Linkage social capital as a Determinant of Aboriginal Health: An Exploratory Examination of Social Relationships.

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Abstract

Variations in First Nations health between health service delivery areas (HSDA) in British Columbia do not conform to the volumes of research demonstrating increased socio-economic status (SES) increases health status. The lack of congruence between research demonstrating a link between health and SES and First Nation health and SES may be accounted for by the variations in the number of communities that participate in relationships with the Canadian government that promote self-determination. The HSDAs that have more First Nation communities participating in health transfer and the British Columbia Treaty Commission process with more First Nations on-reserve have better health than HSDAs with few communities participating in these relationships and large off-reserve populations. HSDAs that have more Aboriginal organizations and services also have higher off-reserve populations and lower health status. These finding suggest that relationships promoting equal participation in the development of social programs improves the health status of those who utilize those social programs.
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Chapter I

Introduction

1.01 Purpose

To explore how the health of aboriginals in British Columbia is partially determined by linkage social capital\(^1\).

1.02 Rationale

Social relationships play a key role in the ability of a population to leverage and access health resources. Aboriginal organizations need to be recognized and included in the delivery of social programs to instil a sense of cultural continuity with the population accessing the service. Developing and maintaining social programs such as health transfers and signing treaties and land claims ensures the active participation of the aboriginal population that will access resources/services resulting from these processes.

1.03 Creating an Aboriginal Health Discourse

The aboriginal population\(^2\) is more likely to suffer from illnesses and a shorter life expectancy than the general population of Canada. There are limitations to current research on the social determinants of health and their ability to explain the incidence and prevalence of morbidity and mortality among aboriginals. Biological indicators and social determinants of health often report aboriginal health in an uncritical manner, neglecting power relations and thus resulting in cultural relativism (Auer & Andersson, 2001; O’Neil, Reading, & Leader, 1998). In order to improve aboriginal health status, aboriginal health analysis must be critically informed to ensure accurate and effective representations of the social context.

Current aboriginal health analyses require specific information to inform culturally appropriate health care, including biological and social determinant of health indicators as well as a critical description of the social context in which health is realized. Critical health analysis incorporates descriptions of power relations and will provide accurate, timely, realistic (Auer &

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\(^1\) A brief definition of linkage social capital is offered on page 119.

\(^2\) The aboriginal population is a diverse group, including Status Indians, Non-Status Indians, Inuit, and Métis. The term First Nations refers to the population of Status and Non-Status Indians. The names First Nations and aboriginal are derived from political boundaries drawn out in the Constitution of Canada and the Indian Act. Indigenous refers to people around the world who are the original inhabitants of the land upon which they reside. The terms people and peoples are used interchangeably. None of these terms is meant to be derogatory, and when possible I will utilize the terminology preferred by the aboriginals themselves. The health data used to form the conclusions of this research are based solely on status Indians which I refer to as First Nations.
Andersson, 2001; O’Neil, Reading, & Leader, 1998), and respectful (Haig-Brown, 1996) information for culturally appropriate health care development.

The processes of self-determination³ are directly involved in power relations characterized by colonial governance. A narrative that describes the relationships within the processes of self-determination may demonstrate how participation in social organizations could account for variations in health status between aboriginals and the general population. The processes of self-determination are a major theme within the aboriginal social context. The process includes local developments meant to infuse communities with sustainable solutions (RRCAP, 1996; Warry, 2000). Self-determination describes processes necessary for community-derived solutions to community problems. Identifying the structure and qualities of relationships in the processes of self-determination and incorporating this narrative into health analyses will better situate culturally appropriate health care development. Such an analysis will directly address power relations affecting the community’s ability to be self-determining.

The purpose of this study is to investigate whether linkage social capital is a determinant of aboriginal health. The concept of social capital describes how groups invest in relationships to develop various resources. Relationships described in social capital research are social; this does not exclude individual, peer, or familial relationships within groups that develop social capital. Social capital is characterized by those who participate in relationships as well as the services produced as a result of these relationships. Bonding social capital is developed when groups pursue relationships within the community, while bridging social capital is characterized by relationships formed between groups from different communities through mutual interaction. Relationships with the state are considered linkage social capital (Mignone, 2003), and social programs resulting from these relationships are meant to be collectively owned by those participating in their development.

Co-opting⁴ the concept of social capital for inclusion in aboriginal health discourse requires an understanding of the social context in which these relationships take place. As social capital is developed within and between groups, it is necessary to identify the appropriate arena for investigation (Mignone, 2003). Within the aboriginals’ context, social relationships that permit participation in civil society are partially determined by the Canadian government. This

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³ Self-determination is synonymous with social organization and civil(c) society development.
⁴ I co-opt the concept because I do not use an established definition and measurement of social capital.
important and historically dysfunctional relationship between aboriginals and the Canadian state makes it necessary to explore current links between aboriginal communities and the Canadian government in relation to health. For the purpose of this project, identifying the relationships between aboriginal communities and the state is necessary to determine the legitimacy of linkage as a determinant of health.

The necessity of identifying the appropriate arena in which relationships are taking place requires clarification. The ability of aboriginals to inform civil society—to be self-determining—depends on the effective relationship between aboriginal communities and the Canadian government. Relationships between the state and aboriginal communities differ depending upon the players involved. These relationships are structured as an economic style trust relationship, in which the government assumes fiduciary responsibility for the aboriginal population (Stevenson, 2003). The obligation of the Canadian government is to meet the needs of the aboriginal population, so that their health is equivalent to that of the general population in the same or similar geographic region (First Nations Inuit Health Branch, 1999a). In Canada, the Métis are granted constitutional recognition as aboriginals, but the government has not assumed fiduciary responsibility for them. The government’s relationship with the Inuit is not considered to be a trust style relationship either. As the result, the territorial governments of Nunavut, Yukon, and the North West Territories have developed distinct relationships with the Canadian government.5

Since the process of developing a civil society is partially determined by political structures and requires community input, individuals and groups within society must trust each other and be guided by established norms and notions of reciprocity to achieve equal participation in social organizations. In the absence of trust, norms, and reciprocity individuals are left to meet their needs and goals on their own, which inevitably leads to acting out of self-interest (Lomas, 1998). A population that is able to mobilize necessary social resources to respond to the needs and goals of its individual members depends upon political structures activating social resources to determine civil society. Canada’s historical and current colonial governance has warped the social capital development of aboriginal communities and their ability to inform civil society by predetermining their social organization.

5 The populations of Nunavut and the North West Territories are largely comprised of aboriginal groups, predominantly Inuit. So, the relationship between the northern aboriginal population and the Canadian government is one largely structured by territorial governments.
1.04 Measuring Linkage social capital in Aboriginal Communities

Although political structures influence the self-determination efforts of aboriginal communities, Smith (2002) has insightfully noted that the process of transformation (i.e. decolonisation, self-determination, social organization) can occur across multiple strata, not only purely political ones. Self-determination within the aboriginal context thus occurs not only at the political level, but also at the social institutional level, where aboriginals attempt to influence social organization through locally controlled social programs and services. The Guide to Aboriginal Organizations and Services (GAOS) identifies several social programs and services developed by the state in order to foster relationship development with the aboriginals (British Columbia's Ministry of Community, Aboriginal and Women's Services, 2003). The organizations and services identified in the GAOS have mandates that are specific to aboriginal populations, but GAOS does not specify whether a relationship with the aboriginals exists or whether its services and organizations are actively involved in self-determination processes. In this paper, active social relationships between the First Nations and the Canadian government will be identified by treaty/land claims and health transfer levels.

Since aboriginal communities in British Columbia are diverse and since a community can be geographical, political, and/or cultural in nature, a regional analysis is more suited to describing how social capital can be utilized as a determinant of health. Relationships between aboriginal communities and the Canadian government resulting in health services and programs are determined by the geographic location of the aboriginal community. On the provincial level, these relationships will be organized around the local health service delivery area. On the federal level, the First Nations Inuit Health Branch defines the geographic regions of BC as North, South and Island. In order to investigate the possibility of social capital as a determinant of health, this study will use geographic regions defined by the BC Provincial Health Officer's Report (BC PHO) (2002) and the BC First Nations Regional Health Survey (BCFNCHC) (2000) to

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6 Health Service Delivery Areas replace health regions. There are 16 HSDAs within five health authorities. Each HSDA has a number of Local Health Areas. See Appendix Maps section.
7 Information systems produced data based on 20 health analysis areas known as 'health regions' (BCPHO, 2003,).
8 Three regional divisions of British Columbia (Northern Interior, Southern Interior, and the Coast) roughly equivalent to geo-cultural divisions and Environmental Health Services Zone Boundaries of Medical Services Branch, Health Canada (BCFNRHS, 2002).
distinguish between aboriginal communities.\textsuperscript{9} The number of services and organizations, treaty stage, and health transfer level in one region will indicate the number of possible relationships defined by \textit{linkage social capital}. This study will use GAOS, which only identifies the quantity of relationships, as a crude indicator of \textit{linkage social capital}, since the number of relationships may not be as important as their structure and qualities.\textsuperscript{10} The number of communities participating in health transfer and BCTC processes within each health region will be utilized as an indicator of \textit{linkage social capital} that identifies the quantity and quality of the relationships in which these communities participate to reduce colonial governance.

\textsuperscript{9} Aboriginal communities within geographic regions are diverse. The use of the health regions as communities of aboriginals is a geo-political boundary I have borrowed to demonstrate the utility of social capital in aboriginal health discourse.

\textsuperscript{10} This indicator is similar to the measures of social capital utilized by current social capital researchers in population health. The measures of union and professional association membership measure bonding and bridging social capital.
Chapter II

Review of Literature

2.01 Social Capital

Social capital has become a very popular concept for many academic disciplines, including political science, sociology, anthropology, economics, and epidemiology. The World Bank, World Health Organization, and many international organizations utilize the concept of social capital to guide policy and program development. As with any concept that receives widespread discussion, social capital has been conceptualized in a myriad of different ways and has garnered a fair amount of criticism and scepticism. In order to clarify the concept of social capital, I offer a brief review of the concept’s definitions drawn from studies in social epidemiology and theoretical works.

Social capital describes the resources generated or available to individuals through memberships in particular groups. Social capital is said to influence health through three pathways. The most frequently cited pathway attempts to account for health variations related to income inequality. The second pathway is based on access to resources, while the third refers to transmission of health information. The second and third pathways have not received the necessary research to substantiate influence on health, while the first pathway has received as much praise as criticism. Concepts of social capital have also been used in political science and economics research to determine the efficiency of democratic and corporate enterprises, respectively. Even with such widespread attention, the concept of social capital requires refining if it is to be used in population health research.

Social capital has been conceptualized in many different ways, but every variation on this common theme examines how social interactions produce capital. Marx, Durkheim, Smith, Hume, and Barker (Woolcock, 1998) all propose different ways social interactions generate capital. More recently, Putnam (1995), Coleman (1990), and Bourdieu (1986) revisited the importance of social interactions and reinvigorated the debate on social capital. Several population health researchers have adopted the concept as their research theme to explain disparities in health status between populations. However, critics of the way in which social capital has been utilized in population health research have also brought forth legitimate

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11 A group may include clubs, associations, unions, communities, or other collectives that are governed by their members.
concerns about the efficacy of applying barely theorized concept to policy and program
development aimed at health status improvement (Muntaner, Lynch, & Oates, 1999).

2.02 Conceptualizing Social Capital

Social capital has been conceptualized as an individual attribute, a social phenomenon, a
process, and a resource or goal. Its most common usages in social epidemiology include social
capital as a social phenomenon or a resource/goal. Social capital as a process has been utilised in
political science and economics to determine the efficiency of democratic, social, and for profit
institutions. As an individual attribute, economists have researched successful individuals with
stocks of social capital, but since this research is akin to network and social support research, this
conceptualization has found minimal support.

Glaeser, Liabson, and Sacerdote (2000) provide an individualistic conceptualization of
social capital. They state that social capital is comprised of an individual’s social attributes,
including social skills, charisma, and Rolodex size, all of which enable access to returns (market
or non-market) as a result of interactions with others. Glaeser et al. (2000) conceptualize social
capital as a process, as an ability to utilize social skills to reap benefits, and as resources resulting
from the processes of developing social capital. This conceptualization is problematic, because
the argument that what produces social capital is social capital is tautological. As conceptualized,
an individual with social skills (social capital) is able to generate more social capital. This
concept neglects to distinguish the processes that generate social capital and elaborate on their
results. The social aspect of this concept is an individual’s ability to be affable and appeal to
many other individuals, not something that is held or possessed by a group or society (Glaeser et
al., 2000).

Conceptualizations of social capital that view it as a social attribute contend that
individuals cannot possess social capital; rather, they have access to it through their association
with a group. Fukyama (in Quibria, 2003) is one such theorist, who conceptualizes social capital
as individual traits or a set of shared values and norms enabling individuals to cooperate with one
another and lubricating these relationships for added efficiency. This conceptualisation is a thinly
veiled social phenomenon, because individuals only share traits that permit social interaction and
not the results of these interactions. By neglecting the results of social interactions, the treatment
of social capital as a lubricant develops a concept that utilizes capital as a metaphor rather than
as a result of commodity production. This, in turn, removes any heuristic value that the concept
may hold, because the variables describing this metaphor (qualities) could be extended beyond reason and thus permit any analysis that could inform policy and program development.

Bowles and Gintis (2002) utilize a similar conceptualization of social capital, defining it as “trust, concern for one’s associates, a willingness to live by the norms of one’s community and punish those who do not” (p. 291). These qualities, which lubricate associationalism, reinforce the metaphorical usage of capital, because they do not specify whether social interactions produce commodities. Rather, the use of metaphor portrays these traits as a commodity ready to be invested into social relationships to facilitate efficient production of a commodity.

The most common conceptualization of social capital in social epidemiology is offered by Putnam (1995). Putnam’s research on social capital investigates the efficiency of modern democracies in the United States and offers the visage of an American ‘bowling alone’ as the root of the diminishment of civil society. Putnam (1995) states that social capital “refers to the features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit” (p. 67). This conceptualization presents social capital as part of a social phenomenon essential to processes that contribute to civil society. Putnam’s (1995) conceptualization of social capital is inherently good, neglecting the use of norms and networks to reinforce social isolation of individuals or groups and/or reinforces criminal or immoral behaviours.

Coleman (1998, s98) states that social capital is defined by its function. It consists of a variety of entities with two common elements: an aspect of a social structure and facilitation of actors’ actions. This conceptualization attempts to blend macro and micro social levels through actions of individuals within social structures. Both the causes and consequences of these interactions are considered social capital, which raises concerns about the applicability of social capital in any interaction. A distinction must be made between what generates social capital and the results of social capital investments. Coleman (1998) does not distinguish between process and goal in his conceptualization, resulting in another tautological argument of the process or function also being the goal.

Coleman (1998) does inform us, however, about the distinction between micro and macro social interactions. Granovetter (1973) discussed weak and strong ties highlighting the differences in interactions between acquaintances and interactions with family or close peer
groups. These distinctions have spawned social capital research that identifies interactions at various levels throughout society. Mignone (2003) notes three forms of social capital that occur at different levels throughout society: bonding social capital describes interactions between groups within a community; bridging social capital is developed in interactions between groups of different communities; and linkage social capital results from interactions across vertical relationships or those including some hierarchical structure. Incorporating these multiple levels of social interaction permits a better understanding of how social interactions may influence social structures and reduces the number of variables at each level necessary to inform civil society.

Bourdieu (1991) has offered an insightful conceptualisation of social capital. He states that it is “the aggregate of actual and potential resources which are linked to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance or recognition—or, in other words, to membership in a group” (p. 298). What is insightful in Bourdieu’s work is that capital has many forms (he describes how the production of commodities results in various forms of capital including cultural, human, and economic capital). He also notes that the interactions producing capital are purposeful because the actors belong to a durable network which is beyond simple acquaintance and is more or less institutionalized. Unfortunately, Bourdieu does not expand on how group interactions allow or deny access to resources.

The qualities that define a group with stocks of social capital include trust, norms of behaviour and reciprocity, connectedness and solidarity among groups, mutual aid (Berkman & Kawachi, 2000), respect (Stansfeld, 1999), and civic participation and engagement (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997). Social relationships that embody these qualities within a group are said to be socially cohesive. The qualities of effective social relationships, which describe a cohesive society, also function as resources that are accessible to everyone in the group.

Resources that are accessible to everyone in a society are broadly defined as social capital. Kawachi et al. (1997) state that social capital is a public good created as a by-product of social relationships. Schulman and Anderson (2001) note that capital is any resource that can assume tangible and intangible forms. The nature of resources that are subsumed in social capital make them a public good by their property of non-excludability (Kawachi et al., 1997), meaning
that value is external to the individual and inherent in the structure of social relationships (Berkman & Kawachi, 2000). Berkman and Kawachi (2000) contend that social capital is a subset of the concept of social cohesion and that social cohesion describes a society with the absence of latent conflict and the presence of strong social bonds. Social capital that results from cohesive relations is meant to benefit everyone living in a community, and accessibility to it cannot be restricted (Kawachi et al., 1997). Putnam (1995) notes how social capital facilitates coordination and cooperation for mutual benefit. A community that is cohesive will have stocks of social capital that are accessible to all members and function as resources for individuals to foster collective action (Berkman & Kawachi, 2000).

The resources that are provided through social capital manifest themselves throughout a community. Lomas (1998) notes that preservation of social cohesion requires social structures “that allow for the exchange of views and values and engender mutual trust” (p. 1183). Social structures that foster the preservation of social capital include meeting places, sport leagues, clubs and associations (Lomas, 1998), and “associations that bridge social divisions and the presence of conflict management (e.g. responsive democracy and independent judiciary and so forth)” (Berkman and Kawachi, 2000, p. 175). Research conducted by Kawachi et al. (1997), Wilkinson (1996), as well as Muntaner, Lynch, and Oates (1999) aims at measuring the levels of social capital by determining the number of associations in which individuals participate, including voter turnout, union participation, and association membership (e.g. clubs, church groups, athletic associations, etc.). Kawachi et al. (1997) also employed question on trust in others and reciprocity. The resources provided by a cohesive society, social capital, are both tangible and intangible. Tangible forms of social capital include associational membership, union participation, and social structures that embody the qualities of social cohesion (educational institutes, judiciary, health care institutes, etc.). Intangible forms of social capital include trust in others, reciprocity, and norms of behaviour. All resources provided by social capital, either tangible or intangible, facilitate the effectiveness of social structures by providing “coordination and cooperation for mutual benefit” (Putnam, 1995, p. 66).

Kawachi et al., (1997) note that “civic engagement refers to the extent which citizens involve themselves in their communities, as most often measured by membership in groups and associations” (p. 2). Generally, civic participation functions as a method for the exchange of views and values, exposing individuals to others in the community (Lomas, 1998). It is a
requirement for responsive and smooth functioning civic institutions (Berkman & Kawachi, 2000). Putnam (1995) states that “Social capital is not a substitute for effective public policy rather a prerequisite for it and in part a consequence of it” (p. 42). The intangible aspects of social capital function to permit the development of tangible civic participation. Social capital thus acts as a mediator between the citizenry and the implementers of social structures aimed at meeting the goals and needs of the citizenry. Putnam (1995) notes social capital enables the citizenry to act together effectively in their pursuit of shared objectives. One of the first researchers to investigate the effects of social relationships, Durkheim (in Edwards and Foley, 2001) notes that cohesive societies provide an abundance of mutual moral support, which permits individuals to share social resources. In turn, Bourdeiu (1991) states:

The structure and distribution of the different types and sub-types of capital at a given moment in time represents that immanent structure of the social world...which govern its functioning in a durable way [italics added], determining the chances of success for practices. (p. 42)

The concept of social capital is an aspect of the social world that determines the success of practices by providing a basis for the development of civil society. Berkman and Kawachi (2000) argue that “civil society describes the associations in which we conduct our lives, and that owe their existence to our needs and initiatives rather than to the state” (p. 177). Putnam’s (1995) research on social capital attempts to gauge the responsiveness and effectiveness of social institutions in fulfilling the mandate given to them by the citizenry. Responsive and effective societies enjoy egalitarian patterns of political participation and ensure the security of all their members. Thus, social capital determines the success and functions as a resource for the citizenry to meet collective goals and needs.

2.03 Social Capital and Health

Attempts to explain variations in health status between populations have incorporated sociological theories describing the ability of people to formulate and pursue their goals and needs within public institutions. Lomas (1998) states:

The way in which we organize society, the extent to which we encourage interaction among the citizenry and the degree to which we trust, and associate with each other in a caring community is probably the most important determinant of health. (p. 189)
Social capital can thus affect individual health at multiple intersections. Lomas (1998) poses an important question: “Is heart disease caused by atherosclerosis in those that eat too much butter or is it caused by stress of them living isolated lives in a social structure that fails to value their input compared to the input of a select few with command of the resources?” (p. 1184). Lomas (1998) also alludes to three possible intersections where social capital affects health: stress (psychosocial), isolation –(socio-structural), and input –(behavioural). Berkman and Kawachi (2000) highlight these intersections, stating that social capital affects health by:

1. Influencing health behaviour through promoting knowledge transference and providing norms of behaviour;
2. Influencing access to services and amenities through determining organizational processes that ensure access; and
3. Influencing psycho-social processes that provide effective support and a source of self-esteem and mutual respect.

Inequalities in health may thus be resolved by increasing the integrity of social structures through increasing their responsiveness and effectiveness in integrating the citizenry’s social capital (Lomas, 1998).

When applied to health research, social capital has found a receptive audience. However, it also inspired numerous vociferous critics. Population health researchers have incorporated the concept of social capital in an attempt to explain variations in health status between populations. While the social capital’s critics contend that most uses of this concept are not appropriately theorized, they also recognize the potential effect that social interactions may have on health. Currently, social capital is a fledgling concept in health disparities research, and several considerations must be included if the concept is to be utilized in an ethical and productive manner.

Veenstra (2002) utilized Putnam’s (1995) conceptualization to determine whether social capital could account for variations in health status between populations in different regions in Saskatchewan as well as to determine the efficiency of local health authorities. He found that high social capital rates were correlated with low mortality rates when controlling for age, as indicated by aggregate association and civic participation levels both individually and socially. Regions with older populations had higher social capital rates and lower mortality; there was no correlation between social capital and mortality in younger populations. To determine the
efficiency of health authorities, Veenstra (2002) interviewed health authority staff. He was unable to find a correlation between regional health governance and social capital rates, citing methodological issues, health board experience, and the conceptualization of social capital. These factors do not relate to governance in general. However, in a similar study Rico, Fraile, and Gonzalez (in Macinko & Starfield, 2001) identified a correlation between social capital and improved regional governance. They determined that improved government performance was demonstrated by local authorities, who were able to obtain resources for health from the central government, implement health programs, leverage resources, and agree on policies to guide health programs (Rico et al., in Macinko & Starfield, 2001).

Kawachi has conducted several studies utilizing social capital as an explanation for health disparities between populations. For example, Kawachi, Kennedy, Lochner, and Prothrow-Stith (1997) demonstrated a correlation between social capital and health status. They contend that social capital is a pathway between income inequality and health status. Kawachi, Kennedy, and Glass (1998) determined that decreased levels of trust correlate to decreased self-rated health status, low reciprocity, and low association density. Kawachi, Kennedy, and Wilkinson (1999) concluded that low social capital, high income inequality, and low trust were more prevalent in populations that witnessed more violent crime. Kawachi et al. (1997) demonstrated that groups with high-income inequality also have low levels of social cohesion. However, the research study did not determine whether lower social cohesion resulted in increased income inequality or whether increased income inequality resulted in lower social cohesion.

Wilkinson (1996) was the first to propose a link between income inequality, social capital, and health status. He proposed that individuals in high income inequality areas have poorer health status because of their relative position in society. Individuals who are poor perceive themselves as disadvantaged; this increases their stress, which directly affects their ability to stave off diseases. Wilkinson (1996) did not focus on social capital. Rather, he utilized the concept of social cohesion as his theoretical underpinning. He extended his discussions on social capital to include macro level analysis. Wilkinson (1996) found that higher levels of social cohesion correlated with low health status. Although social cohesion may be important in the establishment of social capital, as a concept it does not appropriately describe social interactions in the production of commodities.
2.04 Critiques of Social Capital

The critiques of social capital in population health research identify several conceptual and methodological issues that need to be resolved before social capital can be effectively utilized in health promotion. Issues that must be addressed include the macro-micro interface of social interactions (Macinko & Starfield, 2001; Muntaner, Lynch, & Smith, 2001), the effect of power relations on social interaction (Muntaner, Lynch, & Smith, 2001), sources and consequences of interactions (Macinko & Starfield, 2001; Muntaner, Lynch, & Smith, 2001; Portes, 1995), the role of autonomy in group behaviour (Hawe & Shiel, 2000; Macinko & Starfield 2001; Muntaner, Lynch, & Smith, 2001), the types of relationships referred to by social capital and the role of reciprocity in interactions (Macinko & Starfield, 2001; Portes, 1995).

Many concerns arise when social capital is used as a pathway between income inequality and health status. This pathway is considered psychosocial, because internalizing social hierarchy affects the psycho-neuro-immunological response associated with cardio-pulmonary disease and diabetes. Utilizing animal models of stress response, Wilkinson (1996) demonstrated that individuals whose income is low relative to their peers’ exhibited increased incidence and duration of stress responses, which affected their psycho-neuro-immunological response. When this argument is applied to policy and program development, it promotes anti-egalitarian reactions stemming from victimization or blaming the community, which both result from neglecting the role of the social context of hierarchy creation. The ways in which groups interact within hierarchies and the larger social context are important in identifying how bonding, bridging, and *linkage social capital* is developed.

Muntaner and Lynch (1999) and Muntaner, Lynch, and Oates (1999) note that income inequality is an abstraction of economic structures and is not reflective of social structures, because it relies on individual rather than social attributes. In the analysis of social capital’s effect on health, a reliance on individual attributes results in policies that target individual traits and behaviours rather than social relations (Muntaner, Lynch, & Oates, 1999). Muntaner and Lynch (1999) state that utilizing income inequality as an indicator of social divisions neglects multiple factors that can affect social capital, including economic structures (class) and political structures (colonial governance). Muntaner, Lynch, & Oats (1999) conclude:
The omission of economic and political variables that might have an impact on income inequality and population health may lead to biased estimates of the aggregate relationship between income inequality and mortality rates. (p. 700)

Research on social capital utilizing income inequality neglects the ways in which income inequalities are produced and focuses on the psychological effects of income distribution as the determinants of health inequalities (Muntaner, Lynch, & Oates, 1999). Muntaner and Lynch (1999) and Muntaner, Lynch, and Oates (1999) warn that disregarding the economic and political structures in an analysis of social capital reduces the content validity of the measures and thus diminishes the degree to which social capital affects health.

Without incorporating direct measures of economic and political structures in an analysis of social capital’s effect on health, we cannot identify whose social relations are playing key roles in civil society’s development (Muntaner, Lynch, & Oates, 1999). To accurately describe variations in health between populations we must detail the relations of production. Research that neglects the relations of production also excludes forms of social capital in the population. Studies that neglect to include various forms of social capital result in socially incohesive characterizations and “attribute their population health experience to this alleged collective liability” (Muntaner, Lynch, & Oates, 1999, p. 725). This inaccurate characterization may lead to punitive moralistic or oppressive policies.

Muntaner, Lynch, & Smith (2001) note how social capital is conceptualized in population health, viewing interactions as horizontal and neglecting hierarchical relationships. Gender, race, and class have hierarchical dimensions that influence social interaction as well as the consequences of or commodities resulting from these interactions. Hawe and Shiel (2000) note that studying social capital necessitates identifying how hierarchies are overcome. This includes identifying how civilians’ values and goals are integrated into commodities produced through social interaction (embeddedness) and the integrity of the group with the power to act upon collective will rather than subjective interests.

Sources and consequence of social interaction must be identified before one can speculate on the methods of embedding and acting upon civil will (Macinko & Starfield, 2001; Muntaner, Lynch, & Smith, 2001; Portes, 1995). Autonomy is directly related to sources and consequences of social capital, and it describes the ability of an individual or group to act independently of vested interests (Hawe & Sheil, 2000). Thus, autonomy requires a balance between embedding
the will of appropriate group(s) into the resulting commodity as well as integrity on the part of
the power group. Also important to embedding is the information transmitted in interactions that
produce commodities (Muntaner, Lynch, & Smith, 2001).

Social interaction occurs across many levels, including those described by bonding,
bridging, and linkage social capital. As noted by Marx (1867) and Bourdieu (1991), capital is
generated as a result of interactions that produce commodities. Therefore, social capital must
result from the production of a commodity by social actors, people, or groups whose goal is
social development rather than individual or private profit. The concept of social capital has been
considered synonymous with civic virtue. It is vital to democracy, because produced
commodities are considered socially invested resources. Discerning the types of relationships in
the production of social capital requires identifying the arena or level of interaction (Mignone,
2003) and the resulting commodity.

Along with the produced commodity, interactions generate capital that can be utilized in
the production of new commodities. Conceptualizations of social capital have identified
reciprocity as an outcome of social interactions. The phenomenon of reciprocity as described in
social capital research is the result of investments in social interactions. Thus, since it is used to
reinvest or gain access to commodities, it is synonymous with capital. What need to be
determined are the extent and use of reciprocity, as well as the ways in which it can be
extinguished.

An investigation of social capital’s influence on health can help situate findings and
ethically inform policy and program development. Obviously, all elements determining social
capital rely on balance rather than all or nothing influence (FNIRHSSC, 1999). Conceptualizing
social capital outside a notion of balance neglects the variety of social interactions, many of
which may have a negative impact on health. In addition, several conceptualizations of social
capital ignore the dark side of social interactions. Namely, social interaction may exclude groups
or individuals, restrain personal freedoms, undermine the welfare state, place excessive demands
on group members, and reinforce delinquent behaviour. Striking a balance between groups in the
production of socially invested resources is necessary for ethical policy and program
development. Social capital has been said to both benefit and, albeit less frequently, detract from
social development. It emerges from the relationships in which a society engages at various
levels external to familial and peer interaction (described elsewhere as social support and
network theory) (Mignone, 2003). This level of investigation is considered necessary to inform critical investigations.\footnote{Critical investigations are those that incorporate an analysis of power relations (i.e. class structure, gender relations, and marginalized groups).}

The key to this conceptualization is the notion that capital has many forms. Capital emerges from interactions between actors who produce and consume commodities (Marx, 1867). Forms of capital include commodity media (money), commodities, and the control of the means of production and/or resources. Capital can be possessed by anyone who engages in the production of a commodity, and it can be utilized to produce other commodities. Capital that results from group interactions is social, because it is collectively owned by a group and not individually possessed.

2.05 Social Capital and Aboriginal Health

Although Chandler and Lalonde (1998) did not specifically study social capital, the concept is implicated in the development and maintenance of cultural continuity. Youth suicide rates have been shown to fall as the result of cultural continuity between individuals and social institutions that embody their culture (Chandler & Lalonde, 1998). Chandler and Lalonde (1998) state that cultural continuity is necessary to ensuring individual self-continuity, or the ability of individuals to recognize self within the past, present, and future. In the absence of this recognition, youth perceive suicide as a living option, because they do not recognize selfhood with the past, present, or future self (Chandler & Lalonde, 1998). The theoretically driven research of Chandler and Lalonde (1998) notes how the conception of self presupposes “summing across the inevitable changes that time has in store for each of us” (p.193). The notion of selfhood without recognition of who we are or who we are becoming is “fundamentally nonsensical” (Chandler & Lalonde, 1998, p. 193). Youth are not born with a sense of self-continuity; it is developed over time and through interactions with their environment. If youths cannot connect their future selves with their past or present selves during the development of selfhood, suicide becomes a live option. This is because the dead person in question would scarcely count as them. The transition between youth and adulthood aggravates this situation with a myriad of challenges. In addition, difficulties arise “whenever one’s culture, out of which the particulars of one’s identity are necessarily composed, is also thrown into serious disarray” (Chandler & Lalonde, 1998, p. 193). Chandler and Lalonde (1998) state that culture is a
necessary component of maintaining self-continuity, because it "holds our nose to the grind stone of social responsibilities [italics added] and cultural promises during our own moments of developmental transition" (p. 200). The ability of culture to provide this formative structure can only materialize when culture is enacted. Within First Nations communities, the ability to enact culture has been impaired by a threat of government policies unravelling aboriginal culture (Tilley, 1986, in Chandler & Lalonde, 1998). Self-continuity is partially dependent upon cultural continuity, because the cultural aspects of one's environment provide guidelines and formats for the realization of self through time. Without these guidelines youth are at a risk of not recognizing a conception of self that incorporates past, future, and present representations of self (Chandler & Lalonde, 1998). The concept of cultural continuity does not identify what social relations are necessary to ensure that the social institutions embody the culture of the parties involved.

The research conducted by Chandler and Lalonde (1998) implicates political structures that partially determine the function of social capital. As noted by Muntaner, Lynch, and Oates (1999), the inclusion of political structures as variables in health analysis is necessary to ensure content validity. The political structure that most influences the development of civil society within First Nations communities is Canada's colonial governance. In communities with high levels of cultural continuity, the social capital of the First Nations functions in a way that promotes civil society development. Communities with low levels of cultural continuity have poor social relations with the colonial governance of Canada, which in turn neglects the function of the First Nations' social capital.

Chandler and Lalonde (1998) do not provide an explanation of the social phenomena permitting cultural continuity. The incorporation of several theories of social capital demonstrates a theoretical development that describes the mechanisms for the perpetuation of cultural continuity within the First Nations. The research of Chandler and Lalonde (1998) and of the BC PHO (2002) is reflective of Wilkinson's (1996) conceptualization of social capital effect on health, because it places the effective health mechanisms within the individual. Although enlightening, the indicators used by Chandler and Lalonde (1998) provide only a superficial examination of how social capital affects the health of First Nations members within British Columbia. What these indicators lack is a representative sample of the First Nations' social context. Not every aboriginal community within British Columbia is part of the land claims
process or self-governance talks. Some pursue self-determination issues through different venues and different agreements with the Canadian government. Many First Nations communities share responsibilities of these indicators, while others pursue them on their own. Smith (2000) has noted that self-determination occurs not only at the political level but on multiple levels simultaneously. Incorporating all of the multiple levels on which self-determination may occur can ensure accurate representations of the First Nations’ social context.

Muntaner, Lynch, and Oates (1999) describe another effective mechanism of social capital’s impact on health. Their theoretical development research states that an individual’s health is compromised when he or she lacks access to responsive social capital. Without a responsive linkage brand of social capital, there is a gap between those implementing policies and the population affected by these policies. This gap leads to policy developers and implementers ignoring the needs of the population and acting out of their own self-interest.

2.06 Aboriginal/State Relationship

Relationships between indigenous populations and colonizing nations are constructed to favour the colonizing population by disregarding indigenous governance. Colonial governments remove indigenous populations from active participation in civil society. The colonizing nation replaces the indigenous population’s involvement with its own and its supporters’ self-interests. The relationships between the indigenous peoples and the colonizing nation are characterized by a hierarchy in which the colonizer is superior to the indigenous population. This hierarchy is infused throughout the colonial government and subjects the indigenous people to the self-interests of those supporting the colonial government. The government’s supporters include those who deliver services and programs to the indigenous populations and those who have an economic interest in the land or resources within the indigenous populations’ territory. Health transfer and the British Columbia Treaty Commission (BCTC) are attempts at redefining the colonial relationship between the First Nations and the Canadian government. Both of these programs aim at increasing the First Nations’ participation in civil society development by establishing relationships that remove the Canadian government’s leading role in determining the First Nations’ society. Health transfer and the BCTC process reconstruct the colonial relationship to develop relationships that respect First Nations’ rights.

Utilizing homogenous indicators of race, ethnicity, and culture in the development of policies and programs neglects the diversity within First Nations’ populations. These indicators
are reflective of the Canadian government’s approaches to relationships with these indigenous peoples of Canada. These relationships differ based on several variables, including recognized land base, treaty status, historical association with the Canadian government, area of residence, and political affiliation. These variables impact all indigenous and Canadian state relationships in different ways. For instance, First Nations communities associated with a land base south of the 60th parallel and possessing recognized administrative experience\textsuperscript{13} are able to pursue health transfers at a different pace than First Nations communities that do not meet any or all of these criteria. This example highlights the different approaches of the Canadian government to the First Nations when it comes to the transfer of health services. The relationships between aboriginal groups, First Nations, Métis, Inuit, and the Canadian state are similarly constructed, differentiated by the level of governance and particular issues that the relationship is meant to address.

Many aboriginal communities and organizations insist that the role and function of social programs must be determined by local communities and not imposed by the state. The investigation to determine the effective and responsive nature of social capital must thus examine the social relationships in which aboriginal communities participate. If there is a number of cohesive relationships (relationships able to respond to community needs and goals in an effective manner) indicated by the number of social programs within an aboriginal community, it is hypothesized that the community’s social capital permits active participation in determining civil society. The results of social capital in this setting manifest themselves as communities with numerous social programs infused with community-based developments.

2.07 Legacy of Colonialism

First Nations’ civil society has been drastically altered through the implementation of colonial government policies. The policies implemented by the Canadian government have at times stated the necessity of assimilating aboriginals outright. To achieve this goal the colonial government of Canada has purposefully attempted to reduce the effectiveness of aboriginal communities’ social capital by implementing policies that disallow them to maintain governing and social programs. Aboriginal communities within Canada are attempting to assert their sovereignty through revitalizing their own civil society via self-determination. Self-

\textsuperscript{13} Recognized administration experience is influenced by treaty status, historical association, and political affiliation.
determination is not only a political goal; it requires social programs in aboriginal communities to also be under aboriginal control.

During the colonization of Canada the imposition of social programs not derived from the aboriginal communities’ social capital have negatively affected aboriginal health. Kelm (1998) defines colonialism as the process of geographical incursion, socio-cultural dislocation, the establishment of external political control [italics added], and economic dispossession, the provision of low level social services [italics added], and finally, the creation of ideological formulations around race and skin colour, which position the colonizers at a higher evolutionary level than the colonized. (p. xviii)¹⁴

Residential schools are an obvious example of the imposition on the aboriginal population’s social capital. Waldram, Herring, and Young (1995) note that along with the implementation of external political control came the imposition of a different health care system. Since aboriginal health care systems were highly interconnected, the government’s imposition upon any one social program meant the imposition upon many others.

The structure of social capital (bridging, bonding, linking) and the qualities of government-aboriginal relationships can indicate if their function of being effective and responsive to the community is realized. Investigating the structure and qualities of social relationships is important to determining whether aboriginals are active participants in the development of civil society. By investigating the consequences of social relationships we can determine what structures and qualities of social relationships permitting active participation in civil society development must be explored. We will also be able to demonstrate who plays the key role in aboriginal civil society development and comment on the extent of the First Nations’ equal participation in Canadian society.

Identifying how the First Nations are developing responsive social capital requires an investigation of how First Nations envision civil society. Within the current First Nations’ context civil society is couched in terms of self-determination. The process of self-determination is reflective of responsive functional social capital. It is meant to develop institutions and programs that embody the aboriginal cultures and are responsive to the needs and goals of the aboriginal communities. Self-determination is the process of reclaiming nationhood, including

¹⁴ There are several other definitions of colonialism
strategies necessary for self-government (Warry, 1998). In light of the diversity of aboriginal communities, identifying objective indicators of self-determination requires a broad approach. This way, diversity can be inclusive rather than restrictive. Self-determination in general can be recognized by identifying aspects of aboriginal communities under aboriginal control. For the purposes of this research we will identify the results of self-determination processes as indicators of social capital. The results of self-determination include social institutions under aboriginal control, social programs that work to meet community needs and goals, and arrangements with others who recognize aboriginal sovereign control of social institutions.

Chandler and Lalonde (1998) and the BC PHO (2002) provide a contemporary example of how neglecting First Nations’ social capital negatively affects health. First Nations’ communities with higher levels of linkage social capital indicated by increased self-governance, cultural facilities, local ownership of police and fire fighting programs, advanced land claims, locally provided health care services, and community-based education services enjoy lower levels of youth suicide than their counterparts with ineffectual social capital (BC PHO, 2002; Chandler & Lalonde, 1998). The First Nations communities with higher levels of the above indicators must have a social interaction with the Canadian government that is responsive to their bonding and bridging social capital. Muntaner, Lynch, and Oates (1999) and Muntaner and Lynch (1999) detail the necessity of including class structures and political structures in the analysis of social capital’s effect on health. When it comes to determining the effectiveness of the First Nations’ social capital, key political structures include the colonial governance of Canada. Chandler and Lalonde’s (1998) research on First Nations youth suicide and the necessity of cultural continuity within social institutions demonstrates the utility of a detailed analysis of the social relations, including the influence of political structures. Although Chandler and Lalonde (1998) do not focus on social relations per se, their research does comment on the consequences of social capital. The consequences of linkage social capital within the First Nations communities are revealed in their ability to be self-determining, having direct control over social institutions within First Nation community’s. The greatest protective value among these indicators is self-governance (Chandler & Lalonde, 1998).

By identifying where aboriginal communities are pursuing self-determination strategies within social institutions we can add a level to health analysis that comments on the social relations between aboriginals and the Canadian government. The discussion resulting from this
analysis will identify a number of strategies being developed by aboriginals to improve their health. Identifying these strategies will facilitate the sharing of knowledge among aboriginal communities.

2.08 Health Transfer—A Renewed Relationship among the First Nations, Inuit, and the Canadian Government.

Health Canada’s First Nations and Inuit Health Branch (FNIHB) has a mandate that includes ensuring the availability of and access to health services as well as addressing inequities in health and disease threats in order to attain a level of health that is comparable to the general population of Canada in similar locations (FNIHB, 1999). The FNIHB has a mission to renew its relationship with the First Nations and the Inuit based on the direct transfer of health services and a refocused federal role in improving aboriginal health. In order to accomplish its mission, the FNIHB developed its health transfer process in collaboration with the First Nations and the Inuit.¹⁵ In 1989 the treasury board approved the transfer of Indian and Inuit health services from Health and Welfare Canada (now known as Health Canada) to First Nations’ and Inuit control, including authorities and resources. The specific mission of the FNIHB then shifted to increasing community participation in all aspects of health program delivery and administration.

To achieve its mandate, the FNIHB developed a process that attempts to increase community capacity by transferring knowledge to First Nations communities and territorial governments.¹⁶ The transfer of knowledge and capacity is meant to provide an environment in which health services may be sustainable. To facilitate the transfer of health services, any First Nations community with a mandate from their representatives, band governance, or tribal council may begin the process by first completing pre-transfer planning, then the bridging phase, and finally transfer implementation. These three stages are meant to increase community capacity while also extending the aboriginals’ role in the authority and resources associated with health care administration.

Health transfer is an attempt to increase the autonomy of the First Nations, a step towards self-governance by the FNIHB. First Nations’ control of services and resources as permitted by the health transfer is often depicted as a higher level of control than direct medical service branch

¹⁵ There is a debate surrounding the nature and extent of the consultation that informed the health transfer process.
¹⁶ Instead of individual communities assuming control over health services north of the 60th parallel, the FNIHB transferred authorities and resources to territorial governments.
delivery of programs, contribution agreements, and integrated community-based health services. However, it is a lower level of control than is envisioned by self-government.

Several guidelines are used in the processes of transferring health services. For instance, communities engaging in the transfer must offer mandatory programs including communicable disease control, environmental and occupational health and safety, and treatment services. The process of transfer was intended to be accomplished within the funding base prior to the transfer of services, but there are limited numbers of funding opportunities to increase capacity while maintaining health service delivery. Community-based programs can be under the full control of the First Nations, while second and third level services find First Nations control through coordination, consultation, and supervision. However, if an aboriginal community meets the standards and requirements of the Canadian government, it may transfer second and third level services as well. There are also many reporting guidelines that communities must meet on a regular basis. These guidelines are meant to ensure accountability and “the obligation to take and demonstrate responsibility for performance based on agreed expectations and within limits of budgets and existing authorities” (FNIHB, 1999).

Upon the completion of the health transfer process, the relationship between the First Nations community and the FNIHB changes to one in which the community’s role is to provide regular reports to the government for financial accountability and health status measurement. The FNIHB role’s is one of capacity building facilitation, information exchange, and participatory role fostering for the community. The goal of the health transfer is thus to develop sustainable aboriginal systems that are integrated with Canadian health systems and result in the equity of health status and accessibility of health resources.


Treaties are the broadest form of recognition, governing ownership of treaty settlement land, clear governance authorities, capital transfers, fiscal and tax structures, harvest agreements, revenue sharing, and cooperative management of off treaty settlement land. The British Columbia Treaty Commission has a mandate to develop a new relationship with the First Nations within British Columbia. This new relationship rejects the notion of title extinguishment, prefers government to government negotiations over litigation, and works within

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17 First Nations, as determined by the BCTC, must have elements of nationhood including shared identify, language, laws and customs, historical exercise of control over the territory, historical existence as a governing body, and a number of people able to negotiate and maintain a treaty.
the current constitution rather than seeking amendments or constitutional reform. The process of treaty making is a way of reconciling competing differences, and upon completion treaties with all their components are tools for creating prosperous and sustainable First Nations communities (BC Claims Task Force Report, 1991). In the words of Tsawwassen First Nations Chief Kim Baird (2004):

It's a toolbox, with some resources and money and jurisdiction to help us rebuild our community. It's going to take a treaty to give us the best set of tools to move beyond our current socio-economic conditions.

The treaty process has been received by the First Nations with heartfelt celebration and protests, enthusiasm for the greater recognition of the First Nations and caution (BC Claims Task Force Report, 1991).

There are seven common issues significant to the negotiation of the new relationship with the First Nations: 1) First Nations governance, 2) land, sea, and resources, 3) finances, 4) government services, 5) certainty, 6) possibilities for amendments, and 7) implementation. First Nations governance includes an explicit description of jurisdictional issues, powers, and responsibilities of the federal and provincial governments as well as who will exercise these powers and the delivery of services to constituents. Issues summarized as government services are similar to self-governance. Government services fall under four categories: resource management, economic development, justice services, and social development and human resources. The First Nations have a choice of providing government services directly, managing them jointly, or opting into provincial and federal programs. Changes in the government's responsibilities require a new fiscal relationship with the First Nations on such issues as taxation, royalties, licensing, and transfer of funds between governments (BCTC, 2004). Associated with new fiscal relationships is a financial component that is meant to recognize past use of land and resources and to provide capital for community and economic development. The financial component may be realized as cash payments, resource revenue sharing, or credit.

Land, sea, and resource issues are framed within a context in which the Canadian government exercised authority over First Nations traditional land without consent. First Nations treat the land as its stewards, who have a sacred trust to ensure its sustainability for future generations. Treaties must resolve ownership and jurisdiction over land, sea, and resources by identifying territories and resources that the First Nations own and exercise jurisdiction over,
coordinating resource management, and gauging the implications of changes to ownership and jurisdiction of land, sea, and resources (BCTC, 2004).

Clarity will create a level of confidence and understanding, thus facilitating constructive developments in political, social, and economic fields. Yet, clarity can only be achieved by stating each party’s rights, duties, and jurisdictions; it must also allow for flexibility, as circumstances change over time. To permit flexibility the parties must agree upon the topics considered for amendments. The final common issue for treaties is implementation during which agreements made prior to treaty settlement are in place and respected. Treaties may be realized through phased implementation, negotiation of single issue treaties, and a formal resolution process for disputes. These issues are common at negotiation tables, but it is each party’s responsibility to introduce any issue at the negotiation table which it views as significant to the new relationship (BCTC, 2004).

Treaty negotiation is preferred over litigation because litigation does not respect the government to government relationship that the parties are trying to establish. Litigation can inform negotiations but is not the foundation for a new relationship. A measure of the success of the treaty negotiation process is the number of court actions by the First Nations. Treaty negotiation is not perfect: the annual review notes the Canadian government’s lack of flexibility. Other comments about the treaty process include a positive review of resolving land title issues, but there is no comment regarding the parties’ ability to negotiate sea and resource issues or self-governance issues. In the end, the measure of a successful treaty will be determined by the First Nations communities and their ability to discern the level of recognition that is efficient in regaining control over their lives.

2.10 The Guide to Aboriginal Organizations and Services: Facilitating Relationships.

The Guide to Aboriginal Organizations and Services (GAOS) has been published by a variety of ministries in the British Columbia provincial government since 1992. The objective of this publication is to promote relationships between the provincial government and organizations and services identified in the GAOS (Ministry of Community Aboriginal and Women’s Services, 2003). Organizations and services are organized according to the type of service they provide or the aboriginal population they represent.

Each organization and service listed in the GAOS represents a segment of the aboriginal population and an interest of an aboriginal society. Some of the listings in the GAOS represent a
very specific segment of the aboriginal population. For instance the Prince George Métis Women’s Elder Society is included under the heading of Women’s Organizations. The GAOS also lists every band and tribal council in British Columbia. Other services and organizations identified in the GAOS include larger segments of the aboriginal population, including organizations that represent multiple aboriginal communities throughout BC (for example, the Union of British Columbia Indian Chiefs and the First Nations Summit Society). Organizations that have representation across Canada are also included in the GAOS. National organizations include the Assembly of First Nations and the National Aboriginal Veterans Association. The GAOS also includes federal programs that have offices within British Columbia, for instance the Aboriginal Human Resources Development Association. Each organization and service listed in the GAOS represents a segment of the aboriginal population, and many of them represent the same group but have different interests.

Several different aboriginal interests are represented in the GAOS, distinguished through the use of sub-titles. Some interests are very specific, for instance housing, family and youth, legal, health, human resource development, employment, job search and placement, education, business and development, arts and culture, resource development, and addiction organization and services. Other organizations and services have mandates that are population specific and include several interests. Métis services, treaty offices, women’s organizations, bands, and tribal councils, for example, generally target a specific population with interests that range from political representation to health service delivery, arts, and culture. Some organization and services target no specific aboriginal population and have general mandates. These organization and services include umbrella organizations.

The variety of interests and populations represented by the listings in the GAOS are as diverse as the aboriginal population of British Columbia. The GAOS does not indicate whether there exists a relationship between the services and organizations and the Canadian government, but all organizations are recognized as possible state partners. The organizations and services listed in the GAOS all have a mandate that is aboriginal-specific and are collectively owned by those who access or are members of the services and organizations.

2.11 Linkage social capital

Linkage social capital is defined as a relationship between a group and the government. Aboriginal groups develop relationships with the Canadian government primarily through
treaties and the delivery of social programs. Within British Columbia treaty negotiations are conducted by the British Columbia Treaty Commission (BCTC). BCTC negotiations include representatives from the federal and provincial governments and the First Nations. There are several negotiation tables; each table is for negotiation between the Canadian government and a specific First Nations community. The result of the BCTC process is a signed treaty increasing the First Nations' control over their social and physical environment. The level of control is determined by each First Nations community through negotiations with the Canadian government.

Health transfer is the foundation for a new relationship between the Canadian government and the First Nations with regards to the delivery of health services. Health transfer is not equivalent to a signed treaty, nor does it permit as much control. However, health transfer does increase First Nations' control over health services formerly administered by the First Nations Inuit Health Branch, a division of Health Canada. The organizations and services identified in the GAOS do not have a combined formal relationship with the Canadian government equivalent to a treaty or health transfer. Each organization and service may have a relationship with the Canadian government, but the GAOS does not explicitly state whether a working relationship exists. The GAOS is a tool to identify organizations and services that may participate in a relationship with the Canadian government. It is an indicator of social capital similar to union participation, associational membership, or participation in locally organized groups.

In order to develop linkage social capital the actors must recognize membership in a group as well as their needs and goals; they must then integrate their will and needs directly into the resulting resource. Not all relationships between the state and community groups produce linkage social capital. Targeting specific populations without effectively integrating their will and goals in the production of a social program does not permit cultural continuity between the targeted population and the developed resource. Relationships that neglect to include the targeted population in the production of resources are tools of colonial governance. By effectively removing the native population from social development, these relationships marginalize the needs and goals of local communities in favour of the dominant group's will and goals. A group producing social programs for another group reinforces the will and goals of those who are
active in production and does not permit cultural continuity between the targeted population and the developed social program.

Interactions described in terms of *linkage social capital*, such as those between aboriginal organizations and the Canadian government, are different than those within and between communities. The participants and the ways in which participation develops are the key differences between *linkage social capital* and bonding and bridging social capital. The variables of trust, reciprocity, and norms of behaviour facilitate the leveraging of resources, developing responsive policies, and promoting common understandings. They require a relationship with the state in order to realize the needs and goals transmitted in these relationships. The social capital produced in interactions described by *linkage social capital* can be summarized as recognition and inclusion. The indicators utilized to measure bonding and bridging social capital, questions on trusting others, union, professional association, and interest group membership, among others, do not adequately measure relationships between native communities and the state. Indicators of social capital measure associations and norms of behaviour between individuals and groups but do not indicate whether these behaviours are recognized and included in relationships with the state.

By recognizing and including aboriginal groups in the development of social programs the government allows the First Nations access to their culture and creates a better chance of this culture being integrated into the resulting resource. When aboriginals are only recognized and not included in resource development, their culture is marginalized in favour of the culture of the dominant group that is actively integrated into resource development. This lack of connection between social program development and those accessing the programs is the foundation of colonial governance.

2.12 Aboriginal Well-Being

This research project attempts to improve aboriginal health analysis by contextualizing homogenous indicators of race or ethnicity, describing the extent of aboriginal participation in social development, and identifying elements of state/aboriginal relationships as social determinants of aboriginal health. The contextualization of the homogenous indicators of race or ethnicity utilized to describe the indigenous people of Canada reveals that these are constructs of the Canadian government used to determine when and with whom relationships are developed. These racial indicators inform policy that determines the nature of aboriginal participation in
social development. By investigating current relationships between the state and aboriginals we will be able to identify elements of these relationships that may account for variations in health status between aboriginals in different health service delivery areas of British Columbia.

A review of health and social determinants of health will demonstrate the variations in well-being between the aboriginal populations and the general population. Variations in well-being are demonstrated by mortality, morbidity, and social determinants of health indicators. Well-being is determined by health status, indicated by mortality and morbidity statistics as well as ecological contexts, indicated by the social determinants of health. Variations in health status between aboriginal groups and the general population are identifiable across social characteristics and exist independent of education, income, and employment indicators. Another identifiable social characteristic is that the social relationships with the state in which aboriginal groups participate. Indicators of these relationships are not currently included in the aboriginal health analysis and may account for variations in health status between aboriginal groups and the general population.

2.13 Surveys

Aboriginal health and social determinants of health indicators are collected by the federal and provincial governments as well as aboriginal organizations. The Report of the Royal Commission on Aboriginal People (RRCAP) is a comprehensive investigation of the health and social status of aboriginals published by the federal government in 1966. The federal government of Canada also published the *Aboriginal Peoples Survey (APS) 2001–Initial Findings: Well-being of the non-reserve Aboriginal Population* (2003) and *A Statistical Profile on the Health of First Nations in Canada* (First Nations Inuit Health Branch, 2003). Aboriginal organizations also collect health and social determinant indicators. The FNIRHSSC\(^\text{18}\) (1999) is conducted by First Nations communities in participation with provincial First Nations organizations. In British Columbia the First Nations Chiefs Summit Health Committee (BCFNCHC) is the organization that facilitates the implementation of the BCFNCHC (2000) in First Nations communities. Within British Columbia the mortality rate of First Nations members is recorded by the Ministry of Health Services, British Columbia Vital Statistics Agency. These statistics include causes of death, life expectancy, birth related statistics, infant mortality, and population estimates.

\(^{18}\) The FNIRHS is now called the First Nations Regional Longitudinal Health Survey. The Inuit are pursuing their own health surveillance.
The RRCAP (1996) is a comprehensive investigation of the relationships between aboriginals, the Canadian government, and Canadian society in general (RRCAP, 1996). The term relationship is used figuratively here to identify facets of aboriginal society in relation to Canadian society, including health status, constitutional recognition, land-based questions, policies, self-governance, historical relations, specific issues of concern to aboriginals, the Indian Act, economic, justice, and cultural issues, and the role and position of aboriginal elders, women, and youth (RRCAP, 1996). The RRCAP (1996) began in 1991 and ended in 1996. It utilizes a variety of data sources¹⁹ to demonstrate the social, environmental, and individual living conditions of aboriginal populations across Canada.

The FNIRHSSC (1999) is a concerted attempt to document First Nations health status by the First Nations themselves. This investigation includes epidemiological and social determinants of health as well as measures developed by the First Nations. This survey is meant to be reflective of First Nations’ conceptualization of health. To this end, the survey includes measurements that are specific to First Nations communities (BCFNCHC, 2000). The FNIRHSSC (1999) was developed in order for the First Nations to own, control, access, and possess health information necessary to inform culturally appropriate health care. It also addressed the gaps in research conducted by the federal government.

The Aboriginal People’s Survey (APS) was conducted in 2001 to investigate the well-being of aboriginals “living in non-reserve areas of Canada” (p. 7). Populations under investigation included Métis, Inuit, and North American Indians who at the time of the survey did not live on a reserve.²⁰ The APS (2001) documents the health status, medical care utilization rates, environmental influences, and social determinants of health in order to assess the well-being of aboriginals not living on reserves. The APS (2001) is conducted alongside the regular census every 10 years.

The A Statistical Profile on the Health of First Nations in Canada (FNIHB) (2003) investigates the well-being of First Nations on Canada’s reserves. This investigation includes physical and “non-medical determinants” of health (FNIHB, 2003, p. 8). Physical determinants include morbidity and mortality rates, demographic information including life expectancy, population distributions, pre and neo-natal indicators of health, hospital utilization rates, dental

¹⁹ Data sources included statistics collected by the government of Canada, studies commissioned specifically for the RRCAP, and research conducted by independent investigators.
²⁰ A reserve is a piece of land that is held in trust by the Canadian government for the Status Indians who live there.
health, and rates of drug and alcohol abuse. Non-medical determinants of health include education and labour force participation, employment and unemployment rates, housing and infrastructure indices, community isolation levels, and spoken languages (FNIHB, 2003, p. 8). The FNIHB (2003) is an occasional report with no fixed implementation dates.

The BCFNCHC (2000) consisted of two distinct endeavours. Its first phase included focus group interviews and was conducted with 500 people in seven communities across three different geo-cultural regions of British Columbia: the northern interior, the southern interior and coastal regions. The interviews were conducted to include their own local questions in the main survey (BCFNCHC, 2000). The second phase was the implementation of the developed survey. This phase included 2,579 participants, including 595 surveys for children from 16 communities in the same regions. The First Nations Regional Longitudinal Health Survey (FNRLHS) is conducted every 10 years, with the 2003-2004 survey released in February 2004 (BCFNCHC, personal communication).

The British Columbia Provincial Health Officers Report (2002) also collects and summarizes health status of Aboriginals utilizes data sources collected from various research endeavours. The report was developed over a two-year period, with input and assistance from the Provincial Aboriginal Health Services Strategy Steering Committee, other Aboriginal groups and organizations, and others involved in the Aboriginal health field. This report included sixty indicators of health status, social and physical environments, growth and development, health services, and disease and injury prevention. The BC PHO (2002) notes that many of the collected statistics pertain to Status Indians only, as Non-Status Indians, Métis, and Inuit are often not included in reporting procedures. The BC PHO (2002) is conducted yearly, but aboriginal health is only occasionally reported separately. The BC PHO (2002) ranks each health region according to the health and socio-economic status of its aboriginal residents. The health ranking is based on five health status measures, including infant mortality, life expectancy of men and women, and potential years of life lost rate (natural causes, external causes, all causes). Rankings are based on data in Regional Analysis of Health Statistics for Status Indians in British Columbia 1991-1999. BC Vital Statistics Agency, July 2001. Scores are
calculated based on a formula that considers how much each region differs from the median value. (BC PHO, 2002, p. 30)

Seven indicators of employment, income, and educational attainment were utilized in the BC PHO ranking of aboriginal socio-economic status.

The BC PHO (2002) health status ranking may have several limitations, including the fact that variations in health are constructed. Ranking health regions by health status does not give an accurate account of variations in health. By ranking health regions, variations are purposefully developed, and they do not accurately reflect the nature or the extent of health variations. For instance, variations may be prominent in specific indicators, age ranges, or genders.

2.14 Health Analysis

Health statistics for the aboriginal population are commonly compared to those of the general population of Canada. These comparisons are made at the national and provincial levels and usually include statistics for each of the groups that comprise the total aboriginal population. Aboriginal health status is also compared within native communities. These comparisons include Status, Non-Status Indians, Inuit, and Métis populations. A distinction between regions of residence is occasionally included, distinguishing between rural, urban, and on or off-reserve aboriginals. The BC PHO (2002) compares health and social determinants of health indicators of the aboriginal population between the different health regions, while the BCFNCHC (2000) compares First Nations health between three geo-cultural boundaries.

These surveys are compilations of statistical information from various sources. Environmental health and communicable disease statistics are collected from First Nations communities, both reserves and bands\(^{21}\) (FNIHB, 2003); health indicators are compiled from records collected by the medical services branch, hospitals, doctors (APS, 2001; BC PHO, 2002; FNIHB, 2003) and the people themselves (BCFNCHC, 2000; FNIRHSSC, 1999). Most First Nations (Status Indians) and Inuit members are identifiable by their unique health care card numbers. Information about Métis or Non-Status Indians, as well as the location of residence, is often not collected with medical records. Therefore, the health of these populations is assessed sporadically, and when it is collected, changes in data collection methods and indicators are common, making longitudinal analysis impossible. The review of aboriginal health will

\(^{21}\) Bands may include a number of different reserves that share the same political structure, a colonial construction.
demonstrate the variations in health status between aboriginal groups and the general population of Canada. Variations in health status between aboriginal groups is distributed across definable social characteristics, including income, education, and employment.

Indicators of population health include measures of mortality and morbidity, self-rated health status, and mental health. The social determinants of health measure ecological variations of populations in an attempt to explain variance in health status between populations. Social determinants of health include educational attainment, employment rates, unemployment rates, labour force participation rates, income assistance rates, income level, and housing levels. For the purposes of this review the statistics reported are those that demonstrate an inequity in health between and within the aboriginal peoples and the general population. The noted surveys provide statistics that include gender and age related variations. The purpose of this paper is to demonstrate variations in health status between aboriginal populations and the general population and between the various groups comprising the aboriginal population. I will thus focus on comparisons that demonstrate these differences in health. Highlighting variations in health attests to the importance of relationships between aboriginal groups and the state, since each group has a different relationship with the Canadian government.

2.15 Health Status Indicators

Mortality

Life expectancy and standardized mortality for each aboriginal group is different from those of the general population. Generally speaking, First Nations on reserves die at a younger age than First Nations off reserves, Inuit, Métis, and the general population. Standardized mortality rates for cause-specific deaths indicate that the leading cause of death is injury. They also reveal that higher rates of death among aboriginals on reserves can be attributed to endocrine, immune, and digestive diseases. Variations in mortality between aboriginal groups and the general population are consistent across identifiable social characteristics made apparent through the classification of indigenous groups in Canada. The most evident social characteristic is the ethnic distinction between indigenous groups. However inappropriate, ethnic classifications are not reflective of the diversity of the indigenous population.

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22 The collection of health statistics for the aboriginal populations has been sparse and inconsistent to say the least. The FNIRHS is the first effort to collect longitudinal health data for the First Nations population. It was developed to address shortfalls in the collection of population health statistics by the governments of Canada.
Life expectancy at birth is a common indicator of a population’s health; it is an estimate of the average number of years a person is expected to live based on mortality statistics. Aboriginal life expectancy has increased over the last 30 years. In 1978-81, the life expectancy for a male Registered Indian$^{23}$ was 61.6 years, while in 1990 this life expectancy increased to 66.9 years. A female Registered Indian’s life expectancy increased from 69.0 years to 74.0 years over the same time period. In 1991, an aboriginal male could expect to live 67.9 years and a female 75.0 years (RRCAP, 1996). In 2000, a male and a female of the First Nations descent living on a reserve could be expected to live 68.9 and 76.6 years, respectively. (see Table 1). In contrast, a male of the general population$^{24}$ during 1978-81 saw his life expectancy increase from 71.0 to 73.9 years. A female could also expect to live longer than a Status Indian female, with life expectancy increasing from 79.2 in 1978 to 80.5 years in 1981 (RRCAP, 1996) (see Table 2). In 1991 the life expectancy of a male in the general population increased to 74.6 years and of a female to 80.9 years (RRCAP, 1996). In 2000, a male and female of the general population enjoyed the life expectancy of 76.3 and 81.8 years, respectively (FNIHB, 2003). Increases in life expectancy among the aboriginal population have been matched by increases in the general population, but the aboriginal population still has a lower life expectancy than their peers in the general population. Between 1996 and 2000 Status Indian males in British Columbia could expect to live 8.2 years less than a male in the general population, while a female Status Indian could expect to live 6.7 years less than her general population counterpart (BC PHO, 2002). In 1991, the Status Indian mortality rate was twice the provincial average. By the year 2000, the rate was less than 1.5 times that of the general population (BCFNCHC, 2000). Overall, the life expectancy gap between aboriginal groups and the general population of Canada is decreasing.

Standardized mortality rates report the number of deaths due to specific causes, usually expressed as a rate per 100,000 people. The RRCAP (1996) notes that as compared to the general population, Registered Indians have comparable mortality rates caused by respiratory and infectious diseases, lower mortality rates caused by cancers and circulatory diseases, and disturbingly high mortality rates caused by injuries and other diseases for both male and female (see Table 3). The FNIHB (2003) reports similar findings for First Nations people living on reserves. Age-standardized mortality rates for endocrine, immune, and digestive diseases were

$^{23}$ Also known as Status Indians.
$^{24}$ The general population, as compared to the Registered or Status Indians, includes the Métis, Inuit, and Non-Status population.
higher among the aboriginal on-reserve populations than the general population, but lower for cancers and circulatory diseases. The RRCAP (1996) reports a decline in deaths due to injuries and circulatory diseases, but increases in cancers and respiratory diseases between 1982 and 1992. The BC PHO (2002) notes that mortality due to HIV/AIDS among Status Indians in British Columbia has increased during 1991-2000, while the mortality rates due to HIV/AIDS in the general population has decreased over the same time period.

Injury is the leading cause of death within the aboriginal population of Canada, much higher than for the general population (BC PHO, 2002; FNIHB, 2003; RRCAP, 1996). Injury is a broad category that includes accidental falls, motor vehicle accidents\(^\text{25}\), homicides, fire, drowning, poisoning, and suicide. Motor vehicle accidents are the most common cause of death by injury for aboriginals, followed by suicide, poisoning, drowning, homicide, fire, and accidental falls. Each cause of injury is higher among male and female Registered Indians than their counterparts in the general population (RRCAP, 1996) (see Table 4). Status Indians in British Columbia were more likely to die from an injury than Status Indians in Manitoba (117/100,000) and Saskatchewan (142/100,000) (FNIHB, 1999b). The BC PHO (2002) notes that suicide and unintentional injuries among Status Indians within British Columbia during 1991-2000 decreased, but remained higher than in the general population over the same time period. Drug induced deaths among the Status Indian population in British Columbia have shown a small decrease during 1991-2000 but remain much higher than in the general population of British Columbians. The SPFNHC (2003) states that injury is accountable for 4,909 potential years of life lost among the First Nations, and 1,271 potential years of life lost for the general population, a difference of 3,638 years.

Variations in absolute mortality rates and cause-specific mortality between aboriginals and the general population and between Status Indians, Non-Status Indians, Métis, and Inuit are likely due to environmental differences between populations. Location of residence, whether on or off reserve, is indicative of these ecological differences. Although this determinant of health indicates a variation between populations, it does not define what element of living on or off reserves that permits greater equity in health. Although mortality statistics for aboriginal populations are limited, available data indicate several variations between the groups comprising

\(^{25}\) Motor vehicle accidents, and other injury related deaths should be reported in a more precise manner as several accidents may be the result of suicide ideation.
the entire aboriginal population and the general population. The terminology used (regardless of how inappropriate) used to distinguish the indigenous people of Canada from the general population is an identifiable social characteristic obvious from the variations in mortality statistics. The terminology that identifies the aboriginal populations serves the Canadian governments to distinguish between policies aimed at different groups. How these relationships differ may explain variations in mortality between these populations.

**Morbidity**

Rates of morbidity include statistics on a variety of diseases, including infectious diseases, chronic diseases, disability, mental health, and, as a general indicator, self-rated health status. The majority of morbidity statistics demonstrate an inequity in health between the aboriginal population and the general population. First Nations, Métis, Inuit, and off-reserve aboriginals all report different morbidity rates between groups, with the general population of Canada, and in British Columbia between their respective regional cohorts. These variations in morbidity rates identify a population that suffers a disproportionate burden of ill health and are necessary to identifying populations at risk, preventative measures, and primary care needs.

Historically, infectious diseases were the leading cause of death among the aboriginal population. Smallpox, measles, mumps, rubella, tuberculosis, and whooping cough (pertussis) decimated many aboriginal communities. The spread of infectious diseases was fostered by the imposition of residential schools and reserve allotments. Residential schools provided an environment conducive to the spread of tuberculosis and other infectious diseases. Children often returned home infected due to lack of health care provision, only to infect others in their communities. Reserve allotments limited housing development to the extent that encouraged overcrowding, and close contact within a household ensured a rapid spread of infectious diseases (RRCAP, 1996).

It is vital to report infectious diseases in order to control their spread. First Nations communities report a number of infectious diseases, including diseases preventable through routine vaccination such as measles, mumps, pertussis, and rubella. Pertussis is the most prevalent of preventable diseases in First Nations communities, with the infection rate of 57.6/100,000, an incidence much higher than the general population's 20.0/100,000 (FNIHB, 2003). Genital Chlamydia and hepatitis C are blood borne and sexually transmitted diseases also frequently reported in aboriginal communities. The First Nations population far exceeds the
general population when it comes to the incidence and prevalence of genital Chlamydia, but is comparable for hepatitis C. Enteric, food, and water borne diseases are much more prevalent among the First Nations populations than the general population: giardiasis, hepatitis A, and shigellosis are more common in First Nations communities than the general population. When it comes to 11 reportable infectious diseases, the First Nations exceed the general population in the prevalence rate on seven indicators. HIV/AIDS is also more prevalent in the First Nations population than in the general population. Before 1990 aboriginals accounted for 1% of the all HIV/AIDS cases in Canada, but in 2001 they accounted for 7.2% of all HIV/AIDS diagnoses (FNIHB, 2003).

The rate of tuberculosis infection, once a great threat to aboriginal life, has decreased substantially, to the point where its incidence and prevalence is comparable to the general Canadian population. From 1961 to 1965 over 200/100,000 Status Indians and almost 1600/100,000 Inuit suffered from tuberculosis, while in the general population the incidence of tuberculosis was below 50/100,000 for the same years (RRCAP, 1996). In 1993 the tuberculosis incidence rate for the entire aboriginal population was 35.7/100,000, with the First Nations leading the incidence rate at 47.2/100,000. The incidence rate for the general population of Canada for the same time period was 6.9/100,000. Foreign-born citizens accounted for a higher incidence rate in the general population: non-aboriginal Canadian-born citizens had an incidence of 2.2/100,000, while foreign-born citizens had an incidence of 22.2/100,000 (FNIHB, 2003). In British Columbia the prevalence of tuberculosis among Status Indians is comparable to that among foreign-born residents, which is three times the rate of the general population. Tuberculosis is most prevalent in Vancouver’s Downtown Eastside Status Indian population (BC PHO, 2002).

The Aboriginal Peoples Survey (2001) notes that 45% of the off-reserve population aged 15 or older has a condition that had or will last longer than six months. The FNIRHSSC (1999) notes that all reported chronic conditions are profoundly more serious than in the general population of Canada. Chronic conditions such as diabetes, arthritis, high blood pressure, respiratory problems, heart disease, and cancer are more prevalent among First Nations in British Columbia than the general population (BCFNCHC, 2000). Chronic conditions are of special concern due to the duration of treatment and the sufferers’ quality of life. In British Columbia 11.3% of First Nations report being diagnosed with a chronic condition.
Diabetes is a chronic condition that is a concern for many aboriginals. The incidence rate for diabetes is higher among aboriginals than the general population of Canada. Over 4% of the general population of Canada report having diabetes. Eleven percent of the First Nations and Labrador Inuit males and 16% of the females have been diagnosed with diabetes, as compared to 3% of males and females in the general population (FNIRHSSC, 1999). In addition, 7% of aboriginals off reserves, 8.3% of Registered Indians aged 15 and older, 6% of the Métis, and 2.3% of the Inuit reported having diabetes (APS, 2001). Four percent of the status Indian population of British Columbia have been diagnosed with diabetes, as compared to the 3% of the general population (BCFNCHC, 2000). The FNIHB (2003) states that Status Indians in BC have three times the hospitalization rate of the general population for diabetes, while the Status Indian population of Canada has twice the hospitalization rate. In 1987, 1.4% of male and 1.8% of female First Nations members in British Columbia reported having diabetes, which at the time was lower than the national average (RRCAP, 1996).

Arthritis (or rheumatism) is the most reported chronic condition in the aboriginal population of Canada (APS, 2001). Eighteen percent of females and 10% of males in the general population were diagnosed with arthritis, as compared to 27% of females and 18% of males in the First Nations and Labrador Inuit population (FNIHB, 1999b; FNIRHSSC, 1999). The aboriginal off-reserve population also has a higher prevalence of arthritis than the general population, with 19.3% reporting being diagnosed with this disease; the APS (2001) notes that only 11% of the general population have arthritis. Fourteen percent of the general population of British Columbia and 23% of the First Nations population in BC reported being diagnosed with arthritis. Age-adjusted rates of arthritis in British Columbia have been developed to present a more accurate picture of its prevalence. These rates indicate that arthritis is more prevalent among First Nations in BC than the general population, 17% as compared to 5% (BC PHO, 2002). Arthritis is most prevalent among BC First Nations in the southern interior, as opposed to the northern interior or coastal regions (BCFNCHC, 2000).

High blood pressure or hypertension is another chronic condition that is more often reported by aboriginals than the general population of Canada and BC. In 1997, Young et al. (in FNIRHSSC, 1999) reported that the prevalence of high blood pressure was 2.8 and 2.5 times

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26 The prevalence of arthritis is age-adjusted, including only people aged 15 and older. This may explain the differences reported by the 2nd diagnostic, FNIRHS, and the APS. The APS also includes the Status Indian population in the general population figures.
more in males and females, respectively, of the First Nations and Inuit population than the general population of Canada (FNIRHSSC, 1999). Twelve percent of the off-reserve aboriginals and 8.7% of the total population reported being diagnosed with high blood pressure (APS, 2001). Age-adjusted rates for hypertension among First Nations and Labrador Inuit were 22% for males and 25% for females, as compared to 8% and 10%, respectively, for the general population (FNIHB, 1999b; FNIRHSSC, 1999). In 2000, 10% of the general population of BC reported being diagnosed with high blood pressure (BC PHO, 2002), an increase of 3% from 1997 (BC PHO, 2000). In 1997, 17% of the First Nations members were diagnosed with high blood pressure (BC PHO, 2002), and by 2000 the prevalence of high blood pressure increased to 19.2% among the First Nations members in BC (BCFNCHC, 2000). Nineteen percent of First Nations in the northern interior and coastal regions reported having high blood pressure, as compared to 20% in the southern interior.

Respiratory problems include asthma, bronchitis, pneumonia, chronic obstructive lung disease, influenza, and allergies, although not all statistics on respiratory diseases include each disease. Diseases of the respiratory system were the number one reason for the First Nations’ accessing health care services in Canada (FNIHB, 1999b). Children of aboriginal decent living off reserves reported allergies, asthma, and ear infections as the most prevalent chronic conditions (APS, 2001). Among the First Nations in British Columbia 10.1% reported having asthma and 13.6% reported breathing problems diagnosed by a physician (BCFNCHC, 2000). Breathing problems were more prevalent among First Nations in the southern interior than in the coastal or northern interior regions. First Nations in the southern interior and the coastal region reported higher rates of asthma than those in the northern interior, 11% and 7.6%, respectively.

Heart problems or diseases are also more prevalent among the aboriginal population than the general population. For every person in the general population of Canada with a heart problem, there are three First Nations members with a similar affliction (FNIRHSSC, 1999). Thirteen percent of male and 10% of female First Nations members and Labrador Inuit reported having a diagnosed heart problem, as compared to 4% for both males and females in the general population (FNIHB, 1999b; FNIRHSSC, 1999). The APS (2001) notes that the Métis are more likely to have a heart problem than American Indians or Inuit who live off reserves, 6.8%, 6.5%, and 4.8%, respectively. In 2001 in British Columbia, 9% of the First Nations members had a heart disease diagnosis, while only 1% of the general population suffer the same fate (BC PHO,
Three years later, 10% of the First Nations members in British Columbia reported having a heart problem (BCFNCHC, 2000). Heart problems are more prevalent among First Nations living in the southern interior of British Columbia than in the coastal and northern interior regions.

Cancers account for a small portion of all chronic diseases among the aboriginal population of Canada. The FNIRHSSC (1999) notes how for every one person with cancer in the general population, there are two First Nations members or Labrador Inuit males and 1.6 females diagnosed with cancer. Yet, First Nations on reserves in British Columbia, Saskatchewan, and Manitoba have fewer hospitalizations for cancer than the general population (FNIHB, 1999b). One percent of the general population of British Columbia report being diagnosed with cancer (BC PHO, 2002). The most prevalent types of cancer include lung cancer, colorectal and prostate cancer, and breast cancer, which increased in the First Nations population over the years and are nearing the general population’s rate of prevalence (FNIHB, 1999b). The BCFNCHC (2000) notes those reporting chronic conditions, 2.8% were diagnosed with cancer. First Nations in the southern interior and coastal regions of British Columbia have higher rates of cancer than those in the northern interior.

Self-rated health status is an accurate indicator of general health status. Survey respondents can rate their health by indicating their perceived health status as excellent to good or as fair to poor. People’s perception of their own health provides an overall measure of well-being and is often similar to the results obtained through other measures (BC PHO, 2002). Self-rated health status is also meant to indicate positive health rather than just the absence of disease (APS, 2001). In 2001, 56% of aboriginals living off reserves rated their health as excellent, 26% reported good health, and 17% reported poor health (APS, 2001). The APS (2001) notes the general population of Canada report their health to be excellent to good more than the aboriginal off-reserve population. Sixteen percent of First Nations males in British Columbia report their health as excellent, as compared to 28% of the male general population. Self-rated health status for First Nations women in British Columbia was also lower than that of females in the general population, 11% and 24%, respectively (BCFNCHC, 2000).

Disability is also an important indicator when developing health care programs. Disability can include hearing impairments, mobility limitations, sight, agility, and speaking disabilities among others. All aboriginal populations have a higher prevalence of disability than
the general population of Canada. The First Nations members living on reserves report the highest prevalence, with little difference between Métis, Inuit, off-reserve, and total aboriginal and First Nations populations (RRCAP, 1996). In the 1991, the off-reserve population was twice more likely to have a disability than the general population of Canada, with 31% of those surveyed reporting a disability (RRCAP, 1996). The most common disability reported by the FNIRHSSC (1999) was mobility, followed by the broad category of “other,” which included mental health and learning disabilities. This category was followed by hearing, agility, and finally speaking disabilities. Seventeen percent of respondents to the BCFNCHC (2000) reported having a hearing disability, the most prevalent disability. Coastal and northern interior regions of British Columbia have higher disability prevalence than the southern interior.

Mental health problems are often not diagnosed, and those with mental health problems are not accurately represented in health surveys (FNIRHSSC, 1999). The population affected with mental health disorders in health surveys is assumed to be a fraction of the actual population dealing with mental health issues. Mental health problems are reported in three ways:

1. Hospital admissions due to mental health disorders, collected from the hospital morbidity database;
2. Positive mental health, based upon self report of happiness, self-esteem, mastery, and sense of coherence as assessed by the National Population Health Survey (NPHS) conducted by Statistics Canada;
3. A series of questions meant to determine the probability that the survey respondent had a major depressive episode in the previous 12 months collected by the NPHS (BC PHO, 1999 Appendix, terms of reference).

Mental health disorders are a specific concern in aboriginal communities, because they are often associated with high suicide rates, drug and alcohol abuse, incarceration levels, crowded housing, and injuries. The FNIRHSSC (1999) notes how physical health is a good indicator of mental health and that the differences between male and female, urban and rural, and on or off reserve populations cannot be ignored. As indicated by disability prevalence rates, mental health is included in self-report surveys under the rubric of “other disabilities,” the “other” category being the second most reported disability after mobility impairment (FNIRHSSC, 1999).
2.16 Health Status Summary

Variations in mortality between aboriginals and the general population are reflected in morbidity statistics. First Nations on reserves have higher rates of disease (except for cancers) and disability than First Nations off-reserve, Non-Status Indians, Métis, Inuit, and the general population. The rates of specific diseases for each population may be higher or lower than those of other groups, and generally these variations allude to social characteristics that may account for variations in health status. The most apparent social characteristic is the relationship of each population with the state.

Reporting ethnicity on its own, without indication of important social determinants of health, does not allow adequate information to inform policy and health care development (Culley, 1996). Analyses of aboriginal morbidity and mortality rates only identify populations at risk; they do not indicate what determines the variations in statistics. Variations in health between populations is a major focus of social epidemiology, which aims at incorporating social experiences as more direct causes of disease and disability (Berkman & Kawachi, 2000). Indicators commonly collected to explain variations in health between populations include income levels, labour force participation, employment and unemployment levels, education, area of residence, and social relationships. These indicators are collected from aboriginal population in the NHPS, FNIRHSSC (1999), BCFNCHC (2000), APS (2001), regular census data, and Indian and Northern Affairs Canada, Provincial Health Officers, and aboriginal organizations.27

2.17 Social Determinants of Health

Social determinants of health attempt to explain variations in health status between populations. Since health statistics began being collected, noticeable differences in social characteristics have been detected between populations' morbidity and mortality rates (Berkman & Kawachi, 2000). Attempting to explain these variations in health between populations by noting differences in personal behaviour does not work (Mustard & Frank, 1994). The population health approach advocates research that identifies social determinants of health to explain variations in health status and answer "why these differences are systematically distributed across identifiable social characteristics" (Hayes, 1994, p. 1). Health, disease, and mortality are largely determined by our interactions in the social environment. Population health

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27 The First Nations Chiefs' Health Committee implements the BCFNCHC, while the FNIRHS is organized nationally by the First Nations and Inuit Regional Health Survey Steering Committee of the National Aboriginal Health Organization.
has three primary influences: physical environment, social structure, and social relationships (Hayes, 1994). What we learn, where we work, and how we interact with our social, political, economic, and physical environments creates associational and causal relationships with our health. The population health approach identifies social structures that are different between populations. Identifying different social characteristics between populations is not meant to impose social characteristics of a healthy population onto an unhealthy population. Identifying these social characteristics is useful when informing populations about possible links to explore and does not intend to apply generic solutions. In addition, identifying differences is necessary to inform policy makers and practitioners who work outside of the medical care system, where health is developed socially (CPHI, 2004). Social structures that determine health include, but are not limited to, relative income, employment opportunities, education levels, and relationships (social support, social capital). This line of inquiry has been adopted by many aboriginal health organizations.

As noted in the review of mortality and morbidity statistics, there are significant variations in health between aboriginal groups and the general population, as well as within and between First Nations, Métis, Inuit, and Non-Status Indians. The most notable and consistent variation reported in these statistics is between aboriginals and the general population of Canada. Within the aboriginal population, First Nations have worse health than off-reserve Status Indians, Métis, Inuit, and Non-Status Indians (FNIRHSSC, 1999). Variations in health also exist between aboriginal populations in different regions. The BC PHO (2002) and the BCFNCHC (2000) note that First Nations in the northern interior, southern interior, and coastal regions report variations in health status. Generally speaking, the First Nations members residing in the southern interior have poorer health than those living in the northern interior and coastal regions. These variations in health require further investigation to identify social characteristics that would permit greater future equity in health. To this end, the above-mentioned health surveys collect information on a number of different social determinants of health.

**Education**

A common social determinant of health is education level, which may determine health through multiple pathways. Higher levels of education increase employment opportunities, job stability, and wages. Education also improves individuals' health behaviours through exposure to health information and opportunities. Education as a social determinant of health is indicated by
the highest level of education attained: did not finish high school (completed Grades 0-9 and did not write Grade 12 provincial examinations), completed Grade 12 (wrote and passed provincial examinations for high school completion, necessary for enrolment in most post-secondary institutions), high school graduation, and graduation from a post secondary institute with a certificate, diploma, trade, undergraduate or graduate degree (BC PHO, 2002).

Education level among First Nations on reserves has shown a steady increase. In 1971, 13.5% of the First Nations population did not have any schooling, while in 1991 this percentage decreased to 5.0%. During the same time period, the percentage of the general population that did not have any schooling also decreased from 1.6% to 0.8%. Between 1971 and 1991, the percentage of on-reserve First Nations members aged 15 and older with university degrees increased from 2.3% to 7.4%. This increase was surpassed by the general population, where attainment of university degrees jumped from 10.8% to 20.8% in the same time period (Indian and Northern Affairs, 2000). In 1996, 26.3% of the Registered Indian population 15 years and older attended a trade or non-university program and 9.4% attended a university program, with 21.2% completing their training or studies. During the same time period 29.0% of the general population 15 years and older attended a trade or non-university program and 22.5% attended a university program, with 37% completing their training or studies.

In 1996, 22% of First Nations members on reserves (Hull, 1996) and 25% of the total First Nations population (APS, 2001) aged 15 and older received less than Grade 9 education, 34% had no Grade 12 certificate, and 20% completed a degree, certificate, or diploma program (Hull, 1996). Between 1991 and 1996, the high school completion rates of off-reserve North American Indians did not change, with the total of 52% completing high school (Aboriginal Peoples Survey, 2001). The North American Indian population living off reserves aged 25-44 with completed post secondary education rose from 34% in 1996 to 38% in 2001. During 1996, 11% of the general population had less than Grade 9 education, 22% had not finished secondary school, and 35% had completed a post secondary degree, certificate, or diploma. Off-reserve First Nations demonstrated a higher educational attainment than on-reserve First Nations, except under the heading of “non-university completion”. This difference, however, was minimal (Hull, 1996).

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28 Registered Indians on the reserve.
29 Includes Registered Indians, also known as Status Indians, and descendants of the indigenous populations of North America.
In 1996, 52% of the off-reserve aboriginal population aged 20-24 had completed secondary school; in 2001, 48% had attained the same level of education. In contrast, in 2001, 26% of the general population aged 20-24 had completed secondary school. Off-reserve aboriginals aged 20-64 had the highest percentage of members attending school, including the general population, with figures at 9% and 7%, respectively. In 1996, 34% of off-reserve aboriginals aged 25-44 had completed post secondary school, and in 2001 this number increased to 39%, with 55% of the general population doing the same (APS, 2001).

The percentage of the Inuit aged 20-24 with education lower than Grade 12 dropped between 1996 and 2001 from 66% to 59%, while during the same time period post-secondary completion rates increased from 30% to 32%. In 1996, 39% of the Inuit population had lower than Grade 9 education, and 47% of the Métis aged 20-24 had not completed Grade 12. In 2001 this number fell to 42%, and Métis increased post secondary completion rates from 35% to 42% over the same years (APS, 2001).

Sixty six percent of the on-reserve First Nations members in British Columbia completed Grade 11 or less, with the other one third of the population completing high school. Regional variations include 42% of on-reserve First Nations members in the southern interior completed high school, as compared to 33% in the northern interior and 28% in the coastal regions (BCFNCHC, 2000). The authors of the BCFNCHC (2000) suggest that these differences are due to different educational and job market opportunities across these regions.

Aboriginals are less educated than the general population, with different levels of education reported by each aboriginal group. Inuit have the lowest educational attainment than any other aboriginal group, as well as the smallest improvement in education levels over the past 40 years. First Nations on and off reserves have seen the greatest improvements in education, while the Métis population indicates a slightly higher educational attainment levels than their First Nations counterparts. While all aboriginal groups increased educational attainment, comparisons between these groups are difficult to make due to the lack of consistency between indicators and times when the data was collected. Generally speaking, increases in education among aboriginals have been matched by the general population (APS, 2001), while educational space for on-reserve First Nations members increased by 388,543 square metres between 1989/90 and 2001/02. The number of band-operated schools also increased from 280 in 1988/89 to 494 in 2001/02 (DIAND, 1998, 2002).
Educational attainment is positively correlated to health: the higher the education the better the health. When the aboriginal population is compared to the general population of Canada, the positive correlation between health and education is apparent. The correlation between health and education is also demonstrated within the aboriginal population. Inuit have lower health and education indicators than any other aboriginal group, followed by First Nations on and off reserves, Métis, and other aboriginals. The differences between aboriginal populations support research that attributes higher levels of educational to improved health status. However, upon closer examination of these populations, specifically aboriginals within British Columbia, the research demonstrating a positive correlation between health and education is not supported.

Among the First Nations population in British Columbia, the positive correlation between education and health is not readily apparent. The BC PHO (2002) and the BCFNCHC (2000) demonstrate that the First Nations communities in the northern interior and the coastal region have better health than their counterparts in the southern interior. Yet, the BCFNCHC (2000) also notes that First Nations in the southern interior have higher educational attainment than their cohorts in the north and coastal regions. What accounts for these variations bucking the positive correlation between health and education? To answer this question a closer examination of socio-economic indicators is required, along with an examination of health behaviours. The BCFNHRS (2002) suggest that educational and socio-economic demands of aboriginals in the northern and coastal regions are fundamentally different from those of aboriginals in the south. The BCFNHRS (2002) also suggests that northern and coastal regions are more reliant on traditional resource-based economies than on knowledge-based economies. First Nations in the northern and coastal regions do not require high levels of education to participate in the job market of their region. Therefore, the health of the First Nations members in the north and coastal regions are not positively correlated to knowledge-based indicators of education rather they maybe positively correlated with the skill-based indicators reflective of their socio-economic context.

**Income**

Wilkinson (1996) hypothesized that individual income determines health through exposure to and the alleviation of stress. He states that individuals with income low relative to others within their social context have a lower social status, which increases their stress and
decreases their ability to alleviate stress. The experienced stress is the result of one’s individual perception of self within one’s social context. Increased stress and inability to alleviate stress affects health through biological pathways associated with diseases of the heart and diabetes. Consistently high levels of stress and prolonged stress cause these pathways to be active for extended periods of time, resulting in higher incidence of disease. Moreover, individuals with low incomes experience greater stress because they perceive themselves to be subordinate to those with high incomes.

High income may positively influence health by exposing people to a variety of different resources. Increased income may permit greater variety and ability to access healthful influences. For example, a high wage may increase educational opportunities, access to health services, and opportunities for healthful behaviour. Population health research has demonstrated that relative income is a better predictor of health than absolute income. Relative income describes the differences between those who have the highest incomes and those who have the lowest incomes in a population. A high wage gap between the rich and poor may indicate a society that is unable to deliver health resources to the entire population, while populations with a low wage gap indicate greater equity in accessing health resources.

Income statistics are regularly collected for aboriginals in census data, identifying average individual income, labour force participation, and unemployment rates. Sources of income are also collected for First Nations and the general population, but are not reported specifically for Métis, Inuit, and North American Indians. Thus, the only possible comparison regarding income is between the First Nations and the general population. The source of income for Registered Indians is primarily wages. Transfer payments as a source of income for this population increased from 40.1% in 1990 to 44.9% in 1995. On-reserve First Nations report more income from transfer payments than off-reserve First Nations. Registered Indians’ annual average income from all sources increased from $11,941 in 1990 to $14,883 in 1995. The general population reporting transfer payments as their major source of income also increased from 15.7% in 1990 to 23.6% in 1995. The First Nations average individual income increased between 1990 and 1995 to 31.5% (Hull, 2000).

Wilkinson’s hypothesis is contested due to its focus on individual attributes, stress experience, social characteristics, and relative income. Wilkinson has substantially developed his body of work since the submission of this thesis, see Wilkinson, R. 2005. The Impact of Inequality: How to Make Sick Societies Healthier.

In other words, Non-Status Indians.

Average individual income is calculated according to 1992 dollar value to control for inflation increases.
Government transfers as a percentage of income is an indicator commonly collected by the federal government. The percentage of the population for whom government transfer payments constitute the majority of income appears to be correlated to the health and morbidity statistics. This correlation is demonstrated by the higher number of First Nations receiving government transfer payments as the major source of income as compared to other aboriginal groups and the general population. This pattern is also reflected in health and morbidity statistics, although women receive more income through transfer payments and have better health than their male cohorts in both the aboriginal and general population. More Registered on-reserve Indians receive government transfer payments as their major source of income (34.4%) than Registered off-reserve Indians (26.0% in CMAs and 23.8% in rural areas), other aboriginals (18.7% in CMAs and 21.7% in rural areas), and the general population of Canada (11.8% in CMAs and 16.6% in rural areas) (Hull, 2000) (see Table 5).

Labour force participation has not been demonstrated to be a determinant of health, but it is a common indicator collected by the federal government. This indicator does not follow the positive trend between health and education which states that high labour force participation equates to greater health. The Registered Indian population has the lowest labour force participation rate, (59.0%), as compared to the Inuit (65.8%), Métis (70.4%), other aboriginals (69.1%), and the general population of Canada (67.7%) (Indian and Northern Affairs, 2000). Labour force participation may not be positively correlated with health due to the socio-economic context. Working conditions and job stability are not reflected in the labour force participation indicator. The Inuit may thus have greater participation in the labour market that is less healthy and more unstable than other aboriginals (see Table 6).

Unemployment may negatively affect health through perception of social status and decreased accessibility to health related services due to a low income (Wilkinson, 1996). The aboriginal populations of Canada do not follow this trend, however. Métis, who are generally healthier than other aboriginals, have the second highest unemployment rate (19.1%) for those over 15 not attending school full time. Registered Indians, whose health is typically poorer than that of other aboriginals except the Inuit, have an unemployment rate of 17.7%, while the Inuit have an unemployment rate of 21.4%. Other aboriginals have an unemployment rate of 19.3%, while the general population is at 8.7% (Indian and Northern Affairs, 2000) (see Table 7).

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33 Census metropolitan area.
Employment rates are also said to determine population health: the higher the employment rate the better the health (Hayes, 1994). Employment may affect health through perceived social status and access to health services. When the aboriginal population is compared to the general population of Canada, this generalization holds true. The trend is also maintained when aboriginal groups are compared to each other. Registered Indians have the lowest employment rate of all aboriginal groups, 43.4%, as compared to 51.8% for the Inuit, 56.9% for the Métis, 55.8% for other aboriginals, and 61.8% for the general population of Canada (Indian and Northern Affairs, 2000) (see Table 8).

2.18 Summary

The health status of aboriginal populations is distributed across identifiable social characteristics. These social characteristics include education, income, and labour force participation indicators. Aboriginals have higher mortality and morbidity rates than the general population of Canada. They also make less money, have lower educational attainment indicators, and have a more precarious attachment to the job market than the general population. The health status of the Inuit, First Nations, Métis, and other aboriginals is also distributed across the same identifiable social characteristics. Beginning with the lowest health status and social determinant indicators, the aboriginal population is distributed in the following order: Inuit, First Nations, Métis, and other aboriginals. Although regional comparisons utilizing the same indicators within British Columbia do not demonstrate such connections between social determinant indicators and health indicators, these variations have been discerned across geographic regions. This leaves an important question: Is there an identifiable social characteristic that could explain these variations in health status?

Accurate representation is necessary throughout aboriginal health analysis. An uncritical application of health and social determinants of health indicators in policy and program production neglects many aspects of the aboriginal social context affecting health (Auer & Andersson, 2001; BCFNCHC, 2000; FNIRHS, 1999; O’Neil et al., 1998). The largest misrepresentation of the aboriginal population is the homogenized cultural indicators used to identify aboriginals. Aboriginals are a diverse group of people, and when homogenous cultural indicators are applied to this heterogeneous group the resulting description portrays all aboriginals as ill and disorganized (Auer & Andersson, 2001; O’Neil et al. 1998). This is akin to victim blaming, but at a level which only identifies the racial component of a community.
Kreiger, Williams, and Zierier (1999) note how instead of using simplistic notions of race, health analyses must provide descriptions of the social context. Aboriginal diversity is extensive; within British Columbia there are over 190 reserves, which encompass numerous language groups and a number of tribal councils. Obviously, social contexts vary between each aboriginal community.

Using health analyses tools that are not reflective of the aboriginal social context suppresses the "legitimate claims of aboriginal people for full participation in Canadian society" (O’Neil et al., 1998, p. 232). Current health analysis fails to incorporate social relationships that may affect health (historical examinations of aboriginal health have demonstrated how these social relationships affect their health status, cf. Lux, 2001; Kelm, 1998; RRCAP, 1996). Social relationships are vital to participation in society (Newton, 2001). The key assumption of contemporary health analysis is that aboriginals participate equally in the development of civil society equally with the general population. This disregards local social structures (i.e., economic and political structures) that influence the ability of aboriginal communities to form a society based upon their own goals and needs.

Aboriginal organizations and communities recognize the importance of incorporating standard epidemiological and social determinants of health indicators within health analyses for program development and resource allocation (O’Neil et al., 1998). Many have also stated the need for accurate and responsible research within aboriginal communities (Auer & Andersson, 2001; BCFNCHC, 2000; MacMillan et al., 1999; O’Neil et al., 1998). The development of analysis tools specifically for aboriginal communities addresses other related issues as well, including confidentiality, storage, handling, and report generation (Auer & Andersson, 2001). Data management issues have also been considered by the RRCAP (1996), FNIRHS, (1999), First Nations Centre, National Aboriginal Health Organization (2002), and BCFNCHC (2000). O’Neil et al. (1998) note the importance for aboriginals to create their own discourse on health analysis and thus shape a response to health issues of their communities.

O’Neil et al. (1998) and Auer and Andersson (2001) note many ways in which health analysis must be responsive to the aboriginal peoples. Community control of administration of funds, design of questions, training and subsequent employment of people as administrators of surveys, analysis and interviews, as well as the interpretation and dissemination of the findings are imperative for the success of health analysis (O’Neil et al., 1998). Auer and Andersson
(2001) note three necessary requirements of successful health analyses within First Nations communities:

1. Simplicity of data, necessary for effective collection and evaluation of information;
2. Acceptability, whereby data must be available and transparent so that it can lead to direct action; and
3. Timeliness, with data speaking to the current context, community, and stakeholders in a manner that permits action to be taken.

Accurate representation within aboriginal health analyses is imperative to ensuring ethical and responsive data. Aboriginal health analyses must include indicators that demonstrate the natives’ ability to participate equally within Canadian society. Incorporating indicators of social relationships between the aboriginal population and the Canadian government will identify whether the aboriginal communities are able to participate equally or whether the colonial governance of Canada continues to impede their equal participation in society.

This research project addresses the requirements for aboriginal health analyses in a number of different ways. First, the research appropriately contextualizes homogenous indicators, identifying them as Canadian government constructs utilized to determine where, when, and with whom relationships are developed. Second, the research contextualizes the current social structure by describing the extent of aboriginal participation in social development. Third, the research incorporates current aboriginal state relationships and indigenous theorizing on civic participation for the development of indicators resulting in data that are simplistic, acceptable, and timely.

The administrative requirements placed upon aboriginal health analyses are difficult to meet in this research project due to the requirements of doctoral research programs. Meeting the demands of developing a research program demonstrating the researcher’s competence as an individual investigator while meeting these criteria presents several complications, since academic requirements are often at odds with community-based research. For example, within academia ownership of data goes to those who hold copyright of the published material. The requirements for effective aboriginal health analyses are being addressed in contracts negotiated between communities and researchers. However, these communities are geographically and politically definable (cohesive), leaving one to question how those requirements are to be met in
marginalized aboriginal groups that are not directly affiliated with a politically or geographically defined community.34

34 Nearly half of the population reporting an aboriginal identity resides in urban areas. Those reporting an aboriginal identity are more mobile than their non-aboriginal counterparts, 22% and 14% respectively (Aboriginal peoples of Canada: A demographic profile. Retrieved on 21 June 2004, from http://www12.statcan.ca/english/census01/products/analytics/companion/abor/canada.cfm). How can a population that is not affiliated with a geographically and politically defined community participate in the development of its social context? The population base utilized in several government programs is not classified by First Nations membership but band residence. The government bases its relationship with the First Nations on recognized land bases, history, and political affiliations with various levels of governance. This is made obvious by the fact that there are few political organizations that represent urban aboriginal population at any level of governance.
Chapter 3

Method

3.01 Introduction

To describe variations in health between aboriginal populations in British Columbia utilizing the concept of linkage social capital, one requires a method of investigation that identifies the aboriginal organizations recognized by the state: the ways in which they are included in social program development, the by-products of these relationships, their ways in which they incorporate people's will and, the maintenance of service delivery. Methods utilized in bonding and bridging social capital investigations are not suited to investigations of linkage social capital. This is because bonding and bridging social capital indicators are constructed for the investigation of individuals within groups, not interactions between groups. Unlike interpersonal relationships, interactions between groups cannot be described as having individual traits such as trust, norms of behaviour, etc. Indicators of the relationships described by linkage social capital must be context-specific, identifying the particular attributes of the relationship under investigation. A method must be employed to appropriately identify the stock of linkage social capital held by aboriginal groups. While a survey of community based programs was distributed to every First Nations community in British Columbia (see Appendix), low response rates resulted in abandoning of survey data. Chandler and Lalonde's (1998) research has informed the current method employed to identify where linkage social capital may be developed. Because the aboriginal population of British Columbia is not a single homogenous group, identifying communities first requires identifying how aboriginal/state relationships draw boundaries. These boundaries are not definitive communities but geographic regions developed to include multiple communities in relationships that produce social programs (see Figures 1-4).

In order to identify how the state classifies aboriginal organizations and services one must examine documents that focus on the relationship between aboriginals and the state. However, most of these documents do not fit the criteria of linkage social capital, because they provide guidelines for social programs but are not active in their development. The constitution of Canada, the Charter of Rights and Freedoms, is an example of a document that includes discussions of the relationship between aboriginals and the state. This document may provide
recognition of aboriginals, but it does not actively produce or result in a social program (see Appendix D).

By investigating the appropriate level and arena of governance, where social programs are the result of interactions with aboriginal organizations and services, we can isolate relationships that meet the criteria of linkage social capital. Aboriginal identity is the primary factor in determining the level of governance (federal or provincial) and the arena (ministry) where relationships are developed to produce social programs. For instance, the Indian Act differentiates Indians from Inuit, and Métis. And beyond this the Métis’ point of contact with the Federal government is with the Federal Interlocutor for Métis and Non-Status Indians. How the Federal Government constructs these distinctions is problematic, not only in the fact that they do not respect the diversity of Canada’s Indigenous populations but also in their application to policy, program and statistical development.

All aboriginals are recognized by the constitution of Canada, but this recognition does not result in inclusion of all aboriginal groups in social program development. For example, First Nations recognized as Status Indians are actively engaged in self-governance, land claims processes, and health transfer with the federal and provincial governments, all of which result in social programs. In contrast, Non-Status, off-reserve, and Métis aboriginals are excluded from these relationships. The aboriginal groups that are not included in the Indian Act must produce social programs in collaboration with the provincial government, unlike some First Nations communities that have agreements with the federal government to implement specific programs that are normally delivered by the provincial governments. For example, First Nations south of the 60th parallel are permitted to enter a relationship with the federal government to develop health transfer, resulting in joint health service delivery with provincial health services and organizations. Aboriginal groups not included in the Indian Act do not participate in relationships with the federal government to produce social programs; rather, the provincial governments assume this responsibility.

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35 Aboriginals and the state participate in other relationships that produce social programs, but these relationships are either still in the developmental stage or are negotiated with individual First Nations.
36 While some groups may be included in these relationships, their inclusion is determined during negotiations with each specific group.
37 There are negotiations currently underway with the Federal Interlocutor for Métis and Non-Status Indians and other Federal and Provincial representatives to change what Aboriginal populations have points of contact with the federal government.
Aboriginal state relationships are developed to produce social programs at the federal and provincial levels of governance but not in every ministry (arena). The Guide to Aboriginal Organizations and Services (GAOS) (1999) will be utilized to identify possible relationships between aboriginals and the provincial government. Relationships between First Nations communities and the state will also be identified by noting the level of self-governance indicated by participation in the British Columbia Treaty Commission Process as well as participation in health transfer. These may represent only a segment of the relationship between the state and aboriginals, but they will provide an indication of the extent of recognition and inclusion in civil society development.

The health status of First Nations in each health service delivery (HSDA) area will be indicated by life expectancy, ages standardized mortality rates (ASMR) for the 15 leading causes of death, and potential years of life lost due to external causes (PYLL). This data was collected by the British Columbia Vital Statistics Agency. These health indicators are for any

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38 The extent of recognition and inclusion is meant to indicate the depth of relationship. Admittedly, there is also breadth to these relationships, which would describe associational density. Extent is meant to measure the overall participation of aboriginals in relationships with the state, a general indicator of linkage social capital.

39 Life expectancy is defined by the BC provincial health officer (2002, pg 155) as: An estimate of the average number of years that a person born in that year is expected to live, based on current mortality rates, for males, females, and total. Source: BC STATS, B.C. Ministry of Finance and Corporate Relations. Rationale: Life expectancy is used around the world as a basic indicator of the extent to which people are able to live a long life, that a population is healthy, has adequate food and access to health care, and is protected from disease and other threats that would shorten their life span. Although life expectancy measures quantity rather than quality of life, it remains a widely-used summary measure of population health.

40 Age Standardized Mortality Rate Definition: The number of deaths due to all causes and specific causes, expressed as a rate per 10,000 population (age-standardized), for the Status Indian population compared to other B.C. residents. Source: B.C. Vital Statistics Agency. Rationale: Measures long-term success in reducing deaths, compared to general population. Although the gap between Status Indians and other B.C. residents is narrowing, Status Indians have mortality rates that are significantly higher, on almost all causes of death. (BCPHO, 2002, pg 168)

41 Potential Years of Life Lost
Definition: Potential years of life lost (PYLL) for males and females, from all causes and selected preventable causes, expressed as an age-standardized rate per 1,000 standard population. PYLL is the number of years of life “lost” when a person dies before an established cut-off point, in this case age 75. Source: B.C. Vital Statistics Agency. Rationale: Potential Years of Life Lost (PYLL) focuses on premature deaths - deaths that occur in the younger age groups and that can, in theory, be prevented or postponed. PYLL is an overall indicator of population health, as well as the effectiveness of preventive programs. PYLL considers deaths before age 75 and weights them by age. A person dying at age 25, for example, has lost 50 years of life (75 minus 25 = 50 PYLL). To allow for meaningful comparisons, PYLL is expressed as an age-standardized rate per 1,000 population. (BCPHO, 2002, pg 155)
status Indian\textsuperscript{42}, male or female, of every age that passed away in British Columbia between 1991 and 2001. The health indicators available limits analysis to status Indians as there are no current methods of data collection for non-status, Métis or other Indigenous peoples.

\textit{Linkage social capital} indicators include the number of First Nation bands participating in health transfer and the British Columbia Treaty Commission (BCTC) process and the number of Aboriginal organizations and services in each HSDA. The number of bands participating in health transfer was collected from the First Nations Inuit Health Branch, Health Canada publication \textit{Ten Years of Health Transfer} (1999) and includes all bands who were negotiating or completed health transfer up to 1999. The number of bands participating in the BCTC process within each HSDA was collected from the BCTC web site which identifies all bands negotiating with the BCTC format\textsuperscript{43}.

Population estimates of First Nation people are provided by two sources, the Canadian census and through the British Columbia Vital Statistics Agency (BCVSA). The BCVSA population data is more accurate than Canadian census data because they cross reference three data sets to estimate status Indian population and First Nations participation in Canadian census is low. The BCVSA population estimates are for status Indians only while the Canadian census data, reported in the BCPHO Annual report (2002) includes all aboriginals groups. The \textit{linkage social capital} indicators in each HSDA will be partly determined by the population density of First Nations and Aboriginals. To account for different population densities the \textit{linkage social capital} indicators for each HSDA will also be reported as a ratio per the number of First Nations.

3.02 Data

In the BC PHO annual report (2002), health and social determinants of health status are reported by geographic region, not by individual community. Therefore, identifying the extent of recognition and inclusion between the state and aboriginals for health analysis, data must be developed across the same geographic regions. Unfortunately, these geographic regions are commonly redrawn in an attempt by the provincial government to streamline service and

\textsuperscript{42} This data includes status Indians who are affiliated with First Nations that are not in British Columbia.

\textsuperscript{43} This data does not include those First Nations who have completed comprehensive treaties outside of the BCTC process. And, there are several First Nations that do not recognize the BCTC format of negotiating self-governance; instead they are pursuing self-governance through different avenues.
administration delivery. For the purpose of this investigation the current health service delivery areas (HSDA) will be utilized in the data collection and analyses (see Table 9; see Figures 1-4).

A health service delivery area (HSDA) is determined by the Ministry of Health Services. A HSDA is a geographic area; British Columbia is divided into 16 regions, known as HSDA's. Each HSDA has their own board of directors and organize the delivery of treatment services and population health programs. The British Columbia Vital Statistics Agency (2003) defines a HSDA as

A geographic subdivision of the province used by the Health Authorities for administrative purposes. (pp. 136)

Aboriginal health data are analysed by the British Columbia Health Officer according to each health region (BC PHO, 2002). However, the data currently available are reported by health service delivery area (HSDA). There are four more health regions than there are HSDAs: the north Okanagan and Okanagan Similkameen health regions have been divided up into the Okanagan HSDA and the Thompson HSDA; the Thompson and Cariboo health regions have become the Thompson, Cariboo, Shushwap HSDA; the Burnaby health region has been added to the Simon Fraser HSDA; and the North Shore and Coast Garibaldi health regions have become the North Shore/Coast Garibaldi HSDA, with all other health regions maintaining their geographic boundaries (see Figures 1-4). The switch from health regions to HSDAs does not affect many First Nations, since the majority remain within the boundaries of the same health regions.

Demographics

Key to describing how linkage social capital determines First Nations health status at a regional level is the size of the aboriginal population in each HSDA. The aboriginal population is not uniformly distributed across British Columbia. This is important because the number of aboriginals accessing the services and organizations identified in the GAOS or the social programs resulting from the BCTC or health transfer varies between HSDAs. The social programs resulting from the BCTC process and health transfer will be accessed primarily by Status Indians, while organizations and services listed in the GAOS will be accessed by all aboriginal populations (see Table 13; see Figures 5-10).

44 Mortality statistics for Registered Indians are collected by the Ministry of Health Services' Vital Statistics Agency.
The North West HSDA has the largest population of aboriginals of all BC regions. In the 1996 census, 19,395 people reported being of aboriginal descent. Of this population, 9,745 people lived on a reserve, while 9,655, representing 13% of the total British Columbian aboriginal population, lived off reserves. The British Columbia Vital Statistics Agency reported that in 2001 there were 25,190 Status Indians. It is important to note that census data usually under represent the aboriginal population, while the BC Vital statistics agency collects population data in a novel way by cross-referencing several different data basis, thereby providing a more accurate estimation of the population.

Richmond has the smallest aboriginal population of any HSDA and no bands. It also has the fewest number of Status Indians and off-reserve Indians. The Northern Interior, North West, and the Thompson, Cariboo, Shushwap region are home to 36% of the total British Columbia aboriginal population, 51% of the on-reserve population, 38% of the Status Indian population, 29% of the off-reserve aboriginal population, and 39% of British Columbia’s bands. The rest of the HSDAs have similar percentages except the Vancouver HSDA, which has 11% of the total British Columbia off-reserve population, 9% of the Status Indian population, and only 1% of the on-reserve population.

Each HSDA has a number of different bands and Status Indian populations. The most populated HSDA (the North West) has the third highest number of bands, and its HSDA has the second highest number of Status Indians (Thompson, Cariboo, Shushwap has the most number of bands). The HSDA with the fourth largest population of Status Indians (Vancouver) has the second lowest number of bands, while the Fraser Valley and the North Vancouver Island HSDAs have more bands and fewer Status Indians than most other HSDAs (see Figures 11 & 12).

The north Vancouver island HSDA has the highest percentage of on-reserve status Indians followed by the central Vancouver island HSDA with 42% on-reserve. The lowest percentage is in the Richmond HSDA with zero reserves, followed by the Simon Fraser, Vancouver and South Fraser HSDAs with 3, 4 and 7 percent on reserve respectively.

Health Data

The health data collected by the Ministry of Health Services, Vital Statistics Agency include mortality data on Registered Indians. This information will be used to describe the health status of First Nations in the various HSDAs, and specific causes of death will be

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described as they relate to the *linkage social capital* indicators. These statistics include the age standardized mortality rates (ASMRs) for the leading causes of death, including ischemic heart disease, cancer, pneumonia/influenza, parasitic and infectious diseases, liver disease/cirrhosis, alcohol related deaths, suicide, drug induced deaths, and motor vehicle accidents. For the Status Indian population they also include the life expectancy and potential years of life lost due to external causes. There are no regionalized health statistics for other aboriginal populations.

The status Indian population that is included in the British Columbia vital statistics agency report is defined in the *Regional Analysis Of Health Statistics For Status Indians In British Columbia: Birth Related And Mortality Summaries For British Columbia And 16 Health Service Delivery Areas, 1991-2001* (2002). The BC vital statistics agency collects mortality data for status Indians residing in British Columbia. The primary source of data include BC vital statistics agency statistical database which extracts death registration, demographic information, and medical information related to cause of death and whether the individual was a status Indian. The data also includes information from the Indian Status Verification File of the First Nations Inuit health Branch, Health Canada; this information originates from the DIAND. A third data base that contributes to this information includes the Status Indian Entitlement files form the BC Medical Services Plan. The mortality statistics were matched across each database, 8072 deaths for the years 1991 through 2001 were identified by the vital statistics, Medical Service Plan and Status Verification Files. Approximately one third of the deaths were identified by all three sources (33.6%), with a similar percentage identified by two sources (34.0%) or by only one source (32.4%) (BC Vital Statistics Agency, 2002, pg 4-5).

*Linkage social capital indicators*

The services and organizations in the GAOS (2002), treaty/land claims (BCTC, 2002), and health transfer (1999) will be used to measure *linkage social capital*. The total number of communities participating in health transfer, the BCTC process, and the number of GAOS listings within each health service delivery area will indicate the level of *linkage social capital* within each region. Each of these indicators represents a different type of relationship or possibility for a relationship between aboriginals and the Canadian government. Utilizing public information, the number of communities participating in health transfer and the BCTC process

46 Number of communities in health transfer (http://www.hc-sc.gc.ca/fnhih-dgsphn/fnhbh/bpm/hfa/ten_years_health_transferr/map/pacific/pacific.htm); number of communities in BCTC process
will be identified and categorized according to their respective health service delivery area (HSDAs). The organizations and services in the GAOS will also be divided up into their respective HSDAs (determined by their mailing address). Listings for bands and tribal councils were not included with the GAOS listings. The total number of communities in each HSDA participating in health transfer and the BCTC process as well as the number of listings in the GAOS within each HSDA will indicate the level of linkage social capital within that health region (see Table 10).

Health Transfer

Health transfer is the relationship between the First Nations and the Canadian government which results in the delivery of health services. It defines the relationship between the parties and results in First Nations controlling and exercising authority over health services in local communities. This authority is meant to increase the First Nations’ participation in civil society development and allow them to determine how they will meet their own goals and needs. However, health transfer does not result in self-determination over health services. Health transfer requires the implementation of mandatory programs and accountability policies that must be met by the First Nations. The critics of health transfer note that there is little flexibility in the delivery of mandatory programs and the development of new programs. As designed, health transfer increases First Nations’ participation but is not self-determination in its complete form.

British Columbia is divided up into 16 different health service delivery areas (HSDAs). First Nations people on reserve have access to programs with their community. Some of these programs are federally funded. They range from direct medical service branch delivery of programs, contribution agreements, and integrated community-based health services to health transfer and self-governance. Health transfer and self-governance are not programs in themselves rather they are relationships between first nation communities and the Canadian government. Health transfer and the British Columbia Treaty Commission process include multiple programs. Health transfer has several mandatory programs. The relationship is a partnership this is negotiated between First Nations (band, tribal council, health society) and the First Nation Inuit Health Branch of Health Canada. The negotiation includes how first nations
will deliver the mandatory programs and what they will report to the Canadian government. Negotiating how the first nation will deliver mandatory programs is accomplished by the 'transfer of knowledge'. Which is the transfer of administration of programs designed by the Canadian government but delivered by the first nation. The implementation of programs derived by the community are included but only after mandatory programs are delivered and economic and human resources are limited, curtailing the development of community based programs. These mandatory programs are primarily directed to the on-reserve population.

*British Columbia Treaty Commission*

The treaty negotiation process is a relationship between the First Nations and the Canadian government. A signed treaty results in a level of self-determination decided at each negotiation table. The resulting treaty also determines the new relationship between the First Nations community and the Canadian government. A treaty results in the delivery of social programs by the First Nations. Social programs may be delivered cooperatively with the Canadian government, but this is determined by the First Nations. The social programs resulting from treaties are comprehensive, that is to say they involve every aspect of social life. Signed treaties are the most comprehensive form of self-determination currently available to the First Nations, increasing their participation in civil society development by investing all authority in the First Nations and developing co-management schemes with the Canadian government for social programs influencing both the First Nations and other Canadians. The British Columbia Treaty Commission process is *linkage social capital*, because the key to these negotiations is the relationship between the First Nations and the Canadian government as well as the decision of who and how governs social programs.

The number of communities participating in the BCTC process is different from that of the participating First Nations communities. The BCTC classifies the First Nations as communities organized together to represent one nation. Therefore, each First Nations entity identified by the BCTC may include several bands. The number of communities in the BCTC process was determined by each First Nations' "Statement of Intent," which includes a list of the aboriginal people represented by the First Nations as noted by the bands included in each First Nations community. In contrast, the Department of Indian Affairs and Northern Development counts each band as a separate First Nations entry.
Guide to Aboriginal Organizations and Services

Identifying relationships between aboriginal organizations and services and the state will be accomplished with the help of the Guide to Aboriginal Organizations and Services (GAOS) (1999). The GAOS is produced by the state to distribute among various ministries, so that they may identify aboriginal services and organizations with which to build relationships and deliver social programs. The GAOS identifies the areas of education, health and family, justice, housing, resource development, treatment centres, women’s, First Nations bands, tribal councils, political, business, Métis, arts and culture, communication, friendship centres, social service, and umbrella organizations. The organizations and services included in the GAOS are actively involved in producing or delivering social programs to aboriginals, but the GAOS does not indicate whether there exists a relationship between the aboriginals and the state producing these services. The GAOS identifies services and organizations recognized by the state. Recognition and inclusion by the state is a necessary component of linkage social capital development.

Aboriginal health data are analysed by the British Columbia Health Officer according to each health region (BC PHO, 2002). However, the data currently available are reported by health service delivery area (HSDA). There are four more health regions than there are HSDAs: the north Okanagan and Okanagan Similkameen health regions have been divided up into the Okanagan HSDA and the Thompson HSDA; the Thompson and Cariboo health regions have become the Thompson, Cariboo, Shushwap HSDA; the Burnaby health region has been added to the Simon Fraser HSDA; and the North Shore and Coast Garibaldi health regions have become the North Shore/Coast Garibaldi HSDA, with all other health regions maintaining their geographic boundaries (see Figures 1-4). The switch from health regions to HSDAs does not affect many First Nations, since the majority of them remain within the boundaries of the same health regions and suffer only a simple name change.

British Columbia is divided up into 16 different health service delivery areas (HSDAs). First Nations people on reserve have access to programs with their community. Some of these programs are federally funded. They range from direct medical service branch delivery of programs, contribution agreements, and integrated community-based health services to health

47 The GAOS includes all Aboriginal populations, status and non-status Indians, Metis, and Inuit. Health data is applicable only to status-Indians therefore it is a weak indication of linkage social capital as a determinant of health.
48 Mortality statistics for Registered Indians are collected by the Ministry of Health Services’ Vital Statistics Agency.
transfer and self-governance. Health transfer and self-governance are NOT programs in themselves rather they are relationships between first nation communities and the Canadian government. Health transfer and the British Columbia Treaty Commission process include multiple programs. Health transfer has several mandatory programs. The relationship is a partnership this is negotiated between First Nations (band, tribal council, health society) and the First Nation Inuit Health Branch of Health Canada. The negotiation includes how first nations will deliver the mandatory programs and what they will report to the Canadian government. Negotiating how the first nation will deliver mandatory programs is accomplished by the 'transfer of knowledge' which is the transfer of administration of programs designed by the Canadian government but delivered by the first nation. The implementation of programs derived by the community are included but only after mandatory programs are delivered and economic and human resources are limited, curtailing the development of community based programs. These mandatory programs are primarily directed to the on-reserve population. The north Vancouver island HSDA has the highest percentage of on-reserve status Indians followed by the central Vancouver island HSDA with 42% on-reserve. The lowest percentage is in the Richmond HSDA with zero reserves, followed by the Simon Fraser, Vancouver and South Fraser HSDAs with 3, 4 and 7 percent on reserve respectively.
Chapter IV

Results

4.01 Introduction

The data is organized according to each health service delivery area, including the age standardized mortality rates, life expectancy, and potential years of life lost due to external causes for status Indians (Table 11 & 12); and, the linkage social capital indicators, including number of communities in health transfer, number of communities in the BCTC process and number of Aboriginal organizations and services identified in the GAOS listings (Table 10). This is not an exhaustive list of all the relationships between Aboriginals and the state within British Columbia. These indicators demonstrate the utility of linkage social capital in explaining variations in health within the Aboriginal population. The health data and linkage social capital indicators are analysed on a region by region basis. The analysis identifies outliers and clusters of data that are distinct from other HSDAs. Limitations in the data reduce the statistical rigour of this study, but as this concept is an introduction to Aboriginal health analysis the findings do contribute to Aboriginal health discourse.

4.02 Exploratory Data Analysis

The Exploratory Data Analysis (EDA) approach does not impose deterministic or probabilistic models on the data. On the contrary, the EDA approach allows the data to suggest admissible models that best fit the information available. Anyone who explores the theories and data involved may identify alternate models that best fit the data. Thus, this approach permits a diversity of experiences to enter into the aboriginal health analysis discourse.

Exploratory data analysis utilizes visual representation of data to inform the resulting model. Analysing data through graphic representations lets the information speak for itself. There are no a priori statements or hypotheses to be tested, as these require a model to be imposed upon the data and require the data to be normally distributed. Exploratory data analysis, unlike classical statistical analysis, utilizes all of the data including outliers. EDA techniques make up for the lack of statistical rigor by being suggestive, indicative, and insightful about how the model should be represented (NIST/SEMATECH e-Handbook of Statistical Methods, 2004). The following analysis identifies outliers and clusters of data that inform a model of how linkage social capital determines Aboriginal health. The Vancouver and Richmond HSDAs are predominant outliers for the highest age standardized mortality for a number of causes of death.
and potential years of life lost due to external causes. The Vancouver HSDA is also an outlier in the *linkage social capital* indicator for number of Aboriginal organizations and services identified in the GAOS. There are three clusters of data that are also apparent; they include HSDAs that have 0-5, 5-10 or 14-20 communities in health transfer, 0-10 or 11-20 communities in the BCTC process and 0-20, or 20-40 aboriginal organizations and services. This analysis shows how these clusters and outliers may inform a model that describes how *linkage social capital* can account for variations in health status between Aboriginals in different HSDAs.

4.03 Health transfer clusters

Each HSDA has a number of different relationships with the Canadian government. Because the Richmond HSDA does not have any bands, it will be excluded from all band-related indicators, including participating in health transfer and the BCTC process. The HSDA with the greatest percentage of bands in British Columbia participating in health transfer is Vancouver, although Vancouver only has one band and an on-reserve population of 495, off-reserve population of 11,140, and a Status Indian population of 13,756. On North Vancouver Island, 19 of 21 bands are participating in the health transfer process; In the East Kootenay/Kootenay Boundary 4 of 5 bands is involved, and on the South Vancouver Island 9 of 12 bands are participating. The 7 bands in the North East and the 3 bands in the Simon Fraser HSDA are not participating in health transfer. In the Fraser Valley, 10 of 27 bands are taking part, in South Fraser 1 of 3 bands are involved, while on the North Shore Garibaldi, 3 of 12 bands are participating in health transfer (see Figure 13).

When the number of communities in health transfer is plotted with the ASMRs for the leading causes of death, a negative trend emerges. As the number of communities with health transfer in a single HSDA increases, the ASMR for the leading causes of death decreases. This trend is not visible for the ASMR when it comes to suicide. The visible trend is influenced by different outliers that dominate the HSDAs with no health transferred communities and high ASMRs for most of the leading causes of death. The small negative trend between health transfer and the ASMR for MVAs could be explained by health transfer having nothing to do with roadway infrastructure. The stronger negative trend between the number of health transferred communities and the ASMRs requiring treatment services (chronic liver disease/cirrhosis,

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49 A trend is not an expression of a correlation but a visible observation made by the researcher. A trend does not imply a causal effect; it is meant to inform the model resulting from the exploratory analysis of raw data.
cancer, ischemic heart disease, and pneumonia/influenza) could be accounted for because treatment services are a mandatory program in health transfer (see Figure 16).

When we compare the number of communities participating in health transfer and life expectancy, we observe a positive trend. The more communities engage in health transfer in an HSDA, the higher the life expectancy of the aboriginals within that HSDA. When the number of health transferred communities is compared to potential years of life lost, a negative trend is clearly visible. Similarly, the more communities are involved in health transfer, the fewer years of life are lost due to external causes (see Figure 17).

The most noticeable HSDA is that of Vancouver. Vancouver has one band participating in health transfer. The Vancouver HSDA has 82 listings in the GAOS and 11% of the total British Columbia's off-reserve aboriginal population. The Vancouver HSDA also has a higher number of Status Indians reported by the BC vital statistics agency than reported by the 1996 census data for the total aboriginal population. The large majority of the First Nations in the Vancouver HSDA may not have access to health transfer services. Vancouver also has the highest Age Standardized Mortality Rates for parasitic and infectious diseases, chronic liver disease/cirrhosis, alcohol related deaths, drug induced deaths (deaths that may be preventable with treatment services), and the highest potential years of life lost due to external causes.

Health transfer is a partnered style relationship, whereby the First Nations partner with the Canadian government in delivering health services. This is not to say that the partnership is equal or in the best interest of both parties. The relationship involves the First Nations taking over the administration of health services formerly delivered by the federal government. Health transfer provides little opportunity for modification of mandatory programs and is not community-based. It has elements of community-based development, for example capacity building, but it is limited in allowing a diversity of opportunities to different First Nations.

The aboriginals in the Vancouver HSDA have fewer opportunities for influencing health services and programs. There are few organized relationships between the aboriginals in the Vancouver HSDA and the governments of Canada. The aboriginals in the Vancouver HSDA may have a relationship with the Canadian government within other HSDAs or provinces, but there is very little opportunity to influence community programs. The aboriginal social programs in the Vancouver HSDA are hindered by their relationships with the Canadian government in developing a common understanding, leveraging resources, and formulating responsive policies.
The same can be said for the North Shore Garibaldi, South Fraser, and Okanagan HSDAs, which have similar demographic complexities. Many aboriginals in these areas do not have access to the relationships developed in health transfer. The health transfer relationship results in First Nations' administrative authority over specific social programs, including communicable disease control, environmental and occupational health and safety programs, and treatment services. It is difficult to associate these programs with any one health indicator, because they are influenced by several factors and there may be many social programs that attempt to address that health indicator. The communicable disease control program is of particular interest to the Vancouver HSDA, because the ASMR for parasitic and infectious diseases, those usually controlled through such a public health program, is the highest in the province. The ASMR for infectious and parasitic diseases in the Vancouver HSDA is three standard deviations higher than the provincial average. The North Shore/Coast Garibaldi, South Fraser, and Okanagan HSDAs do not have equivalent indicators. The majority of aboriginals in the Vancouver HSDA do not have any other avenues for a relationship with the Canadian government, whereas the North Shore Coast, Garibaldi, South Fraser, and Okanagan HSDAs have such opportunities through the BCTC process.

The North Vancouver Island and East Kootenay/Kootenay Boundary HSDAs each have a high percentage of off-reserve aboriginals, combined with a high Status Indian population. Therefore, it appears that there are few Status Indians able to participate in health transfer. There is no positive language for off-reserve aboriginals in health transfer policy, since health transfer targets reserve populations. In addition, because many First Nations members leave the reserve for employment and schooling, they may not have access to relationships established in health transfer and the resulting social programs. These districts also have a number of relationships established in the BCTC process, so there are alternate avenues to leverage resources and to develop common understandings and responsive policies. The BCTC process allows the First Nations to establish their own membership lists, so they may include off-reserve populations as citizens of their nation.

Aboriginals in the Simon Fraser and North East HSDAs do not have any communities participating in health transfer and a relatively low Status Indian population, with the majority of
aboriginals living off reserves. However, these communities do have access to relationships created through the BCTC process.\footnote{It is not my intent to say that it is important to have relationships with the Canadian government. I am saying that it is important to have a particular type of relationship, one that goes beyond simple representation to one that promotes self-determination.}

4.04 BCTC clusters

While the Vancouver HSDA band is participating in the BCTC process, the number of Status Indians who are directly involved in this relationship is relatively low considering the number of Status Indians who live off reserves in the Vancouver area. The Status Indians living off reserves do not all belong to the First Nations in the Vancouver HSDA. All bands in the East Kootenay/Kootenay Boundary HSDA are also participating in the BCTC process, and there is a small on-reserve\footnote{A small on-reserve population is indicative of the number of Status Indians involved in a relationship with the Canadian government, even though most relationships include stipulations about the off-reserve population. To achieve a robust set of LSC indicators we would need to know band membership numbers for an accurate representation of First Nations' participating in LSC producing relationships.} population. Twenty of the 21 bands in the North Vancouver Island HSDA are participating in the BCTC process, along with 10 of the 18 bands in the Central Vancouver Island HSDA, and 2 out of 3 bands in the South Vancouver Island HSDA. In the northern regions of the province 20 of 23 bands are participating in the North West, 5 of 7 in the North East, and 13 of 21 in the northern interior. In the southern regions of the province there 1 of 3 band in the Simon Fraser HSDA, 2 of 3 bands in the South Fraser, and 19 of 27 bands in the Fraser Valley HSDA are participating in the BCTC process. The southern interior of British Columbia has a relatively low level of participation in the BCTC process, with 1 of 7 bands in the Okanagan HSDA and 7 of 38 bands in the Thompson, Cariboo, Shushwap\footnote{There are several First Nations in these regions that have opted to negotiate self-governance and land claims outside of the BCTC process.} (see Figure 14).

The BCTC process is a government to government negotiation process which permits either party to bring any item to the table for negotiation. The format of the BCTC process may not be agreed upon by every First Nations community in BC, but the intended result, self-determination, is the common goal. First Nations enter into the process through a mandate delivered by the citizens to their government representatives. The resulting social programs are determined by the First Nations, are likely to be community-based,\footnote{A First Nations community may not have the opportunity to offer health services to its citizens due to resource limitations. Thus, it may have to enter into agreements with external authorities to provide these services. When one has neighbours, self-determination is relative.} and are expansive, involving every aspect of aboriginal social life. No health indicator can be associated to the
BCTC *linkage social capital* indicator. The research conducted by Chandler and Lalonde (1998) would have us suspect that the ASMR for suicides would be lower in HSDAs with many communities participating in the BCTC process. Central Vancouver Island is beyond two standard deviations from the mean of the ASMR for suicide (5.6/10,000). Sixteen of its 18 communities are participating in the BCTC process, and 10 of 18 communities take part in health transfer. The HSDA with the lowest ASMRs for suicide is the North East, which has no communities in the BCTC process, but the North East is the only HSDA with a historical treaty, Treaty 8. The other HSDAs remain within one standard deviation of the mean (see Figure 18).

When the ASMRs for the leading causes of death are compared to the number of communities in a HSDA in the BCTC process, a negative trend is visible for most ASMRs. This is very similar to the health transfer indicator. As the number of communities in the BCTC process increases, the ASMR decreases for all leading causes of death except suicide. One would expect the ASMR for suicide to follow the negative trend considering Chandler and Lalonde’s (1998) research, but they did not account for off-reserve population, which in many HSDAs is greater than the on-reserve population. The largest negative trend is with the ASMR for chronic liver disease/cirrhosis, followed by pneumonia, and influenza. When the number of communities participating in the BCTC process is compared to the life expectancy of the aboriginals in their respective HSDA, a positive trend is visible: the more First Nations participate in the BCTC process within a HSDA, the higher the life expectancy. Also, the more communities participate in the BCTC process within a HSDA, the lower the potential years of life lost due to external causes. These trends are consistent with the trends identified with the health transfer indicator (see Figure 19).

4.05 *GAOS Indicator*

The number of organizations and services identified in the GAOS within each HSDA varies greatly. The people participating with these organizations and services are not only Status Indians, as are the relationships in the BCTC and health transfer processes, so the total Aboriginal population must be taken into account when investigating the GAOS *linkage social capital* indicator. To do this I have compiled the number of Aboriginals per organization or service in each HSDA. The Vancouver HSDA has the least number of Aboriginals per organization or service identified in the GAOS at 142 Aboriginals per GAOS listing. The North Shore Garibaldi is the second lowest with 184 Aboriginals per GAOS listing and South
Vancouver Island closing out the least amount of Aboriginals per GAOS listing at 216. The Northern Interior has 316, North West at 668 and the North East at 577 Aboriginals per GAOS listing. The Fraser Valley (901 Aboriginals/GAOS listing) and the Simon Fraser (908 Aboriginals/GAOS listing) are the HSDAs with the most Aboriginals who may access an organization or service identified in the GAOS (figure 15).

A number of GAOS listings within a HSDA does not have any maintained trend with the leading causes of death. The Vancouver HSDA, with its 82 GAOS listings, skews the results, making most trends positive, because of the region’s poor health and high number of GAOS listings. Even with the Vancouver outlier removed, the trends are not consistent from one ASMR to another. The number of GAOS listings has a positive trend when compared to the potential years of life lost. The more GAOS listings there are, the more years of life are lost due to external causes. The GAOS listings in the HSDA as compared to life expectancy do not fit the trends identified with the health transfer and BCTC indicators. There is virtually no connection between the number of GAOS listings and life expectancy.
CHAPTER V

Discussion

5.01 Limitations

There are several gaps in the data informing the complete data-derived model. Gaps in the data include limited health statistics for Métis and Non-Status Indians, no indication of aboriginal association to an organized political group, no indication of off-reserve aboriginal health, and no indication of populations with any access to relationships that their nation secures as part of health transfer and treaty or land claims processes.

There are several gaps in current aboriginal health data. Mortality and morbidity rates are not collected for all aboriginal populations. Current health analysis includes Status Indians but neglects to include Métis and Non-Status Indians. This information is not sufficient for policy writers and program developers to respond to the urgent health needs of the aboriginal population. Since self-determination is the major focus of most aboriginal populations and since its processes determine many aspects of aboriginal society, measures of self-determination should also be included in the data. Including linkage social capital measures will identify successful relationships that could provide guidelines for best practices in future relationships. Where populations reside and the associations in self-determining efforts is also important.

This research study focuses on rudimentary indicators in assessing the potential for linkage social capital in aboriginal health analyses. These indicators identify which aboriginals are recognized and how they are included in the production of social programs. The health transfer indicator identifies First Nations that have been assessed to have management experience and a land base south of the 60th parallel. Social programs resulting from health transfer include several mandatory programs determined by the federal government. They offer little room for innovative community-based programs. The BCTC indicator identifies First Nations associated with a recognized land base and a community capable of self-government. The resulting social programs are extensive, including most aspects of First Nations’ social life. The GAOS identifies aboriginal organizations that may or may not have relationships with the Canadian government. Social programs resulting from the relationships indicated by the GAOS cannot be determined and require individual investigation to assess linkage social capital

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54 This is determined by the federal government.
development, the nature of the relationship (recognition and inclusion), and what its results (social program).

Health transfer and the BCTC process are initiated by a mandate from the First Nations citizenship to their Band Council. The ways in which organizations and services in the GAOS include the aboriginal population require further investigation. This research could identify the target populations of these organizations and services, ways in which they meet their needs and goals, and types of relationship (partnership, government to government, trust, or colonial) they have with the Canadian government producing social programs, if any. This depth of research would identify gaps and redundancies in services and populations that are further marginalized by restrictive policies.

Comparison between HSDAs is fraught with complications. Complications include the shift from health regions to HSDAs without a clear indication of what communities are affected, data sources from the BCPHO report conflicting with 2001 census data, and there being more Registered Indians than the total reported aboriginal population in some regions. The fact that health status is only collected for Status Indian populations and not Métis, Inuit, Non-Status Indians, and other indigenous peoples who are displaced means that we can only comment on the health of the Status Indian population. Status Indians identified by the British Columbia Vital Statistics Agency could come from different provinces and not be directly affiliated with any band participating in any identified relationships with the Canadian government. The residence of Status Indians is also not reported, so First Nations in any HSDA are not necessarily associated with the First Nations in the HSDA where they reside. These discrepancies make comparing one HSDA to another impossible.

5.02 Research Implications

The gaps in this research could be decreased by combining linkage social capital indicators with the First Nations Regional Health Survey. Such an analysis should identify current residence and First Nations affiliation, isolating First Nations members that access social programs outside of their nation’s HSDA and finding out in which HSDAs the community may wish to pursue relationships to develop social programs for those living off reserves. The health status of the Métis population could be incorporated in association with the Métis Provincial
Council of British Columbia, which is currently developing a membership list. Identifying the off-reserve populations' health status will permit an analysis of how relationships between aboriginal groups and the Canadian government determine health. Identifying this associational density for linkage social capital indicators would increase the data's ability to inform a complete model of linkage social capital as a determinant of aboriginal health.

The robustness of the statistics could be improved by identifying all relationships that produce a social program and differentiate between the levels of autonomy in each relationship. This research study identifies three different types of relationships: government to government, partnered, and unorganized. Government to government relationships in the BCTC process have six different stages that progress to a signed treaty. Each level brings the nation closer to a signed treaty, but not all stages increase self-determination and/or movement to the next stage of negotiations. Some of the stages in the BCTC process permit for increased self-determination before the treaty is signed, but this varies from negotiation to negotiation. Similarly, the health transfer process has different stages, some of which increase self-determination before transfer implementation. Including an indicator of social programs under First Nations' authority would provide another dimension that the current indicators cannot identify.

The model of how linkage social capital determines health would also be improved by developing an indicator that measures the extent and nature of litigation that each nation is pursuing. Litigation is the antithesis to a social relationship, as it is does not provide a proper negotiation format. Several aspects of self-determination will not be considered by the court, and the costs of litigation are restrictive for the First Nations. Finally, litigation ignores the aboriginals' right to government to government negotiations.

Community-based research that investigates current relationships with the Canadian government would improve the description of linkage social capital as a determinant of health. This investigation could use ethnographic methods to identify the number, qualities, and self-determination developed in each relationship. This research would identify relationships that allow for effective consultation resulting in the development of a social program. This information may inform future relationships by providing a framework or best practices for consultations with the First Nations.

Membership is the common term used in policy and political documents for those who affiliate themselves with a particular First Nations community. Membership is a poor word to describe these people, because it neglects the inherent rights of aboriginals, equating their nationhood to a professional association or club.
Linkage social capital indicators could be improved by identifying the extent and nature of aboriginal/state relationships. They could identify the specific stage of health transfer and BCTC process, agreements currently in place, and types of relationships within each agreement. The linkage social capital indicators included in this research study could be used to identify what relationships are predominant in a community. Once this is determined, indicators that identify the qualities of each relationship within the treaty or transferred services could be applied to determine the extent and depth of linkage social capital. Sharing this information with other communities or organizations may improve their chances of increasing their ability to meet the constituent’s needs and goals.

5.03 Theoretical Implications

Linkage social capital cannot be described as a hierarchical relationship. A hierarchical relationship exists when the benefits produced as a result of a social program are retained by a single partner in the relationship. When the benefits are shared between partners there is no opportunity for a hierarchy to become established. Historical considerations and current relationships must be accounted for in determining whether a hierarchical tendency exists. One cannot impose a hierarchy when investigating the development of linkage social capital. Therefore, a more apt definition of linkage social capital would exclude hierarchy as a determining element. Rather, relationships described by linkage social capital should be determined by the distance between partners and their respective constituents. For instance, the federal government’s role in First Nations’ communities is, for the most part, one of policy development, not practical application.

5.04 Policy Implications

Relationships between the aboriginals and the state in Canada have had a mixed history of success. Historically, they have been mostly one-sided and hierarchical in nature. The extent of consultation between the First Nations and the Canadian government or groups who have an economic interest in the traditional lands of the First Nations is only now being addressed in Canadian courts. Litigation that has addressed the extent of consultation has not informed the nature or qualities of the consultation. The court’s decisions have clarified when First Nations must be consulted, but have not given any indication of who decides what a consultation will encompass or how decisions will be made.
The data from this research study and the myriad of aboriginal voices suggest that relationships with the Canadian government should be on a government to government basis, thus permitting any item important to the resolution of a problem to be brought to the negotiation table. Health transfer does not effectively integrate First Nations' will and goals, as the mandate is placed on the First Nations by the Canadian government. The health transfer process should incorporate more co-management schemes rather than partnerships. The organizations and services identified in the GAOS would increase their involvement in the development of civil society if a closer association between them and the provincial government existed. This is not to say that every aboriginal organization or service should have a relationship with the provincial government. Yet, social programs may benefit from a relationship with the Canadian government that incorporates, recognizes, and respects the aboriginal right to self-determination. Current relationships between the services and organizations in the GAOS and the Canadian government do not indicate the level of recognition or inclusion. The GAOS listings in the Vancouver HSDA would benefit from a relationship that promotes self-determination.\textsuperscript{56} Incorporating a co-management scheme between the aboriginal organizations and services in the Vancouver HSDA may promote accountability for both parties.

The British Columbia treaty making process needs to state the nature and extent of consultation explicitly. How and when First Nations are consulted is important. There is no cookie cutter solution or framework for consultation, but only basic guidelines that detail best practices developed by the First Nations in coordination with each other. The litigation process that currently details the nature and extent of consultation is not in the best interest of any party involved. Moreover, the First Nations not involved in the litigation process are also implicated through the court system of precedence. The BCTC process also needs to provide resources for First Nations to increase their capacity to pursue treaty making and self-determination in social programs. The Canadian government should not take advantage of a population it has subjugated by telling it to be self-determining and equal participants in the Canadian society, while effectively blocking their access to institutions that determine their self-governance.

\textsuperscript{56} During my studies I have had the opportunity to volunteer with at risk youth on Vancouver’s Downtown Eastside. I was astonished at how many aboriginal organizations and services there were downtown and even more astonished at how few people knew of their existence. To me, this indicated that aboriginal organizations were not recognized in the community and that their development was population specific rather than community based. I was also surprised at how quickly the programs came in and out of existence, usually due to funding changes or cancellations by different governments. Programs would start up and then suddenly disappear, abandoning their clients, only to reappear under a new name within months.
The most prominent implication for policy resulting from this investigation concerns the off-reserve aboriginal population. Health regions with the most off-reserve aboriginals are health regions with the lowest health status. These health regions also have the highest number of listings in the GAOS, indicating a high number of possible relationships to develop *linkage social capital*, but no inclusion. These findings suggest that health policy and program development must find formats for inclusion of off-reserve aboriginals in social program production. This implication could be addressed by including off-reserve populations in social program production along with on-reserve populations, and/or by devising ways to include off-reserve populations in social programs that ensure their participation as guaranteed by the BCTC and health transfer processes.

The above policy implications are full of complexities due to political boundaries established by the Canadian government. As noted earlier, the federal government assumes responsibility for the First Nations considered Status Indians, while the provincial government assumes responsibility for the off-reserve aboriginal population. These jurisdictional complexities have been noted by many First Nations groups and organizations as a major hindrance to social program development (British Columbia, 1998). These complexities are likely the primary factor in hindering *linkage social capital* development, because in the current environment it is difficult to establish relationships that promote recognition and inclusion, factors necessary to leverage resources, direct policy, and establish common goals.

The GAOS listings in the Vancouver HSDA indicate that the disorganized relationships they represent are not sufficient for meeting the health needs of the aboriginals. Yet, the GAOS listings are only a rough indicator of *linkage social capital*. The guide was developed to foster relationship development between the Canadian government and the aboriginal population. There is no specific policy that necessitates the use of the GAOS when developing social programs. Relative to the organized relationships in health transfer and the BCTC process, the GAOS listings represent an unorganized relationship, with more acquaintances than partners when compared to the health transfer process, and even less significant when compared to the government to government negotiations in the BCTC process.

5.05 How Can Social Capital Account for Variations in Health Status?

Tom Iron, the Vice-Chief of the Federation of Saskatchewan Indian Nations, said in a report to the federal government:
The wellness of our people, including their social, economic, and spiritual well-being, crosses the separate terms [of reference of the Royal Commission]. Wellness is a community issue, a national issue, a women's issue. It touches youth concerns, family considerations, even self-governance and historical concerns (Tom Iron, 4th Vice-Chief, Federation of Saskatchewan Indian Nations, Saskatchewan, 26 May, 1992, RRCAP, 1996).

This quote highlights the importance of the connection between individual health and well-being and the aboriginal social context. These connections, or relationships, are vital to the well-being of all peoples and in ensuring equity of health between populations. The relationship between individuals or groups and self-government is illustrated by the harmony wheel (FNIRHS, 1999), representing the basic connections between individuals and groups (see Figures 22-24). It represents a world view of several aboriginal cultures, one that must be incorporated in health analysis as well as health care implementation.

Aboriginal health in British Columbia is reliant upon striking a balance between aboriginal and state interests, so that harmony is restored between the people and their social context. Improving the balance between these interests through self-governance and health transfer improves the health of aboriginal populations. This balance permits the aboriginal world view to be enacted within the systems that generate health. Relationships implicated in the development of linkage social capital are key to restoring the balance necessary for maintenance of the connections on the harmony wheel.

Overall, this research project adds to the importance of incorporating aboriginal world views into the production of social programs. Different levels of recognition and inclusion permit differing degrees of ability for the aboriginal populations to meet their needs and goals. High levels of recognition and inclusion permit this population to leverage resources, identify problems, and develop common resolutions to meet their goals and needs. Without these qualities in relationships, resolutions to common needs and goals are fleeting and unresponsive to the necessary harmony within the aboriginal social context. Health may be affected by linkage social capital due to the expanse of these relationships. Very few aspects of a population are not determined by a group relationship in an aboriginal context. Therefore, resources contributing to improved health necessitate relationships that recognize and include a population's voice and wisdom.
Indicators used to discern the level of linkage social capital within each health region suggest that they are positively correlated to aboriginal health status. Health regions with more aboriginals participating in the production of social programs, indicated by the percentage of off-reserve aboriginals, the level of health transfer, and BCTC status, have better health than those health regions with less participation and production of social programs. Indicators used to identify recognition confirmed the alternate hypothesis that recognition alone was not correlated to health status. The data support the main hypothesis that health is partially determined by linkage social capital.

Linkage social capital indicators demonstrate that relationships between First Nations in British Columbia and the Canadian government, of which there are a number in each HSDA, are extensive. Using improved linkage social capital indicators we would be able to identify higher suicide rates in HSDAs with lower linkage social capital following Chandler and Lalonde's (1998) cultural continuity proposition, and we will identify more MVAs and food and waterborne diseases were there is low linkage social capital. Increased participation in the determination of local social programs would increase population health measures such as infrastructure that protects community water supplies and public spaces that are a risk to life. The increased local infrastructure provided by health transfer agreements should decrease infectious and parasitic diseases and deaths preventable by medicine, since these programs are mandatory.

Variations in the health status of aboriginals in the north, south, and island districts are reflected in the types of relationships between the aboriginals and the Canadian government. The northern and island regions have more relationships with self-determining elements than the south. Districts with more self-determining elements also have a healthier population. Relationships with self-determining elements, those in the BCTC process, are with multiple bands, so one BCTC negotiation could include many bands. The northern district has fewer bands at each negotiation table, and between the Nisgaa Settlement and Treaty 8 the north has more elements of self-determination than the south, whose relationships are rarely cohesive.

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57 Health regions with higher on-reserve aboriginal populations may have higher participation rates in civil society development. This assumption is based on the policies of the Canadian governments that focus on Status Indians. These policies target on-reserve populations, neglecting band membership lists recognized by the First Nations, which may include off reserve members who frequent the reserve.

58 Most aboriginal organizations follow a population health model, because it is more holistic and easily integrated into an aboriginal system.

59 Cohesiveness describes the extent of a network, one that includes all levels of society, individuals, groups, and the state.
Linkage social capital may partially decide on the social determinants of health within a community. For instance, a state that is economically motivated may not initiate relationships with a community that does not improve state economics. Communities with no natural resources or resources that are not economically viable do not receive the same urgency in treaty talks as communities useful to economic development. Research that investigates income inequality and social capital may document how state interests pander to economic pressures rather than an internalization of social status. Treaty talks include many varied aspects of social life, and once the state recognizes the economic returns of signing a treaty, many other social determinants of health may also be affected.

Social capital determines whether social programs will be available to a community and the ways in which they will function. In the act of recognition, the state determines who they will work with to develop social programs. By recognizing First Nations, Métis, and Inuit, the federal government admits to their being an integral part of society. The act of inclusion in social program development results in the functioning of a citizen-developed social program. This could also be called sharing and caring, whereby the participants of a relationship acknowledge that they need to share. The participants, who care for each other, allow those utilizing the social program to determine its function. The act of recognition embeds a group within society. However, this does not necessitate the group's equal participation in society. Social programs that are developed for specific populations embedded in society need to include these populations in their development, or they will not be successful at meeting the needs and goals of the population. By including a population in the development of social programs, integrity is established between the population and society at large.

Social relationships between organizations or groups and the state partially determine the social programs accessible to the constituents represented by the organizations or groups. Therefore, the type of relationship is more important than the number of relationships. A relationship may be restrictive or respectful, ranging from a partnership to colonial rule. Relationships that result in social programs need to be respectful and incorporate elements that recognize and include the population for which the social program is developed.

Variations in Aboriginal health between health service delivery areas (HSDA) in British Columbia do not conform to the volumes of research demonstrating increased socio-economic

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60 When equal participation is realized.
status (SES) increases health status. On the contrary, health service delivery areas with an Aboriginal population that has a high socio-economic status have the poorest health while Aboriginals in HSDAs with low SES report the best health status. This variation could be accounted for by the number of communities that participate in relationships with the Canadian government that promote self-determination. The HSDAs that have more First Nation communities participating in health transfer and the British Columbia Treaty Commission process with more First Nations on-reserve have better health than HSDAs with few communities participating in these relationships and large off-reserve populations. HSDAs that have more Aboriginal organizations and services also have higher off-reserve populations and lower health status. These finding suggest that relationships promoting equal participation in the development of social programs improves the health status of those who utilize those social programs.
APPENDICES
**APPENDIX A**

**TABLES**

Table 1 Estimated Life Expectancy at Birth, Total and Aboriginal Populations, 1991 (RRCAP, 1996).

<table>
<thead>
<tr>
<th>Population</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total population</td>
<td>74.6</td>
<td>80.9</td>
</tr>
<tr>
<td>Total Aboriginal population</td>
<td>67.9</td>
<td>75.0</td>
</tr>
<tr>
<td>Total, North American Indians</td>
<td>68.0</td>
<td>74.9</td>
</tr>
<tr>
<td>Registered North American Indians</td>
<td>66.9</td>
<td>74.0</td>
</tr>
<tr>
<td>On-reserve</td>
<td>62.0</td>
<td>69.6</td>
</tr>
<tr>
<td>Non-reserve, rural</td>
<td>68.5</td>
<td>75.0</td>
</tr>
<tr>
<td>Non-reserve, urban</td>
<td>72.5</td>
<td>79.0</td>
</tr>
<tr>
<td>Non-Registered North American Indians</td>
<td>71.4</td>
<td>77.9</td>
</tr>
<tr>
<td>Rural</td>
<td>69.0</td>
<td>75.5</td>
</tr>
<tr>
<td>Urban</td>
<td>71.5</td>
<td>78.0</td>
</tr>
<tr>
<td>Inuit</td>
<td>57.6</td>
<td>68.8</td>
</tr>
</tbody>
</table>

*Note: * North American Indians includes all who self-identified as North American Indian on the 1991 Aboriginal Peoples Survey, whether or not they are registered under the *Indian Act*.


<table>
<thead>
<tr>
<th>Years</th>
<th>Registered Indians</th>
<th>Total Population</th>
<th>Registered Indians</th>
<th>Total Population</th>
<th>Registered Indians</th>
<th>Total Population</th>
</tr>
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<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978-81</td>
<td>61.6</td>
<td>71.0</td>
<td>39.5</td>
<td>43.4</td>
<td>18.4</td>
<td>17.5</td>
</tr>
<tr>
<td>1982-85</td>
<td>64.0</td>
<td>72.4</td>
<td>40.8</td>
<td>44.4</td>
<td>17.9</td>
<td>18.0</td>
</tr>
<tr>
<td>1990</td>
<td>66.9</td>
<td>73.9</td>
<td>41.1</td>
<td>45.7</td>
<td>16.9</td>
<td>19.0</td>
</tr>
<tr>
<td>Female</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1978-81</td>
<td>69.0</td>
<td>79.2</td>
<td>44.0</td>
<td>50.7</td>
<td>21.4</td>
<td>23.4</td>
</tr>
<tr>
<td>1982-85</td>
<td>72.8</td>
<td>80.1</td>
<td>46.8</td>
<td>51.4</td>
<td>22.5</td>
<td>23.8</td>
</tr>
<tr>
<td>1990</td>
<td>74.0</td>
<td>80.5</td>
<td>46.7</td>
<td>51.6</td>
<td>20.5</td>
<td>23.7</td>
</tr>
</tbody>
</table>

*Notes:*
1. Total population is the total population of Canada, including Aboriginal persons.
2. Life expectancies at age 30 and 60 for registered Indians in 1990 are the average life expectancies for ages 30-34 and 60-64 respectively. *Source: Health and Welfare Canada, "Health Indicators Derived from Vital Statistics for Status Indian and Canadian Populations, 1978-1986"
Table 3 Selected Causes of Death as a Percentage of All Deaths, 1992 (Adapted From RRCAP, 1996). (Source: Health Canada, Medical Services Branch, Unpublished Tables, May 1995.)

<table>
<thead>
<tr>
<th>Cause</th>
<th>Registered Indians</th>
<th>Total Population</th>
<th>Registered Indians</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td></td>
<td></td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td>Infectious</td>
<td>1.9</td>
<td>1.9</td>
<td>2</td>
<td>0.9</td>
</tr>
<tr>
<td>Neoplasms</td>
<td>11.7</td>
<td>28.8</td>
<td>15.9</td>
<td>32.2</td>
</tr>
<tr>
<td>Circulatory</td>
<td>22.4</td>
<td>37.1</td>
<td>26.7</td>
<td>47.2</td>
</tr>
<tr>
<td>Respiratory</td>
<td>6.8</td>
<td>8.9</td>
<td>9.8</td>
<td>9.3</td>
</tr>
<tr>
<td>Injuries</td>
<td>33.5</td>
<td>8.6</td>
<td>18.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Other</td>
<td>23.7</td>
<td>14.7</td>
<td>27.4</td>
<td>5.2</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Type</th>
<th>Registered Indians</th>
<th>Total Population</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
</tr>
<tr>
<td>Motor Vehicle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accidents</td>
<td>59.7</td>
<td>24.7</td>
</tr>
<tr>
<td>Accidental</td>
<td>9.9</td>
<td>7.1</td>
</tr>
<tr>
<td>Falls</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fire</td>
<td>12.1</td>
<td>6.6</td>
</tr>
<tr>
<td>Drowning</td>
<td>20.8</td>
<td>3.1</td>
</tr>
<tr>
<td>Suicide</td>
<td>51.5</td>
<td>15.1</td>
</tr>
<tr>
<td>Poisoning</td>
<td>21.1</td>
<td>11.7</td>
</tr>
</tbody>
</table>

*Note:* Death rates per 100,000 population.

Table 5 Government Transfer Payments as a Percentage of Income, 15 Years and Older Not Attending School Full Time (Hull, 2000).

<table>
<thead>
<tr>
<th></th>
<th>Registered Indian</th>
<th>Other Aboriginal</th>
<th>Other Canadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>In CMA⁶¹</td>
<td>26.0</td>
<td>18.7</td>
<td>11.8</td>
</tr>
<tr>
<td>Female</td>
<td>34.2</td>
<td>26.2</td>
<td>27.4</td>
</tr>
<tr>
<td>Male</td>
<td>24.5</td>
<td>16.9</td>
<td>17.2</td>
</tr>
<tr>
<td>On reserve</td>
<td>34.4</td>
<td>24.2</td>
<td>26.1</td>
</tr>
<tr>
<td>Rural off reserve</td>
<td>23.8</td>
<td>21.7</td>
<td>16.6</td>
</tr>
</tbody>
</table>

Source: Department of Indian Affairs and Northern Development, custom tabulations, 1996 Census of Canada.

Table 6 Labour Force Participation Rates Population 15+ Not Attending School Full Time (Source: Department of Indian Affairs and Northern Development, Custom Tabulations, 1996 Census of Canada. Adapted From Hull, 2000).

<table>
<thead>
<tr>
<th>Registered Indians</th>
<th>Métis</th>
<th>Inuit</th>
<th>Other Aboriginal</th>
<th>Other Canadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>59.0</td>
<td>70.4</td>
<td>65.8</td>
<td>69.1</td>
<td>67.7</td>
</tr>
</tbody>
</table>

Table 7 Unemployment Rates Population 15years+ Not Attending School Full Time (Source: Department Of Indian Affairs and Northern Development, Custom Tabulations, 1996 Census Of Canada. Adapted From Hull, 2000).

<table>
<thead>
<tr>
<th>Registered Indians</th>
<th>Other Aboriginal</th>
<th>Métis</th>
<th>Inuit</th>
<th>Other Canadian</th>
</tr>
</thead>
<tbody>
<tr>
<td>17.7%</td>
<td>19.3</td>
<td>19.1</td>
<td>21.4</td>
<td>8.7</td>
</tr>
</tbody>
</table>

Table 8 Employment Rates Population 15+ Not Attending School Full Time (Source: Department Of Indian Affairs and Northern Development, Custom Tabulations, 1996 Census Of Canada. Adapted From Hull, 2000).

<table>
<thead>
<tr>
<th>Registered Indians</th>
<th>Other Aboriginals</th>
<th>Métis</th>
<th>Inuit</th>
<th>Other Canadians</th>
</tr>
</thead>
<tbody>
<tr>
<td>43.4</td>
<td>55.8</td>
<td>56.9</td>
<td>51.8</td>
<td>61.8</td>
</tr>
</tbody>
</table>

⁶¹ CMA – Census metropolitan area
Table 9 Health Regions and Respective Health Service Delivery Areas (Source: BC PHO, 2002).

<table>
<thead>
<tr>
<th>Health Region</th>
<th>Health service delivery area (HSDA)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 East Kootenay</td>
<td>11/12 East Kootenay/Kootenay Boundary</td>
</tr>
<tr>
<td>2 West Kootenay Boundary</td>
<td></td>
</tr>
<tr>
<td>3 North Okanagan</td>
<td>13 Okanagan</td>
</tr>
<tr>
<td>4 Okanagan Similkameen</td>
<td></td>
</tr>
<tr>
<td>5 Thompson</td>
<td>14 Thompson Cariboo Shushwap</td>
</tr>
<tr>
<td>12 Cariboo</td>
<td></td>
</tr>
<tr>
<td>6 Fraser Valley</td>
<td>21 Fraser Valley</td>
</tr>
<tr>
<td>8 Simon Fraser</td>
<td>22 Simon Fraser</td>
</tr>
<tr>
<td>17 Burnaby</td>
<td></td>
</tr>
<tr>
<td>7 South Fraser Valley</td>
<td>23 South Fraser</td>
</tr>
<tr>
<td>19 Richmond</td>
<td>31 Richmond</td>
</tr>
<tr>
<td>16 Vancouver</td>
<td>32 Vancouver</td>
</tr>
<tr>
<td>9 Coast Garibaldi</td>
<td>33 North Shore/Coast Garibaldi</td>
</tr>
<tr>
<td>18 North Shore</td>
<td></td>
</tr>
<tr>
<td>20 Capital</td>
<td>41 South Vancouver Island</td>
</tr>
<tr>
<td>10 Central Vancouver Island</td>
<td>42 Central Vancouver Island</td>
</tr>
<tr>
<td>11 Upper Island Central Coast</td>
<td>43 North Vancouver Island</td>
</tr>
<tr>
<td>13 North West</td>
<td>51 North West</td>
</tr>
<tr>
<td>15 Northern Interior</td>
<td>52 Northern Interior</td>
</tr>
<tr>
<td>14 Peace Liard</td>
<td>53 North East</td>
</tr>
<tr>
<td>Health service delivery area (HSDA)</td>
<td>Number of communities in health transfer 1999</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>51 Northwest</td>
<td>14</td>
</tr>
<tr>
<td>14 Thompson Cariboo Shuswap</td>
<td>20</td>
</tr>
<tr>
<td>52 Northern Interior</td>
<td>9</td>
</tr>
<tr>
<td>32 Vancouver</td>
<td>1</td>
</tr>
<tr>
<td>41 South Vancouver Island</td>
<td>9</td>
</tr>
<tr>
<td>42 Central Vancouver Island</td>
<td>10</td>
</tr>
<tr>
<td>33 North Shore/Coast Garibaldi</td>
<td>3</td>
</tr>
<tr>
<td>21 Fraser Valley</td>
<td>10</td>
</tr>
<tr>
<td>13 Okanagan Fraser Valley</td>
<td>3</td>
</tr>
<tr>
<td>43 North Vancouver Island</td>
<td>19</td>
</tr>
<tr>
<td>23 South Fraser</td>
<td>1</td>
</tr>
<tr>
<td>22 Simon Fraser</td>
<td>0</td>
</tr>
<tr>
<td>53 Northeast</td>
<td>0</td>
</tr>
<tr>
<td>11/12 East Kootenay/Kootenay boundary</td>
<td>4</td>
</tr>
<tr>
<td>31 Richmond</td>
<td>0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Health service delivery area (HSDA)</th>
<th>ASMR cancer</th>
<th>ASMR ischemic heart disease</th>
<th>ASMR Chronic liver disease/cirrhosis</th>
<th>ASMR Alcohol related deaths</th>
<th>ASMR Drug induced deaths</th>
<th>external causes PYLL</th>
</tr>
</thead>
<tbody>
<tr>
<td>11/12 East Kootenay/Kootenay boundary</td>
<td>42.4</td>
<td>30.4</td>
<td>5.4</td>
<td>33.9</td>
<td>3.0</td>
<td>51.8</td>
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<th>ASMR infectious &amp; parasitic diseases</th>
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Note: Causes of death are the top 15 for Status Indians based on ASMR.
Table 13 Aboriginal Populations by Health Service Delivery Area and Health Region

<table>
<thead>
<tr>
<th>Health Service Delivery Area (HSDA)</th>
<th>2001 Status Indian Population Estimates By HSDA</th>
<th># Of Bands In Health Regions</th>
<th># Of Bands In Health Regions</th>
<th>Off-Reserve Aboriginal Pop 1996 Census</th>
<th>Total Aboriginal Pop, 1996</th>
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APPENDIX B

FIGURES

Figure 1 Local Health Area Map (source: BCPHO, 2002).

FIGURE 1
LOCAL HEALTH AREA MAP
BRITISH COLUMBIA
Figure 2 Health Authority & Health Service Delivery Area Map (source: BCPHO, 2002).

**Figure 2**

Health Authority & Health Service Delivery Area Map
BRITISH COLUMBIA

**Legend**

- HA: Health Authority
- HSDA: Health Service Delivery Area
- LHA: Local Health Area

Note: Richmond Health Service Delivery Area boundary is coterminous with Richmond LHA. See Figure 1 for LHA clarification.

Health Authorities:
- 01 Interior
- 02 Fraser
- 03 Vancouver Coastal
- 04 Vancouver Island
- 05 Northern
- 06 Provincial Health Services Authority

Health Service Delivery Areas:
- 11 East Kootenay
- 12 Kootenay Boundary
- 13 Okanagan
- 14 Thompson Cariboo Shuswap
- 21 Fraser East
- 22 Fraser North
- 23 Fraser South
- 31 Richmond
- 32 Vancouver
- 33 North Shore Coast Garibaldi
- 41 South Vancouver Island
- 42 Central Vancouver Island
- 43 North Vancouver Island
- 51 Northern
- 52 Northern Interior
- 53 Northeast
Figure 3 British Columbia Health Regions (source: BCPHO, 2002).

British Columbia - Health Regions

1. East Kootenay
2. West Kootenay-Boundary
3. North Okanagan
4. Okanagan Shuswap
5. Thompson
6. Fraser Valley
7. South Fraser Valley
8. Simon Fraser
9. Coast Salish
10. Central Vancouver Island
11. Upper Island/Central Coast
12. Cariboo
13. North West
14. Peace-Lillooet
15. Northern Interior
16. Vancouver
17. Burnaby
18. North Shore
19. Richmond
20. Capital

Prepared by: Health Information Access Centre, Ministry of Health Services
Boundary Source: BC STATS, Ministry of Management Services
Figure 4 British Columbia – Health Services Delivery Areas (source: BCPHO, 2002).

British Columbia - Health Services Delivery Areas

Prepared by: Health Information Access Centre, Ministry of Health Services
Boundary Source: BC Stats, Ministry of Management Services

Note: The Nisga’a Health Council will remain an independent health authority.
Figure 5 Aboriginal Population by Health Region (source: BCPHO, 2002).

Total & Off Reserve Aboriginal population by health region (source: British Columbia Provincial Health Officer Report)

<table>
<thead>
<tr>
<th>Health Region</th>
<th>of-reserve aboriginal pop 1996 census</th>
<th>total aboriginal pop, 1996</th>
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</tr>
<tr>
<td>20</td>
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Figure 6 Total Aboriginal Populations by Health Service Delivery Area (BCPHO, 2002).

Total aboriginal population, 1996 (source: 1996 census)

- 51 Northwest
- 32 Vancouver
- 33 North Shore/Coast Garibaldi
- 43 North Vancouver Island
- 53 Northeast
- 14 Thompson Cariboo Shuswap
- 23 South Fraser
- 21 Fraser Valley
- 22 Simon Fraser
- 23 South Fraser
- 41 South Vancouver Island
- 42 Central Vancouver Island
- 13 Okanagan
- 11/12 East Kootenay/Kootenay boundary
- 31 Richmond
Figure 7 Percentage of On-Reserve Population by Health Service Delivery Area (BCPHO, 2002).

On-reserve population (source: 1996 census data)

- 51 Northwest
- 14 Thompson Cariboo Shuswap
- 41 South Vancouver Island
- 52 Northern Interior
- 32 Vancouver
- 42 Central Vancouver Island
- 33 North Shore/Coast Garibaldi
- 21 Fraser Valley
- 13 Okanagan
- 43 North Vancouver Island
- 23 South Fraser
- 22 Simon Fraser
- 53 Northeast
- 11/12 East Kootenay/Kootenay boundary
- 31 Richmond
Figure 8 Percentage of Status Indian Population by Health Service Delivery Area.


- 51 Northwest
- 32 Vancouver
- 33 North Shore/Coast Garibaldi
- 43 North Vancouver Island
- 53 Northeast
- 14 Thompson Cariboo Shuswap
- 41 South Vancouver Island
- 21 Fraser Valley
- 23 South Fraser
- 11/12 East Kootenay/Kootenay boundary
- 52 Northern Interior
- 42 Central Vancouver Island
- 13 Okanagan
- 22 Simon Fraser
- 31 Richmond
Figure 9 Percentage of Off-Reserve Aboriginal Population by HSDA.

off-reserve aboriginal population (source: 1996 census)

- 51 Northwest
- 41 South Vancouver Island
- 13 Okanagan
- 53 Northeast
- 14 Thompson Cariboo Shuswap
- 42 Central Vancouver Island
- 43 North Vancouver Island
- 11/12 East Kootenay/Kootenay boundary
- 52 Northern Interior
- 33 North Shore/Coast Garibaldi
- 23 South Fraser
- 31 Richmond
- 32 Vancouver
- 31 Fraser Valley
- 32 Simon Fraser
Figure 10 Number of Status Indians Vs. Number of Bands in Each HSDA (BCPHO, 2002).

![Graph showing the number of status Indians vs. number of bands in each HSDA.](image)

Figure 11 Number of Bands by Health Service Delivery Area (BCPHO, 2002).

![Bar chart showing the number of bands in each HSDA.](image)
Figure 12 Percentage of Bands by Health Service Delivery Area (source: BCPHO, 2002).
Figure 13 Percentage of Bands Participating in the Health Transfer Process (source: Ten years of Health Transfer, 1999).
Figure 14 Percentage of Communities Participating in the British Columbia Treaty Process
process Bands participating identified by statement of intent filed by each First Nation)
Figure 15 Percentage of Aboriginal Organizations and Services by Health Service Delivery Area (source: Guide to Aboriginal Organizations and Services, 2002.)

Legend for Figures 12-15
51 = Northwest
14 = Thompson Cariboo Shushwap
52 = Northern Interior
32 = Vancouver
41 = South Vancouver Island
42 = Central Vancouver Island
33 = North Shore, Coast Garibaldi
21 = Fraser Valley
13 = Okanagan
43 = North Vancouver Island
23 = South Fraser
22 = Simon Fraser
53 = North East
11&12 = East Kootenay/Kootenay Boundary
31 = Richmond
Figure 16 Number of Communities in the Health Transfer Process Vs. ASMRs for Leading Causes of Death (per 10,000 population). Trend line and equation do not imply correlation they are only a representation of the best linear fit. (source: British Columbia Ministry of Health Service, Vital Statistics Agency. 1991-2001, Status Indian population. Ten years of Health Transfer, 1999).
Health transfer vs ASMR MVA

\[ y = -0.0491x + 4.0773 \]
\[ R^2 = 0.0296 \]

Health transfer vs ASMR Suicides

\[ y = 0.0457x + 2.4395 \]
\[ R^2 = 0.0732 \]

Health transfer vs ASMR Alcohol related deaths

\[ y = -0.0174x + 19.62 \]
\[ R^2 = 0.0002 \]

Health transfer vs ASMR Chronic liver disease

\[ y = -0.1687x + 4.8652 \]
\[ R^2 = 0.1046 \]

Health transfer vs ASMR Drug induced deaths

\[ y = -0.0712x + 3.8691 \]
\[ R^2 = 0.0857 \]

Note: There are three different groupings of HSDAs; the first grouping has less than 5 communities in health transfer, the second has 6 – 14 communities in health transfer and the last grouping has more than 15 communities in Health transfer. HSDAs with more communities participating in health transfer have lower ASMRs for the 9 leading causes of death amongst aboriginals.
Figure 17 Number of communities in the Health Transfer Process Vs. Life Expectancy and Potential Years of Life Lost Due to External Causes. Trend line and equation do not imply correlation they are only a representation of the best linear fit. (Source: British Columbia Ministry of Health Service, Vital Statistics Agency. 1991-2001, Status Indian population. Ten years of Health Transfer, 1999).

Health transfer vs life expectancy

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<td>0.0</td>
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<tr>
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</tr>
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</table>

Note: There are three different groupings of HSDAs; the first grouping has less than 5 communities in health transfer, the second has 6-14 communities in health transfer and the last grouping has more than 15 communities in Health transfer. HSDAs with more communities participating in health transfer have lower potential years of life lost and greater life expectancy.
BCTC LSC vs ASMR Drug induced deaths

\[ y = -0.1102x + 4.5735 \]
\[ R^2 = 0.0548 \]

BCTC vs ASMR Alcohol induced deaths

\[ y = 0.0382x + 2.4527 \]
\[ R^2 = 0.0628 \]

BCTC vs ASMR Suicide

\[ y = -0.0451x + 4.0951 \]
\[ R^2 = 0.0307 \]

BCTC vs ASMR MVA

\[ y = -0.1694x + 20.833 \]
\[ R^2 = 0.0209 \]

BCTC vs ASMR Infectious and parasitic diseases

\[ y = -7E-05x + 2.3739 \]
\[ R^2 = 5E-08 \]

Note: Two groupings are apparent in these graphs. HSDAs with less than 10 communities in the BCTC process and HSDAs with more than 10 communities in the BCTC process. HSDAs with more than 10 communities in the BCTC process have lower ASMRs than HSDAs with less than 10 communities in the BCTC process.

Note: Two groupings are apparent in these graphs, HSDAs with less than 10 communities in the BCTC process and HSDAs with more than 10 communities in the BCTC process. HSDAs with more than 10 communities in the BCTC process have lower potential years of life lost and higher life expectancy than HSDAs with less than 10 communities participating in the BCTC process.
Figure 20 Number of Listings in the GAOS vs. Age Standardized Mortality Rates for Leading Causes of Death. Trend line and equation do not imply correlation they are only a representation of the best linear fit. (source: British Columbia Ministry of Health Service, Vital Statistics Agency. 1991-2001, Status Indian population. Guide to Aboriginal Organizations and Services, 2002.)

GAOS vs ASMR Cancer
\[ y = -0.3289x + 35.27 \]
\[ R^2 = 0.1171 \]

GAOS vs ASMR Chronic liver disease/ cirrhosis
\[ y = 0.0326x + 2.6088 \]
\[ R^2 = 0.1474 \]

GAOS vs AMR pneumonia & influenza
\[ y = -0.017x + 6.3886 \]
\[ R^2 = 0.0043 \]

GAOS vs ASMR Ischemic heart disease
\[ y = -0.416x + 33.919 \]
\[ R^2 = 0.1686 \]
GAOS vs ASMR
Infectious & Parasitic diseases
\[ y = 0.1029x - 0.0611 \]
\[ R^2 = 0.7579 \]

GAOS vs ASMR
alcohol related deaths
\[ y = 0.2275x + 14.116 \]
\[ R^2 = 0.2524 \]

GAOS vs ASMR
MVA
\[ y = -0.0115x + 4.0113 \]
\[ R^2 = 0.0132 \]

GAOS vs ASMR
drug induced deaths
\[ y = 0.1011x + 1.3142 \]
\[ R^2 = 0.3085 \]
Note: Two main groupings are apparent here as well, HSDAs with less than 20 GAOS listings and HSDAs with more than 20 listings. One HSDA, Vancouver-Coastal has extraordinary amount of GAOS listings and skews the appearance of the best linear fit.

\[ y = 0.0049x + 71.617 \]
\[ R^2 = 0.0011 \]

\[ y = 0.51x + 43.904 \]
\[ R^2 = 0.5088 \]
Figure 22, Harmony Wheel

Adapted harmony wheel demonstrating interactions within the social context (FNIRHS, 1999).
A representation of the medicine wheel illustrating the components requiring balance to achieve a health state. This representation of the individual is what makes up the central component of the harmony wheel.
This diagram represents the connections within the community. The establishment and maintenance of these connections is necessary to maintain balance of the entire harmony wheel.
APPENDIX C
Survey

Letter of Initial Contact

May 1, 2003

Chief and Council

Dear Sir or Madame,

Good day, I am writing to you today to ask your participation in a research project I am facilitating in order to receive a Doctorate of Philosophy in Interdisciplinary studies, entitled: Social capital as a determinant of health within the First Nations: A critical examination of the social context. The project has two components, a survey and focus group interviews; my initial request is that you fill in and return the attached survey. Focus group participants will be contacted after the survey data has been collected. Your participation is vital to the success of this project and would be greatly appreciated.

I am familiar with the legacy that some researchers have left behind within the First Nations, a legacy of disrespect and ignorance of the First Nation peoples. As a Métis person I have been fortunate not to have experienced such misinformed individuals within a research setting but recognize the necessity of ethical and responsive research within First Nation communities. To this end I have crafted a research project that I consider primarily informed by the First Nation people. I ask that you hear the ideas I have brought together and hope that you find some truth and value within them, and inspire you to participate in this research project. I have included a brief biography detailing the experiences and the motives that have inspired me to facilitate this research project.

The purpose of this research project is to explain the variations in health status between the First Nations within British Columbia and to identify the qualities of the social relationships that permit or hinder First Nation community based developments. The variations in health status between the First Nations within British Columbia have not yet been explained; explaining these variations may serve a role in improving the overall health status of the First Nations. After years of listening and reading on First Nation health I heard a common refrain, that self-determination is vital for the First Nation people to thrive in modern society. The ability of the First Nations to successfully negotiate their role in their community’s development is dependent upon their relationship with the Canadian governments. Relationships that hinder or permit the First Nation’s ability to develop community-based initiatives may explain the variations in health status between the First Nations within British Columbia. These relationships may also embody specific qualities that could be incorporated into negotiations and policy for furthering First Nation community based initiatives leading to increased self-determination.

To explain the variations in health status between the First Nations within British Columbia I have developed a research project that has two components. The first component, a survey, is meant to identify the number of community-based initiatives within each First Nation community and will be used to gauge the effectiveness of the First Nation’s relationships with the Canadian governments. First Nation
Survey

Survey Guidelines

A band council member that is familiar with the services in their community since 1997 should fill in the survey.

Please check the corresponding box under the year that the service or program was provided, leave the box blank if the service or program was not provided during that year. Only indicate those services in place during 1997 and/or 2003.

To determine if the community provided the service it must be developed for community members and administered by the community (the working components of the service may be delegated to non-community members but must be directed by the community).

Services may include social programs and businesses owned by the community, for instance logging companies, mining companies, oil and gas companies or any related industry service that is owned by the community.

Service provision must be provided on a regular basis, at least three times a week or when the service is only required on an occasional/emergency basis there should be a permanent organizational structure that permits the service delivery in a timely manner. For instance, court services may not be needed constantly, but when in need the court service can be put into place instantly to address the problem. Or, ambulance and fire services may be voluntary but their organizational structure permits instantaneous service delivery when required.

The service must be provided within the community. Your community is to be determined by yourself where the service is required. For instance, education programs may be in a geographic location (closest town or city) other than your community’s geographic location (i.e. on a reservation), but provide a service directly to your community members.
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<th>Administrative Heading</th>
<th>Community Based Initiatives</th>
<th>1997</th>
<th>2003</th>
<th>Not applicable</th>
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<td><strong>Education</strong></td>
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<td>1. Preschool/daycare</td>
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<td>4. Post secondary support</td>
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<td>5. Language programs</td>
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<td>6. Interpretive/cultural centre</td>
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<td>10. Home school support</td>
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<td>11. Education counselling</td>
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<td><strong>Justice</strong></td>
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<td>12. Community police</td>
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<td>16. By-law enforcement</td>
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<td><strong>Health Care</strong></td>
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<td>17. Transfer agreement complete</td>
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<td>18. Healing centre</td>
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<td>20. Counselling services</td>
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<td>26. Pre/postnatal care</td>
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APPENDIX D

Glossary

Linkage social capital[^62^], defined in the context of this research is a derivative of current literature on social capital theory. Linkage social capital is used as such to bring together elements of social development theory, practice, the political context, and issues related to population health. It is applied with the context of this thesis as a tool to aide in the transformation processes of decolonization by identifying relationships that result in social services while increasing Aboriginal inclusion in their development and delivery. And, to explore how these relationships as social characteristics are observable across different populations which may account for the variations in health status between these populations.

There are many different approaches to social capital theory; most disciplines including economics, sociology and social epidemiology utilize different definitions. Economists primarily count the number of networks that produce a commodity while sociologist talk about the power relations and share discussions with political theorists on the creation and maintenance of civil society. There is plenty of research on social capital studying volunteerism, voter participation, and trust. The conceptualizations that these social theorists use do not include every level of interaction, neglecting the macro level interactions with the state. Incorporating these interactions will provide a tool to evaluate the responsiveness of the state to the people goals and needs.

Current definitions of social capital are not suited for this level of examination as they focus on individual interactions/relationships with society. Borrowing from Mignone (2003), I define linkage social capital as those relationships formed between a group of individuals and a level of government, municipal, provincial or federal, which result in a social service. For the purposes of this paper I examine some relationships that occur between the federal and provincial government and First Nations in British Columbia.

[^62^] There have been many developments in the area of measuring social capital since the completion of this research. The Organisation for Economic Co-operation and Development and the Canadian governments Policy Research Initiative has funded and published many research endeavours into developing this concept and its' measurement. Any research endeavouring to explore social capital should include these works.
I do not specify any qualities of these relationships a priori as this would predetermine the nature of relationships that promote health. Although I do rely on the social development theories of indigenous theory to inform the research of the current political context and sovereignty issues within the Aboriginal context of decolonization. This identifies the context of where these relationships are taking place.

The amount of *linkage social capital* produced is determined by the extent of inclusion in the development of social services. High levels of inclusion result in more *linkage social capital*, while low levels of inclusion result in less *linkage social capital*. Inclusion is comprised of the number of relationships and the quality or depth of inclusion. Inclusion varies from high i.e. self-determination to low i.e. colonization. High levels of inclusion results in social services that are produced by the population who also access and utilize this service; while, low levels of inclusion result in paternalistic social services that are produced for a population by the government. Residential schools for Aboriginals in Canada are an archetypical example of low inclusion.

**Charter of Rights and Freedoms**

- **25.** The guarantee in this Charter of certain rights and freedoms shall not be construed so as to abrogate or derogate from any aboriginal, treaty or other rights or freedoms that pertain to the aboriginal peoples of Canada including
  - a) any rights or freedoms that have been recognized by the Royal Proclamation of October 7, 1763; and
  - b) any rights or freedoms that now exist by way of land claims agreements or may be so acquired.

- **35.** (1) The existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.
  
  (2) In this Act, "aboriginal peoples of Canada" includes the Indian, Inuit and Métis peoples of Canada.

**Indian Act (R.S. 1985, c. I-5)**
4. (1) A reference in this Act to an Indian does not include any person of the race of aborigines commonly referred to as Inuit.

The working definition of health in this research project follows a holistic conceptualization common amongst Indigenous populations. It includes spirituality, mental (intellect), physical, and emotional individual elements and reaches beyond to include the social realm of family, community, and nature. This research attempts to demonstrate how elements of health, especially those of the social world (community) effects the individual element of physical health.


Province Of British Columbia Coastal Zone Position Paper June 1998 Prepared by Government of British Columbia Resource Management (Chair)


British Columbia, Ministry of Community, Aboriginal and Women’s Services (2003). Personal Communication, Victoria, BC.


First Nation’s Chief’s Health Committee (2003). Personal communication, North Vancouver, BC.


