1%
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone to have a good time with ↓	**.109****	**3000**	**1.18%**
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone confide in/talk about problems	.091**	3000	< 1%
1 = All of the Time . . . 4 = Almost None of the Time ↓			
How often have someone get together with to relax ↓	**.103****	**2997**	**1.06%**
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone to do something enjoyable ↓	**.100****	**2999**	**1 %**
1 = All of the Time . . . 4 = Almost None of the Time			

* *p<.01 level (1-tailed)

Table 8

Contact with Health Professionals with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Contact past year with family doctor ↓	-.054**	3028	< 1%
1 = Yes 2 = No			
Contact past year with eye doctor ↓	.023**	3017	< 1%
1 = Yes 2 = No			
Contact past year with medical doctor↓	-.096**	3021	< 1%
1 = Yes 2 = No			
Contact past year with traditional healer↓	-.077**	3018	< 1%
1 = Yes 2 = No			
Contact past year with nurse ↓	-.063**	3008	< 1%
1 = Yes 2 = No			
Contact past year with dentist or orthodontist↓	-.008	3018	--
1 = Yes 2 = No			
Contact past year with chiropractor↓	-.035**	3009	< 1%
1 = Yes 2 = No			
Contact past year physiotherapist/occup. therapist↓	-.069*	3012	< 1%
1 = Yes 2 = No			
Contact past year worker/counsellor/psychologist↓	**-.213****	**3023**	**4.54 %**
1 = Yes 2 = No			

*p<.05 (1-tailed), **p<.01 (1-tailed)

Table 9

School with Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Ability to read primary Aboriginal language ↓	.055	626	--
1 = Very well 4= Few words			
Ability to write primary Aboriginal language ↓	.117	174	--
1 = Very well 4= Few words			
Use primary Aboriginal language: at work↓	.076	447	--
1 = All of the time 5= Not at all			
Attended Federal residential/industrial school↓	.021	3015	--
1 = Yes 2 = No			
Teachers/aides taught in Aboriginal language↑	.003	2936	--
1 = Yes 2 = No			
Taught Aboriginal lang. elem/secondary school↓	-.008	2966	--
1 = Yes 2 = No			
Usage of primary Aboriginal language: at school↓	-.010	280	--
1 = All of the time 5= Not at all			

Table 10

Income Level and Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Income source: paid/self-employment ↓	.032	2121	--
1 = Yes 2 = No			
Income source: employment insurance ↓	-.002	2104	--
1 = Yes 2 = No			
Income source: CPP or QPP ↓	.030	2110	--
1 = Yes 2 = No			

Table11

Level of Education and Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Completed high school equivalency program ↓	.022	1570	--
1 = Yes 2 = No			
Postsecondary courses by correspondence/distance ed.	.008	640	--
1 = Yes 2 = No ↓			
Highest level of schooling ↑	.004	2109	--
1 = No schooling 11= above Bachelor's degree			

Table 12

Employment and Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Job was full-time (30 hours or more/week) ↓ 1 = Yes 2 = No	.078	1095	--
On temporary layoff or absent last week ↓ 1 = Yes 2 = No	-.017	1056	--
Looked for paid work in past 4 weeks ↓ 1 = Yes 2 = No	-.002	1013	--
Prevents working: going to school ↓ 1 = Employed 2=Unemployed	-.025	482	--
Prevents working: no full-time jobs available in area ↓ 1 = Yes 2 = No	-.032	482	--
Prevents working: family responsibilities ↓ 1 = Yes 2 = No	.003	482	--
Prevents working: not qualified for available jobs ↓ 1 = Yes 2 = No	.083	482	--
Prevents working: other reason ↓ 1 = Yes 2 = No	-.050	482	--
Currently working at more than one paid job ↓ 1 = Yes 2 = No	.035	1095	--
Commuting distance to work ↑ 1 = Less than 5 km . . . 7=30 km or more	.014	2133	--

Table 13

Community Aboriginal Problems and Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Community Aboriginal Problem: Suicide ↓	-.086**	1754	< 1%
1 = Yes 2 = No ↓			
Community Aboriginal Problem: Unemployment ↓	-.084**	1909	< 1%
1 = Yes 2 = No			
Community Aboriginal Problem: Family	**-.112****	**1409**	**1.25%**
Violence↓			
Community Aboriginal Problem: Sexual Abuse ↓	-.074**	1731	< 1%
1 = Yes 2 = No			
Community Aboriginal Problem: Drug Abuse ↓	-.039*	1780	< 1%
1 = Yes 2 = No			
Community Aboriginal Problem: Alcohol Abuse ↓	-.039*	1780	< 1%
1 = Yes 2 = No			
Community Aboriginal Problem: Other ↓	-.052*	1488	< 1%
1 = Yes 2 = No			

* *p<.01 (1-tailed)

Table 14

Community Satisfaction and Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Satisfaction with job opportunities in community ↓	.096**	2106	< 1%
1 = Yes 2 = No			
Satisfaction with most recent job in community ↓	.089**	1588	< 1%
1 = Yes 2 = No			
Satisfaction with quality of education in community↓	.077**	1811	< 1%
1 = Yes 2 = No			
Satisfaction with health service availability ↓	.051*	1881	< 1%
1 = Yes 2 = No			
Satisfaction with quality of housing in community ↓	.080**	1878	< 1%
1 = Yes 2 = No			
Satisfaction with rent/house payments in community ↓	.092**	1557	< 1%
1 = Yes 2 = No			
Satisfaction with recreational facilities in community ↓	.064**	1815	< 1%
1 = Yes 2 = No			
Satisfaction with freshness of food, local stores ↓	.057**	1958	< 1%
1 = Yes 2 = No			
Satisfaction with availability of country food ↓	.039	2026	< 1%
1 = Yes 2 = No			
Satisfaction how gov't deals with community needs↓	.040	1551	< 1%
1 = Yes 2 = No			

Satisfaction police keep community safe from crime↓	.038	1796	< 1%
1 = Yes 2 = No			
Satisfaction with how court deals with lawbreakers ↓	.038	1415	< 1%
1 = Yes 2 = No			
Satisfaction with present life in community ↓	**.202****	**1906**	**4.08%**
1 = Yes 2 = No			

p<.05, *p<.01 (1-tailed)

Table 15

Personal Health Practices, Coping Skills, with Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Number of drinks per day on days when had a drink↑	.002	1046	--
1 = 1 . . . 13 = more than 12			
Over a lifetime smoked 100 or more cigarettes ↓	-.046	636	--
1 = Yes 2 = No			

Table 16

Frequency of Availability of Social Support with Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
How often you have someone to listen to you ↓	**.163****	**2048**	**2.66%**
1 = All of the Time . . . 4 = Almost None of the Time			
How often someone to count on when need advice↓	**.197****	**2046**	**3.88%**
1 = All of the Time . . . 4 = Almost None of the Time			

How often have someone to take you to the doctor↓	**.153****	**2024**	**2.34%**
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone who shows love/affection ↓	**.212****	**2037**	**4.49%**
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone to have a good time with ↓	**.183****	**2048**	**3.35%**
1 = All of the Time . . . 4 = Almost None of the Time			
How often someone confide in/talk about problems	**.223****	**2028**	**4.97%**
1 = All of the Time . . . 4 = Almost None of the Time ↓			
How often have someone get together with to relax ↓	**.222****	**2035**	**4.92%**
1 = All of the Time . . . 4 = Almost None of the Time			
How often have someone to do something enjoyable ↓	**.216****	**2048**	**4.67 %**
1 = All of the Time . . . 4 = Almost None of the Time			

* *p<.01 level (1-tailed)

Table 17

Contact with Health Professionals with Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Contact past year with family doctor ↓	-.027	2124	--
1 = Yes 2 = No			
Contact past year with eye doctor ↓	-.013	2125	--
1 = Yes 2 = No			
Contact past year with medical doctor↓	-.033	2121	--
1 = Yes 2 = No			

Contact past year with traditional healer↓	-.020	2117	--
1 = Yes 2 = No			
Contact past year with nurse ↓	-.058**	2122	< 1%
1 = Yes 2 = No			
Contact past year with dentist or orthodontist↓	-.014	2123	--
1 = Yes 2 = No			
Contact past year with chiropractor ↓	-.045*	2121	< 1%
1 = Yes 2 = No			
Contact past year physiotherapist/occup. therapist↓	-.017	2123	--
1 = Yes 2 = No			
Contact past year worker/counsellor/psychologist↓	**-.159****	**2120**	**2.53 %**
1 = Yes 2 = No			

*p<.05 (1-tailed), **p<.01 (1-tailed)

Table 18

Language with Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Ability understand primary Aboriginal language ↓	.031	1825	--
1 = Yes 2 = No			
Ability to speak primary Aboriginal language ↓	.020	1826	--
1 = Very well 4= Few words			
Ability to read primary Aboriginal language ↓	-.006	1818	--
1 = Very well 4= Few words			
Ability to write primary Aboriginal language ↓	.005	1585	--
1 = Very well 4= Few words			

Usage primary Aboriginal language: in household↓	-.008	1818	--
1 = All of the time 5= Not at all			
Usage primary Aboriginal language: at work↓	.000	1062	--
1 = All of the time 5= Not at all			
Usage of primary Aboriginal language: other places↓	-.008	1813	--
1 = All of the time 5= Not at all			
Importance of your Aboriginal language↓	-.020	2102	--
1 = Very important 4=Not important			

*p < 0.05 (1-tailed), ** p < .01 (1-tailed)

Table 19

School and Language with Depressive Symptoms ↑ (Inuit)

	r	N	% Variance
Ever a student at residential/industrial school↓	.003	3015	--
1 = Yes 2 = No			
Family member student at residential/industrial school↓	.011	2139	--
1 = Yes 2 = No			
Taught about Ab. People in elementary/2ndary school ↓	-.012	1849	--
1 = Yes 2 = No			
Usage of primary Aboriginal language at school ↓	-.094*	390	--
1 = Yes 2 = No			
Asses accuracy of teachings about Aboriginal people↓	.046	1146	--
1 = Usually accurate 4=Never accurate			

*p < .05 l (1-tailed), **p < .01 (1-tailed)

APPENDIX D

Table D1

Aggregate: Diagnosed with a Health Problem and Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Aggregate told by health professional have a health problem ↓	**-.166****	**2832**	**2.76%**

* *p<.01 (1-tailed)

Table D2

Diagnosed with a Health Problem and Depressive Symptoms ↑ (Métis)

	r	N	% Variance
Told by health professional have diabetes ↓ 1 = Yes 2 = No	-.002	3037	--
Told that have arthritis or rheumatism ↓ **1 = Yes 2 = No**	**.102****	**3034**	**1.04%**
Told by health professional have asthma ↓ **1 = Yes 2 = No**	**-.101****	**3026**	**1.02%**
Told that have chronic bronchitis↓ **1 = Yes 2 = No**	**-.108****	**3020**	**1.16%**
Told that have emphysema or shortness of breath ↓ 1 = Yes 2 = No	-.064**	3012	Less than 1%
Told by health professional have cancer ↓ 1 = Yes 2 = No	-.047*	3023	Less than 1%

Told by health professional have effects of a stroke↓ 1 = Yes 2 = No	-.037*	3016	Less than 1%
Told by health professional have high blood pressure↓ 1 = Yes 2 = No	.010	3017	--
Told by health professional have heart problems↓ 1 = Yes 2 = No	-.032	3021	--
Told that have stomach problems, ulcers↓ 1 = Yes 2 = No	.010	3017	--
Told by health professional have hepatitis ↓ 1 = Yes 2 = No	-.072**	3022	Less than 1%
Told by health professional have kidney disease ↓ 1 = Yes 2 = No	.000	3019	--
Told by health professional have tuberculosis↓ 1 = Yes 2 = No	-.027	3000	--
Told that have other (not HIV/AIS)↓ **1 = Yes 2 = No**	**-.144****	**3009**	**2.07 %**

*p<.05 (1-tailed), **p<.01 (1-tailed)

Table D3

Aggregate: Diagnosed with a Health Problem and How Religious/Spiritual is the Respondent ↓ (Métis)

	r	N	% Variance
Aggregate diagnosed health problems ↓ 1 = Yes 2 = No	**.146****	**12,101**	**2.13%**

* *p<.01 (1-tailed)

Table D4

Needed Health Care, But Did Not Get It

Reasons did not get care	Frequency	Percent	Valid %	Cumulative %
Not available in area	146	10.0	.5	10.0
Not available when required	180	12.3	.6	12.3
Waiting time too long	303	20.9	1.0	20.9
Felt it would be inadequate	111	7.6	.4	7.6
Cost	191	13.0	.6	13.0
Too busy/personal/family	148	10.1	.5	10.1
Didn't get around to it	314	21.4	1.1	21.4
Didn't know where to go	30	2.0	.1	2.0
Transportation problems	73	5.0	.2	5.0
Dislikes doctors/afraid	80	5.4	.3	5.4
Language or other problem	268	18.3	.9	18.3