University of Alberta

Understanding the Role of Social Capital in Oral Health of First Nations Children

by

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Dedication

To my great family,

for all their support and sacrifices during this long journey.

Abstract

Objectives: To explore how the concept of social capital can be utilized to generate ideas for a First Nations community oral health initiative.

Methods: A qualitative case study design was employed. An interview guide developed based on Putnam's concept of social capital directed 7 individual and 2 focus group interviews. Interviews were recorded and transcribed verbatim.

Results: While a strong bonding social capital was found among the members of this close-knit community, an obvious need for improvement of bridging social capital to reach external resources was observed. Access to preventive measures and dental care seemed to be major barriers to oral health for this community. Mobilizing or building community's social capital can play a role when planning future interventions.

Conclusions: A better understanding of social capital may enhance the Band's investment and productivity as they strive to improve oral health outcomes by enforcing healthy oral behaviors and to improve access to external resources.

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- And finally, but importantly, my wonderful family who supported and bore with me during this long journey.

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List of Abbreviations

AA Alcoholics Anonymous

AAP American Academy of Pediatrics

ACCFCR Alberta Centre for Child, Family and Community Research

CAPHD Canadian Association of Public Health Dentistry

CBRs community-based researchers

CIHR Canadian Institutes for Health Research

COHI Children Oral Health Initiative

CAC Community Advisory Committee

CTP Caries Transmission Prevention

dmfs decayed, missed, filled surfaces

ECC Early Childhood Caries

FNIHB First Nations and Inuit Health Branch – Health Canada

FNOHS First Nations Oral Health Survey

HCA Health Community Assistant

HIV Human Immunodeficiency Virus Infection

IADR International Association of Dental Research

ID# Identification Number

IGIRS Intergenerational Impact of Residential Schools

RHS First Nations Regional Health Survey

SES Socioeconomic Status

STD Sexually Transmitted Diseases

TA Teaching Assistant

WHO World Health Organization

Chapter One: Early Childhood Caries (ECC)

The World Health Organization (WHO) defines oral health as:

> "A state of being free from chronic mouth and facial pain, oral and throat cancer, oral sores, birth defects such as cleft lip and palate, periodontal (gum) disease, tooth decay and tooth loss, and other diseases and disorders that affect the oral cavity. Risk factors for oral diseases include unhealthy diet, tobacco use, harmful alcohol use, and poor oral hygiene." (WHO, 2012a)

According to this definition dental caries is one of the elements that deteriorates oral health and recognized as one of the most common oral diseases by this organization (WHO, 2012a). Dental caries affects both children and adults, though the prevalence of this disease in preschool children is staggering.

Early childhood caries (ECC) has been a major public health issue for many years, and still is today, with biological, social, and behavioural determinants (Twetman, 2008). It affects the normal growth and development of children in many different ways. Despite the advances in understanding the factors that cause the development of this preventable disease, dental caries in preschool children is still considered as a serious oral health issue. ECC affects significant aspects of children's social and behavioural characteristics (Vadiakas, 2008). In this chapter, the definition, prevalence, consequences, and aetiology (biological and non-biological) of this phenomenon will be discussed.

1.1 Definition

Dental decay in preschool children has been defined as a health issue with special clinical characteristics. This disease was originally recognized as a unique

pattern of decays in primary maxillary incisors of children linked with a nursing habit. Fass described this condition in his article and coined the term "nursing bottle mouth" (Fass, 1962).

Since 1962, many different terms have been used to describe this form of rampant caries such as baby bottle tooth decay, nursing bottle syndrome, and nursing caries (Arkin, 1986; Ripa, 1988). Improper feeding habits as the main etiology of this disease were the focus of the above terms. Although inappropriate feeding habits may influence the incidence and prevalence of this disease, they are certainly not the only main factor responsible for development of this condition (S. Reisine & Douglass, 1998). For more consistent identification of this complicated and multifaceted condition and to avoid inconsistencies in literature, the Centers for Disease Control and Prevention held a workshop to establish the term "Early Childhood Caries" for this type of dental caries. The rationale behind using such a term was to capture a much broader meaning in addressing this infectious disease, capable of affecting primary teeth. In addition, this term can be used to distinguish many of the interacting factors that have potential to contribute to the initiation and persistence of such a disease (Vadiakas, 2008).

By definition, early childhood caries is a broad term that relates to all cavitated and non-cavitated lesions in the primary teeth of toddlers, infants, and young children. The American Academy of Pediatric Dentistry identified ECC as "the presence of one or more decayed (non-cavitated or cavitated lesion), missing (due to caries), or filled-tooth surfaces in any primary tooth in a child 71 months of age or younger. In children younger than 3 years of age, any sign of smooth-surface caries is indicative of severe early childhood caries (S-ECC). From ages 3 through 5, one or more cavitated, missing (due to caries), or filled smooth surfaces in primary maxillary anterior teeth or a decayed, missing or filled score

of ≥ 4 (age 3), ≥ 5 (age 4), or ≥ 6 (age 5) surfaces constitutes S-ECC" (American Academy of Pediatric Dentistry, 2008).

1.2 Prevalence

Although marked improvements have been made over the past few decades in the understanding of dental caries, dental caries is still counted as the most common chronic disease of childhood worldwide - particularly among underprivileged groups in developed and developing countries. Despite the fact that it is largely preventable, its prevalence is five times more than asthma, and seven times more than hay fever (U.S. Department of Health and Human Services, 2000).

A reported increased prevalence of dental caries for children aged 2 to 5 years (Dye et al., 2007) combined with its growing health concern in Canada, motivated a multidisciplinary conference on "Early Childhood Caries" held in Calgary in 2007. The focus of this conference was to discuss the latest research about ECC and to explore how health care professionals in various disciplines and community stakeholders can work in cooperation to establish new interventions that decrease the rates of this preventable but common disease (JDCA, 2007/ 2008).

In a review of the literature surrounding ECC, different prevalence rates are reported for developed and developing countries. The prevalence of ECC was estimated to range from 1% to 12% in infants in developed countries (Schroth & Moffatt, 2005). However, a recent nation-wide prevalence for ECC in Canada is not available. Some Canadian studies, published before 2000, have reported a prevalence of less than 5% in the general population (Schroth & Moffatt, 2005). Provincial reports of the prevalence and severity of dental decay in young children are also available for some provinces in Canada.

In Edmonton, Alberta, dental examination of a group of children of South Asian descent aged 2 to 5 years showed that 28% of 3 to 4 year old children and 62% of 5 year olds experienced obvious caries (Williams & Hargreaves, 1990). In another study, a random sample of 938 nineteen-month-old infants was examined in Edmonton. In 25% of these infants a moderate to high caries activity was detected (Weinstein, Smith, Fraser-Lee, Shimono, & Tsubouchi, 1996). A 2005 dental survey of the Calgary Health Region demonstrated that 37% of the participating children had dental decay and that 2% of those children required urgent dental care (Calgary Health Region, 2005). In the following year, another report from the same health region identified that 28% of preschool children had decalcified lesions and that 11% were showing obvious decay (Calgary Health Region, 2006). The result from an oral health-screening exam for all five-year-old preschool children in British Columbia showed that 11% of them had caries (Bassett, MacDonald, & Woods, 1999). Another report from Ontario in 2001 showed that over 30% of five-year-olds and 41% of seven-year-olds had obvious caries. According to this report, approximately 7% of these children were experiencing at least one condition that required urgent care (J. Leake & Stewart, 2001).

Dental caries is not evenly distributed among infants and young population. There is a disproportionately concentrated prevalence in preschool children from low-income families and racial/ethnic minorities including immigrants and Aboriginals. The prevalence of ECC in Canadian Aboriginal populations has been reported to range from 25% to 72% compared with a prevalence rate of less than 5% in the general population (Peressini, Leake, Mayhall, Maar, & Trudeau, 2004). The collected data by calibrated dental professionals through oral health assessments showed that the Aboriginal children aged 3-5 years had 5 times more tooth decay than children did in similar ages elsewhere in Canada (Schroth, Harrison, Lawrence, & Peressini, 2008). The prevalence of caries is particularly high in First Nations children who live in First

Nations communities. First Nations Regional Health Survey (RHS) – Phase 2-2008/10 (2012) reported 18.7% of infants from birth to 2 years of age and 30.9% of preschoolers aged 3 to 5 years were affected by dental caries. This report showed an increased prevalence of dental caries in First Nations children compared to the same report for year 2002 and 2003, in which the reported prevalence was 11.9% and 29.4%, respectively (First Nations Regional Longitudinal Health Survey (RHS) 2002/03, 2005). A Manitoba study found that the prevalence of ECC among 3 to 5 years old children in a First Nations community was above 90% (Schroth, Moore, & Brothwell, 2005). Another study in 2004/05 examining children 2 to 6 years of age in Inuvik Region, Northwest Territories found that 66% of the children exhibited dental caries and, on average, each individual had 4.8 affected teeth (J. Leake, Jozzy, & Uswak, 2008).

Surprisingly, these high rates of ECC are happening despite the fact that the First Nations and Inuit children have access to dental care free of charge through the dental therapists in reserves and third party reimbursement provided under the Non-insured Health Benefits Program of Health Canada (First Nations and Inuit Health Branch, 2011). In short, Aboriginal children are experiencing much higher rates of dental caries compared to their counterparts in the general population. Significant disparities in caries prevalence between off-reserve Aboriginal and Non-Aboriginal children who live in the same location and even between Aboriginal children living on- and off-reserve have also been reported (Lawrence et al., 2009). For example, Aboriginal pre-school children who lived on reserve experienced caries at twice the rate of Aboriginal children who lived off the reserve. In the same study, the higher prevalence of ECC (2.3 to 2.5 times) was experienced by off-reserve Aboriginal children compared with their non-Aboriginal children counterparts (Lawrence et al., 2009).

1.3 Consequences

The consequences of early childhood caries are broad and striking and may cause a variety of problems for young children. The physical manifestations of ECC include pain, infection and abscess, difficulty chewing with consequent malnutrition, gastrointestinal disorders, insufficient physical development, and a higher risk of new carious lesions in both primary and permanent dentitions (Misra, Tahmassebi, & Brosnan, 2007). The social consequences of ECC include an increased number of visits to the emergency room with potential hospitalization, increased treatment costs and time, and loss of school days and increased days with restricted activity owing to the disease or treatment interventions (Hollister & Weintraub, 1993). The psychological consequences of ECC include reduced self-esteem because of less than optimal appearance, improper speech development, and a diminished ability to learn (Ramage, 2006). In summary, ECC causes a significant decline in oral health and by extension, quality of life of children (Thomas & Primosch, 2002).

1.4 Aetiology

Early childhood caries is a major public health issue with biological, social, and behavioral determinants (Twetman, 2008). It is a complex and multi-faceted chronic and transmissible infectious disease. It occurs as the result of a time-specific interaction of bacteria with sugars on a tooth surface (Borutta, Wagner, & Kneist, 2010). Historically, researchers focused on the biological determinants of ECC. More recently, researchers in this field have begun to expand basic biological models of the development of ECC to include various social, demographic, and behavioral determinants such as ethnicity, family income, parents' educational level, family status, and parental knowledge. By using this model, it becomes possible to explain the level of influence attributed to

the other determinants in the development of this disease (Hallett & O'Rourke, 2003). In the following section, the different determinants of ECC are discussed.

1.4.1 Biological Determinants (Factors)

The three key biological casual factors for development of ECC are microorganisms, substrate, and host. The fourth factor – time – was added later by Konig in 1971 to this schema (Borutta, Wagner, & Kneist, 2010). Figure 1 - 1 represents these factors graphically.

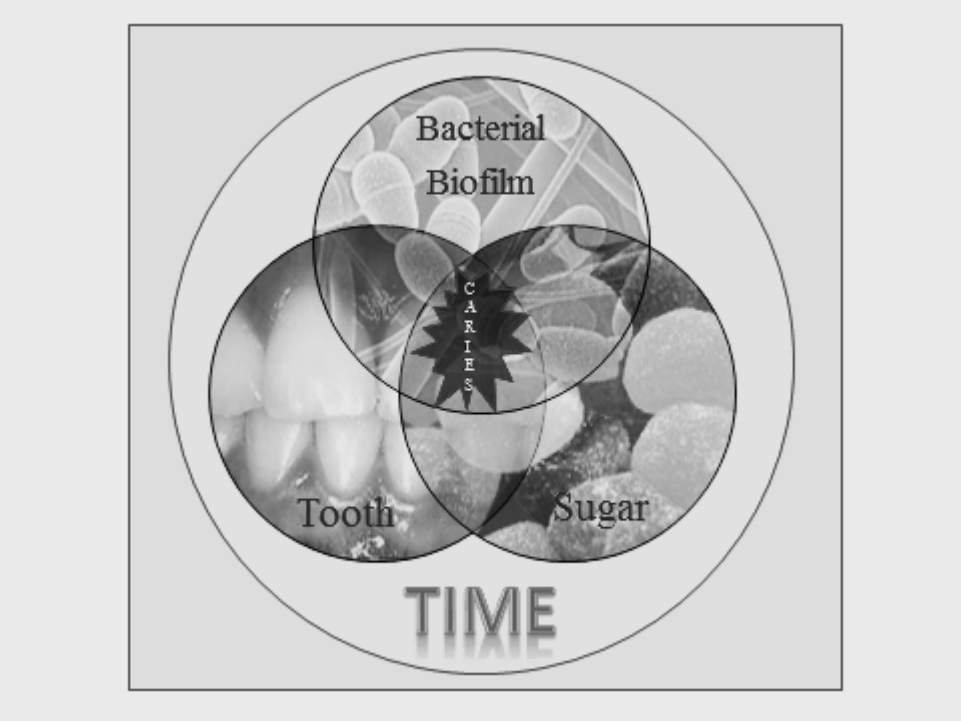

Figure 1-1: Major biological factors responsible for development of dental caries

1.4.1.1 Cariogenic microorganisms: The most important strain of bacteria for initiation of caries in young children is *Streptococci Mutans* (Borutta, Wagner, & Kneist, 2010). In both plaque and saliva samples of children with ECC, high levels of *S. Mutans* were identified (Vadiakas, 2008). In one study

conducted on a random sample of young children, after accounting for age and ethnicity, children with high levels of *S. Mutans* were 5 times more likely to have tooth cavities than children with lower levels has (Milgrom et al., 2000).

Timing of primary colonization of *S. Mutans* inside the oral cavity is also important for the initiation and progress of dental caries in preschool children. In a longitudinal study, researchers described a higher dmfs (decayed, missed, filled surfaces) score at the age of 4 in children with *S. Mutans* harbored at 2 years old compared to the other children in whom colonization happened later (Alaluusua & Renkonen, 1983). After an initial colonization during the first year of life was reported, the infection risk of *S. Mutans* increased as children grow older (Vadiakas, 2008).

Microbiological studies indicate that the major source of *S. Mutans* infections in infants and toddlers originates from their mothers via vertical transmission, with the principal vehicle in this transfer being saliva (Vadiakas, 2008). *S. Mutans* may also stem from other sources: a horizontal mode of transmission is one explanation for the detection of genotypes of *S. Mutans* that are not found in the mothers or other family members, such as *S. Mutans* isolated from other children who attend the same day care facility (Vadiakas, 2008).

1.4.1.2 Substrate: Dietary sugars (the main and primary one being sucrose; though fructose and galactose are included as well) and other fermentable carbohydrates (such as white and refined flour) play a major role in the caries process. Sucrose is the only sugar that, when metabolized by bacteria, leads to dextrans production, enabling microorganisms to adhere firmly to the tooth surface and inhibiting diffusion properties of the plaque (Vadiakas, 2008). In the development of ECC, the frequency of sugar consumption is more important than the total weight of sugar in the diet. Dietary factors such as,

frequency, timing, and the amount of sugar intake are significantly associated with the development of ECC (Vadiakas, 2008).

1.4.1.3 Host/Susceptible tooth: There are varieties of host factors that can make particular teeth susceptible to dental caries. These may include tooth developmental defects (*e.g.* enamel hypoplasia), reduced salivation, and immunological factors.

When teeth initially erupt into the oral cavity, the enamel is immature and an enamel maturation process is necessary for the teeth to become less prone to decay over time. The availability of particular ions such as fluoride in the oral cavity can facilitate enamel maturation (Simmer & Hu, 2001).

Many research groups have investigated a significant relationship between developmental defects of the tooth surface and dental caries. Developmental disturbances in the tooth germ layer during prenatal period may result in the loss of integrity of the enamel surface. This can allow more plaque accumulation on what would otherwise be a smooth tooth surface. Examples of such developmental disturbances are a premature birth, low birth-weight, pre- and postnatal illnesses, and nutritional deficiencies (Gussy, Waters, Walsh, & Kilpatrick, 2006).

The main host defence system against plaque formation and development of dental caries is provided by saliva, which acts as a protective factor. Saliva has many functions: chemical buffering of plaque acids, immunologically mediating antimicrobial activities, and the clearance of food particles. All of these actions are closely related to salivation flow rates (Vadiakas, 2008).

1.4.2 Non- biological Determinants

Previous studies have attempted to identify the cause of ECC by focusing on a limited number of biological variables. More recently, there has been increased interest in the importance of interactions between biological, behavioral, cultural, social, and environmental factors to better understand their influence on ECC development (Gussy, Waters, Walsh, & Kilpatrick, 2006).

In a systematic review of 73 studies, Harris *et al.* found a total of 106 factors significantly related to the prevalence or incidence of caries. These could be grouped into 20 demographic factors, 29 dietary factors, 15 factors related to breast and/or bottle-feeding, 9 factors related to oral hygiene habits, 4 related to oral bacteria flora, and 29 related to other factors such as parental oral health and enamel hypoplasia. Two areas that have been subject to the most in-depth research, evident from the long list of the associated risk factors, were infant dietary practices and socioeconomic status (SES) (Harris, Nicoll, Adair, & Pine, 2004).

1.4.2.1 Infant Dietary Practices: The term "Early Childhood Caries" collectively refers to tooth decay in infants and preschool children. In the past, the terms "nursing caries" or "baby-bottle tooth decay" were used, implying that the inappropriate use of the baby bottle played a central role in the development of dental decay in infants and young children. However, it is difficult to find the supporting epidemiological evidences to back up this claim (S. Reisine & Douglass, 1998). Although, most babies are fed with a nursing bottle for at least some period of the time, Horowitz (1998) indicated that most of them did not develop ECC. Two bottle-related behaviors have attracted the most interest in ECC research: the use of bottles at night/nap time and beyond 12 months (Gussy, Waters, Walsh, & Kilpatrick, 2006). Litt *et al.* (1995) found that the use of nursing bottle at nighttime was related with sugar intake. Mothers who

reported the use of a nursing bottle at nighttime were also more likely to have children with a higher sugar intake. Fruit juices and fruit-flavored drinks have the potential to cause significant damage to tooth structures because of their high sugar content and relative acidity; however, many parents consider fruit juices as an important part of an infant/toddler's diet and that these juices provide much-needed vitamins and general nutrition (Gussy, Waters, Walsh, & Kilpatrick, 2006).

1.4.2.2 Socioeconomic Status (SES): Although the progression of dental caries can be associated with particular actions or behaviors, SES and income level may be an important determinant of ECC. A study in Arizona, exploring dental caries prevalence in preschool children (5 months to 4 years), found that caregivers' level of education and reported family income were negatively related with the frequency of ECC (Tang et al., 1997). There is a limitation for use of data from various studies because there is no consensus in these studies about how in a consistent way to measure SES. In a systematic review, Reisine and Psoter's (2001) documented concrete evidence for a consistent and significant inverse relationship between SES and caries in children less than 6 years. This connection was weaker but still considerable in the 6–11-year-old age groups. In addition, a cross-sectional study of dental caries among 4 – 5 year olds in Australia that measured SES by annual family income also reported a significant linear increase in caries prevalence with decreasing SES (Hallett & O'Rourke, 2003).

1.5 Summary

It is widely recognized that oral health is an important part of overall health and well-being of children. Despite the advances in understanding causes of this preventable disease, early childhood caries has been a major public health issue that affects the normal growth and development of children. The prevalence

of ECC is estimated to range from 1% to 12% in developed countries (Schroth & Moffatt, 2005). However, a recent nation-wide percentage of the prevalence of ECC in Canada is not available. The prevalence of ECC in Canadian Aboriginal populations has been reported to range from 25% to 72% (Peressini, Leake, Mayhall, Maar, & Trudeau, 2004). The potential consequences of ECC include pain, infection, malnutrition, insufficient physical development, low self-esteem, increased loss of school days, higher risk of caries in both primary and permanent dentitions, and higher lifelong dental treatment costs (Misra, Tahmassebi, & Brosnan, 2007). ECC is a multifactorial disease cause by biological and non-biological factors. The three key biological factors are microorganisms, substrate, and host. Historically, researchers focused on the biological determinants of the ECC. More recently, researchers in this field have begun to expand basic biological models of the development of ECC to include various social, demographic, and behavioral determinants through development of a broader framework that incorporates psychosocial and environmental factors within biological measures. The movement to a more comprehensive approach can partly stem from the recent shift in thinking about population health, in which academic and governmental reports have increasingly proposed complex conceptualizations of health determinants. In the following chapter, these multifaceted health determinants and their conceptual framework will be elaborated upon.

Chapter two: Conceptual Framework

Oral health has significantly improved in North America over the past century, owing to progress in sanitary measures, diet, water fluoridation, and access to dental treatments and care. Meaningful reductions in the prevalence of dental caries in children and in the proportion of untreated decay in school-aged children's permanent teeth are two important signs of this improvement. From the late 1940s, the majority of the population has been exposed to increased water fluoridation and fluoridated toothpaste. Although this exposure has contributed to improved oral health of the general population, dental caries still remains the most common chronic disease in children. To address this issue further, a need exists for comprehensive understanding of the factors that influence oral health in children. This broad understanding will, ultimately, enable identification of new methods and approaches to reduce the incidence of childhood oral health problems (Fisher-Owens et al., 2007).

This chapter aims to: *1)* describe the conceptual framework that was used in this study, as a basis for a new approach to tackle the poor oral health in young children. *2)* The different factors that influence oral health are then discussed in light of this conceptual framework and its application. As most of the research on childhood oral health has focused on factors at the level of the individual and family, a knowledge gap exists about the role of community-level factors. *3)* In relation to these factors, there is growing evidence in public health literature to suggest that social capital can be considered a community-level determinant of oral health. Accordingly, an overview of the theoretical development and conceptual elements of social capital is presented. *4)* The relationship between social capital, health, and their applications in health promotion is then described. *5)* The concept of social capital in dental health literature is examined.

2.1 Conceptual Framework of Oral Heath

Although many oral diseases are preventable in nature, the challenge is to provide the opportunity and environment for individuals in the community to attain optimal oral health. With today's advances in operative dentistry, dental treatments are more effective while being more conservative; however, evidence shows that treatment approaches will never put an end to oral diseases. Therefore, there is a need for effective public dental health approaches that can prevent occurrence of oral diseases and promote oral and dental health across the population (Watt & Marinho, 2005).

Biomedical approaches to oral disease have traditionally led professionals to emphasize preventive and educational approaches to promote changes in behaviours that seem to cause oral health issues. This "lifestyle" model has dominated preventive practice for many years. The model is largely based on the transfer of the proper knowledge and skills to the *individual*, whereby the individual is then expected to change their behaviour to positively affect their health (Watt, 2007).

This assumption was based on the belief that individuals freely choose their behaviours and that they can easily, and will, alter them should they receive the appropriate knowledge and training. However, when opportunities and resources for such changes do not exist, access to knowledge and skills has limited value. Moreover, although lifestyles and behaviours can have some temporary influence on health issues, it is important to understand that the broader social, economic, and environmental contexts in which people live often powerfully dictate their behavioural patterns (Watt, 2005).

It is no longer acceptable to base frameworks of health promotion and prevention on the individual, particularly as relates to child health. Children, as

individuals, live with their families and families exist as part of communities. As scientific evidence (Gift & Atchison, 1995) has identified, general health is correlated with oral health and consequently, the risk of oral disease in a child cannot be evaluated separately from their risk of overall illness. As a result, the risk of general illness and especially oral disease cannot be separated from the risk of disease in their family and community. This growing awareness for the need of a more comprehensive approach arises from a shift toward a health promotion paradigm and the complex determinants of health concept.

In the past three decades, health promotion research has concentrated on explaining biological and non-biological determinants of health within multilevel frameworks. As a consequence, a growing body of dental literature has focused on identifying and addressing relationships between the determinants of oral health. To understand children's oral health outcomes, broader frameworks have been used that incorporate biological measures together with psychosocial influences, environmental factors, social contexts (such as socioeconomic status, culture, and ethnicity), health-promoting behaviours, and the existence of an oral health care system. These determinants (or factors) were considered in the conceptual model of children's oral health, which has underpinned this study's methodology (Figure 2 - 1). As with many models of health promotion, this model is structured with a multilevel framework of health determinants on three different levels: individual, family, and community (Fisher-Owens et al., 2007). The determinants of health are categorized into five broad domains: 1) biological and genetic background; 2) sociocultural context; 3) physical environment; 4) health behaviours; and 5) medical (dental) care (Fisher-Owens et al., 2007).

The foundation of this conceptual model of children's oral health originates from social and epidemiological research in oral health promotion. Beyond the five broad domains of health determinants within three levels, it also incorporates time, since each child has a unique developmental progression and

the oral health of children is a dynamic process (Fisher-Owens et al., 2007). Below is an overview of each level within the model as well as a note on the significance of time.

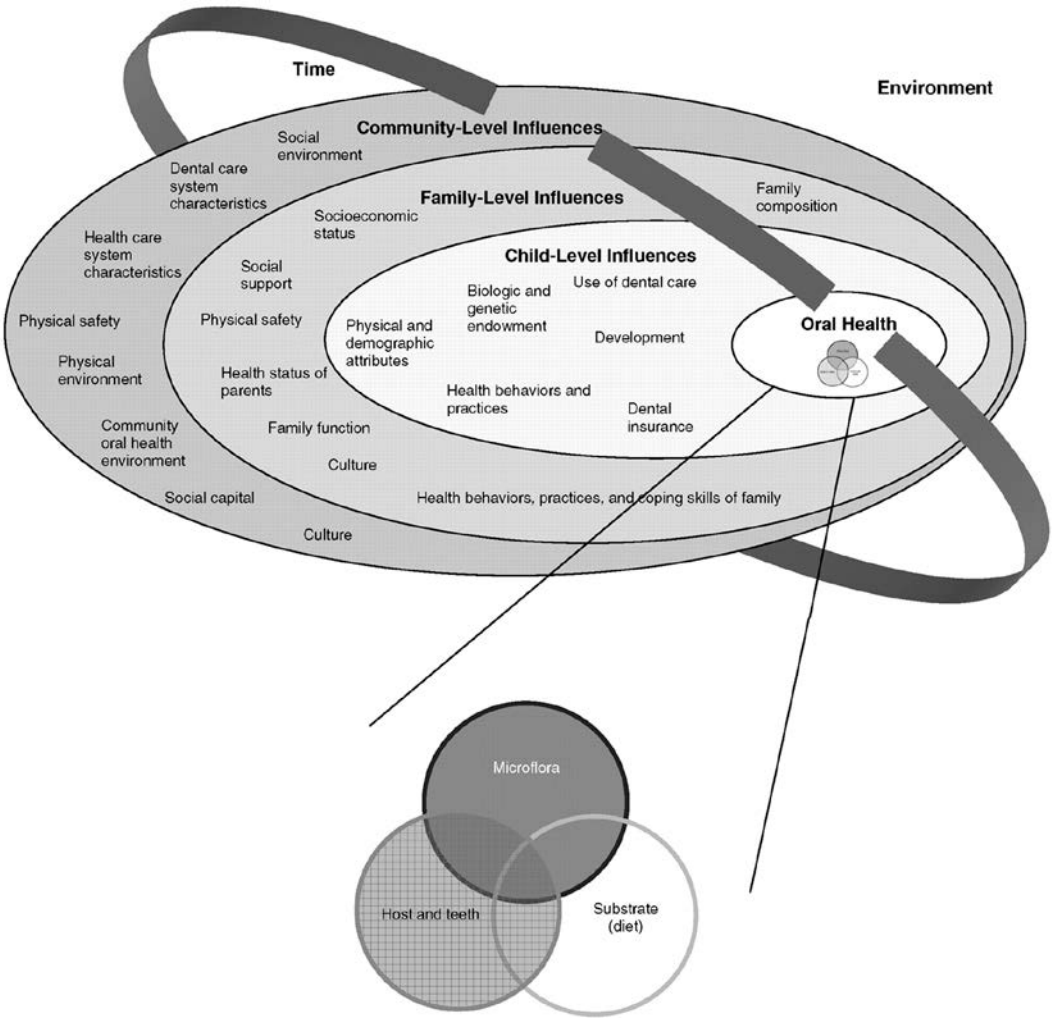

Figure 2-1: Child, family, and community influences on oral health outcomes of children, Reproduced with permission from *Pediatrics*, Vol. 120, No. 3, Page(s) e510- e520 Copyright @ 2007 by the American Academy of Pediatrics (AAP)

2.1.1 Child-Level Influences on Children's Oral Health

Child-level influences relate mostly to the child's unique characteristics, including their biological and genetic endowment, their physical and demographic attributes, their health behaviours and practices, their development, in addition to their use of dental care.

These individual factors, but especially the biological factors, have undergone detailed study as demonstrated by the vast amount of dental literature on this subject. An individual's biological makeup is often viewed as a fundamental health determinant; the genetic makeup of an individual provides a hereditary background that influences one's health status and responds to the onset of specific diseases, including oral health issues such as dental caries.

2.1.2 Family-Level Influences on Children's Oral Health

Children's families provide support and set examples for their behaviour, directly or indirectly influencing their oral health. The identified factors within the level of the family in this model include: family composition, family function, socioeconomic status, health status, behaviours, coping skills, social support, culture, and physical safety.

Among these, the effect on a child's oral health status by the socioeconomic status of the parents, i.e. education and income, has been the topic of many dental studies (Nicolau, Marcenes, Allison, & Sheiham, 2005). Family revenue plays a role at both the family and community-levels, directly and indirectly influencing general and oral health. Higher physical capital improves living conditions, such as by having a safer dwelling and the ability to afford healthier food.

2.1.3 Community-Level Influences on Children's Oral Health

The model situates the community-level factors surrounding those within the family and individual levels, which seems to indicate a broader and perhaps more dominant role in these factors explaining both good and ill-health. Many of the factors represent systemic and/or institutional contexts within community or provincial jurisdictions, which are set within the social context and culture of the community and the physical environment. The influential elements include: social environment; social capital; physical safety; physical environment; community oral health environment; dental care system characteristics; health care system characteristics; and culture.

2.1.4 Significance of Time on Children's Oral Health

This conceptual model not only considers different factors and levels of influences on children's oral health but also incorporates the changes that occur over time. By taking time into account, it becomes possible to demonstrate that health and its multilevel determinants are a dynamic and evolving system.

2.1.5 Applications of the Conceptual Model

There are complex interactions among the influential factors in health issues, and one major challenge in the construction of a realistic conceptual model is the identification of casual linkages among such elements. Casual relationships can be explained both directly and indirectly, and can have feedback effects on other components or factors. For example, a change in the social environment may lead to changes in a family's social support system. Subsequently, the changes in social support may affect the social environment. In addition, casual factors may be initiated by other factors. This multifactorial nature has

contributed to the concept of "web of causation" in health promotion (Krieger, 1994).

Simple models that express a simple and direct cause-and-effect relationship between a single risk factor and an outcome are at times suitable for an empirical study, but will not be able to explain interactions among different variables should they be presented. On the other hand, complex conceptual models that use many different dimensions to explain the relationships among the variables may not be applicable empirically. The children's oral health conceptual model as used for this study offers an intermediate approach; it is comprehensive, but it is still manageable for empirical research (Fisher-Owens et al., 2007).

Since researchers are beginning to address gaps in knowledge of the role of community-level factors in oral health of children, it seems logical to turn to the public health literature that has described the role of many determinants, including social capital. Social capital appears to influence overall general health, but to date little focus has been applied to this factor in the oral health realm.

2.2 Social Capital

An old cliché says that *it is not what you know, but who you know*, and the latter portion of this reflects a form of social capital. The idea behind social capital may have its roots in the social sciences dating back to Durkhiem. However, the debate about its intellectual origins is ongoing among scholars from different disciplines and having differing theoretical perspectives (Song, Son, & Lin, 2010). As Putnam states, Lyda Judson Hanifan used the term "social capital" for the first time in a 1916 article about a rural school community center (Putnam, 2000).

Despite debates about its origin, during the last two decades social capital has developed to become a popular paradigm in research among different

disciplines. In 1990, the Social Sciences Citation Index showed no results when searching for the key word "social capital"; yet in 2000 and 2008, 150 and 565 published articles, respectively, were retrieved when using this term (Song, Son, & Lin, 2010). More dramatically, searching the database in 2012 resulted in 3510 "hits".

As an obvious consequence of being a new concept in social sciences, social capital has initiated extensive debates. There is no current consensus among the various disciplines on the term's definition, and the results, oftentimes being controversial operationalizations, differing measurements, contrary mechanisms, and mixed research evidence, have led to various implications and difficult challenges (Song, Son, & Lin, 2010). Some of these challenges have likely resulted from differing interpretations of the work by those theorists contributing to the development of the concept, which has shifted from more theoretical conceptualization to applied theory and measurement.

Three major contributors to the theoretical development of social capital, which occurred during the 1980s and the early 1990s, include two sociologists, Pierre Bourdieu (Bourdieu, 1986 [1983]), and James Coleman (Coleman, 1988), and one political scientist, Robert Putnam (Putnam, 1993; Putnam, 2000). Robert Putnam has received much of the credit for popularizing the concept within health research, by expanding upon the social science's theory, which has been viewed to offer only obscure and abstract conceptualization (Eriksson, 2011). The following sections provide overviews of the above mentioned theorists' work, the main elements of social capital, and two described types of social capital.

2.2.1Theorists of Social Capital

2.2.1.1 Bourdieu

Bourdieu was the first author who conceptualized social capital in the field of sociology. He originally published his theory in 1983 in the French language. In 1986, it was translated into English. Bourdieu defined social capital as:

> "The aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition – or in other words, to membership in a group – which provides each of its members with the backing of the collectivity – owned capital, a 'credential' which entitles them to credit, in the various senses of the word." (Bourdieu, 1986 [1983]: 248).

This definition places emphasis on the resources gathered by individuals as an outcome of their participation in social networks. Bourdieu stated that conflict is a fundamental dynamic of all social life and that this conflict occurs over symbolic resources, such as social capital, as well as over material resources (Baum & Ziersch, 2003).

According to Bourdieu, two factors determine the volume of social capital to which an individual has access to. These factors are: 1) "the size of the network of connections one can effectively mobilize"; and 2) "the volume of the capital (economic, culture or symbolic) possessed in his own right by each of those to whom one is connected" (Bourdieu, 1986 [1983]: 249).

As Bourdieu did not discuss further the measurement of social capital, these two factors can serve as proxy indicators of social capital in his work (Song,

Son, & Lin, 2010). Moreover, the absence of clearly expressed or demonstrated manners in which to operationalize and measure social capital subsequently opened the window for debates about the empirical applications of his idea.

2.2.1.2 Coleman

Coleman's systematic examination of social capital and its role in the creation of human capital drew attention from different disciplines. In his major work, *Foundations of Social Theory,* he dedicated one complete chapter to analyzing social capital, and included its definition, its operationalization, and its structural sources at the meso- and macro levels (Song, Son, & Lin, 2010).

Coleman described the concept of social capital as having "social–structural resources" being derived from structures of social relations:

> "Social capital is defined by its function. It is not a single entity, but a variety of different entities having two characteristics in common: They all consist of some aspect of a social structure, and they facilitate certain actions of individuals who are within that structure. Like other forms of capital, social capital is productive, making possible the achievement of certain ends that would not be attainable in its absence." (Coleman 1990: 302).

He supported this broad conception by its utility for explaining multiple outcomes and for making connections between the micro- and macro- levels. Its breadth, though, may lead to multiple and different operationalizations.

Coleman (1990) proposed six forms of social capital, each of which facilitate actions: 1) obligations, expectations of reciprocity, and trustworthiness (i.e., individuals do things for each other and trust each other to reciprocate in the

future); 2) information potential from social relations; 3) norms (in particular "a prescriptive norm … that one should forgo self-interests to act in the interests of the collectivity " (1990 : 311) and effective sanctions; 4) authority relations (i.e., transferrable rights of control between individuals) that can solve common problems; 5) appropriable social organizations (i.e., organizations whose resources benefit their participants); and 6) intentional organizations (i.e., organizations whose resources not only benefit their participants but also the public). His operationalization equates social capital with its sources (e.g., organizations) and their returns (e.g., information) (Portes, 1998). Coleman did not describe any specific manner in which to measure these forms; actually, he was uncertain about the value of social capital as a measurable concept (Song, Son, & Lin, 2010).

In his works, Coleman explained that social capital can function in both positive and negative ways. It can also act at both individual and collective levels. He emphasized the positive values of different forms of social capital for collective action, while mentioning that some forms of social capital, such as norms, could also restrict some actions (1990: 311). He also described social capital as being not a private property of individual beneficiaries, but a property of social structure (Song, Son, & Lin, 2010).

2.2.1.3 Putnam

Putnam's writing on social capital and its connection to democracy appeared in the academic literature in 1993. It is believed that his articles, published in 1995, and his book, in 2000, both entitled *Bowling Alone*, played a major role in popularizing the term social capital beyond academia and into public discourse (Song, Son, & Lin, 2010).

Putman described social capital as a community-level resource, and defined it in his earlier work as "features of social organization, such as trust,

norms and networks that can improve the efficiency of society by facilitating coordinated actions" (Putnam, 1993). In the latter book version of *Bowling Alone*, he provided the definition of "connections among individuals – social networks and the norms of reciprocity and trustworthiness that arise from them" (Putnam, 2000). Putnam equated social capital with networks of civic engagement, reciprocity, honesty, and social trust, yet left the exploration of their causal relations for future research. Beyond this, he added other consequences of networks, such as altruism, volunteering, and philanthropy, as alternative indicators of social capital (Song, Son, & Lin, 2010). Additionally, Putnam developed a state-level social capital index, containing 14 items covering areas such as community organizational life, engagement in public affairs, community volunteerism, informal sociability, and social trust (Putnam, 2000).

Putnam stressed positive consequences of social capital. He mentioned that social capital is a private and public "good" (Putnam, 2000). When one invests in social capital, not only will they benefit from it, but other members of their network will reap benefits. Putnam did recognize negative functions of social capital, for those individuals outside the network, if it is used by those within the network to create antisocial activities that are of sole benefit for themselves (Putnam, 2000).

In the book *Bowling Alone*, Putnam made a conclusion based on his preliminary analyses and results, that overall there has been a decline of social capital in American society. He connected the decline with several macro-level factors, such as pressures of time and money, residential mobility, electronic entertainment, and generational change (Putnam, 2000). Nevertheless, he described positive associations of social capital, with education and children's welfare, neighborhood safety and productivity, economic development, health and happiness, democracy, and tolerance and equality (Putnam, 2000).

In summary, Putnam's vision of social capital has been one where networks of civic engagement foster norms of reciprocity, which then they can create social trust. As a consequence, this trust may facilitate cooperation and collective action.

2.2.2 Elements of Social Capital

2.2.2.1 Networks of Civic Engagement

According to Putnam, one of the components or elements of social capital is "networks of civic engagement" or "social networks". Civic engagement may be defined as,

> "Individual and collective actions designed to identify and address issues of public concern. Civic engagement can take many forms, from individual voluntarism to organizational involvement to electoral participation. It can include efforts to directly address an issue, work with others in a community to solve a problem or interact with the institutions of representative democracy. Civic engagement encompasses a range of specific activities such as working in a soup kitchen, serving on a neighborhood association, writing a letter to an elected official or voting" (American Psychological Association, 2012).

Networks of civic engagement may best then be described as collective community efforts to directly address an issue or solve a problem. These networks could form through formal social connections, including memberships, and through participation in activities of formal political, educational, recreational, religious, and professional organizations. They may also originate from

connections in the workplace, or informal social connections such as participation in leisure activities with family, friends, and neighbors (Baum & Ziersch, 2003).

Whether formal or informal, networks of social connections are seen to increase the productivity of individuals and reinforce norms of reciprocity inside the community. The characteristics of a network are likely to have an influence on the flow of resources and the nature of social capital available through a network.

2.2.2.2 Norms of Reciprocity

Networks create mutual obligation, rather than just serving as a point of contact. Networks of community engagement foster durable norm of reciprocity (Putnam, 2000). Reciprocity, as a "cognitive" element of social capital, refers to the provision of resources by an individual or group to another individual or group, and the repayment of resources of equivalent value by these recipients to the original provider. Generalized reciprocity is based on the assumption that good turns will be repaid at some unspecified time in the future, perhaps even by a stranger (Baum & Ziersch, 2003). In other words, "I'll do this for you without expecting anything specific back from you in the confident expectation that someone else will do something for me down the road" (Putnam, 2000). High levels of social capital are argued to give rise to a higher level of reciprocal relationships and thus lead to more cooperative and well-functioning societies. The norms of reciprocity as a community asset increase efficiency.

2.2.2.3 Trust

Like reciprocity, trust relates to the "cognitive" side of social capital and is essential to understanding social capital. Trust is classified into three broad types. The first is *trust of familiars* which exists within established relationships and social networks. The second is *social trust* or *generalized trust* which has a broader extension of trust to strangers. The last is *institutional trust*, which relates

to the basic form of trust in formal institutions of governance (Baum & Ziersch, 2003).

Putnam conceptualized that networks foster norms of reciprocity, which in turn create social trust. According to Putnam, trust is essential for enabling cooperation for mutual benefit. The more people trust each other, the greater the chances are for mutual interest in collaboration. A society that relies on generalized reciprocity will trust a clerk at the convenient store because one has known him/her for years, and also a stranger seen for the first time at the coffee shop. Putman further describes two types of trust, the first considered "thick", as that rooted in personal relations that are strong, frequent, and based on wider networks which have a short radius, encompassing only others who are close. On the other hand, "thin" trust refers to trust with a long radius, encompassing people at a greater social distance or "the generalized other", like a stranger from the coffee shop. Thin trust is based on some background of shared social networks and expectations of reciprocity. It can be more beneficial than thick trust because it expands the radius of trust beyond the number of people whom one can know personally (Putnam, 2000).

2.2.2.4 Volunteering

Volunteering – our readiness to help others - is a central measure component of social capital at the community level (Baum & Ziersch, 2003; Putnam, 2000). It refers to actions in which individuals give their time and efforts to help others. These activities can include assistance and support within formal and informal networks. Social networks provide the vehicle with which we can employ each other for a good purpose. These networks promote norms of reciprocity that encourage paying attention to the welfare of others. Thus volunteering, or simply helping, is strongly predictive of the level of civic engagement. Members of formal and informal social networks are more likely to

donate their time and money to good causes than those individuals who are isolated socially. Therefore, any assessment of trends in social capital must include an examination of trends in volunteering (Putnam, 2000).

There are additional factors apart from membership in a social network which may predict why, what resources, and how often people volunteer. Individuals who have more personal and financial resources such as highly educated and well-to-do people are more likely to volunteer. The size of the community also makes a difference; formal volunteering, working on community projects, and informal helping behaviors are all more common in small towns and communities. Volunteering generally has an inverted U-shaped pattern relate to the life-cycle, reaching its peak in a person's late thirties and early forties (Putnam, 2000). Nevertheless, the most consistent predictor of volunteering is an involvement in community life. It is more important than wealth, education, community size, age, family status, and employment. Individuals who are actively involved in community and social networks are not only more likely to become a volunteer, but they tend to remain in service over a period of time. In contrast, socially isolated people are more likely to engage in episodic volunteering (Putnam, 2000). Moreover, the presence of volunteers often encourages more volunteering in both formal and informal settings. For instance, careful studies have shown that these simple acts of kindness can have a ripple effect. Moreover, individuals who have received help themselves are more likely to help others voluntarily.

2.2.3 Types of Social Capital

Putnam (2000) described two types of social capital: bonding and bridging. *Bonding social capital* refers to horizontal close-knit ties between individuals or groups sharing similar demographic characteristics. These relationships tend to connect homogeneous persons (Baum & Ziersch, 2003).

Bonding social capital enhances within-group reciprocity and solidarity, but may be exclusionary and fail to produce society-wide benefits of cooperation and trust (Song, Son, & Lin, 2010). In contrast, *bridging social capital* exists when connections form to link heterogeneous individuals. This type is particularly successful in obtaining resources from outside groups. Putnam emphasized the positive functions of both types of social capital, while admitting that bonding social capital may lead to between-group hatred (Song, Son, & Lin, 2010). Bridging social capital is closely related to thin trust; on the other hand, bonding social capital is related to thick trust (Anheier & Kendall, 2002).

2.3 Social Capital and Health

The concept of social capital has generated ongoing debate in multidisciplinary health research literature during the last two decades. As previously mentioned, of the three scholars providing initial theoretical contributions - Bourdieu, Coleman, and Putnam – Putnam's work has received the most attention in the health literature within the extensive work of public health researchers (Song, Son, & Lin, 2010). Kawachi and colleagues were amongst the first researchers to apply Putnam's concept of social capital in the field of public health, to explore its association with mortality in 1997 (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997).

Social capital is categorized in two different dimensions of *structural* and *cognitive* social capital. Structural social capital consists of formal and informal social connections, while cognitive social capital encompasses the trust and norms of reciprocity (Baum & Ziersch, 2003). Social capital has also been measured at several different levels including the individual, the community, the state, and even the country (Song, Son, & Lin, 2010).

Different pathways have been suggested to link the multiple levels of

social capital to health. Social capital affects an individual through: *1)* the various forms of social support that may influence health by acting as "buffering factors" for stress; *2)* the impact of social influence, which may act through maintaining healthy norms and the promotion of health behaviors through the influence of peers; *3)* social participation or engagement which can influence health directly by activating cognitive systems, and indirectly by giving a sense of coherence and meaningfulness; and, *4)* group membership can also provide access to material resources and services with a direct effects on health, such as job opportunities and health services (Eriksson, 2011; Song, Son, & Lin, 2010).

Social capital operates at the community level through: *1)* the process of informal social control by influencing behaviors, access to health services, and psychosocial processes; *2)* the maintenance of healthy norms, the promotion of health behaviors, and the enhancement of services and facilities; *3)* collective action and socialization by the notion that a cohesive neighborhood is more successful in uniting for the best interest of the neighborhood; and, *4)* the supply of social support which offers trust, participation and mutual support which are believed to constitute "health-enabling communities", in that these communities are most likely to support health-enhancing behaviors (Eriksson, 2011; Song, Son, & Lin, 2010).

Apart from its direct path to health, social capital may also operate as one mechanism linking income inequality to health. Wilkinson (Wilkinson, 1996; Wilkinson, 1999) suggests that social capital, reflecting an underlying psychosocial risk factor, significantly mediates the negative association between income inequality and health.

There is an extensive list of research literature reporting on the relationship of multiple forms of social capital, as described by Putnam, to various health and well-being outcomes such as: life expectancy, mortality, physical

health, mental health, health behaviors, access to health care and services, health information, and life satisfaction among diverse populations of adolescents, adults, and the elderly across cultures and societies (Song, Son, & Lin, 2010).

2.4 Social Capital and Health Promotion

Provided in the Ottawa Charter, the World Health Organization defines health promotion as:

> "Health promotion is the process of enabling people to increase control over, and to improve, their health. To reach a state of complete physical, mental and social well-being, an individual or group must be able to identify and to realize aspirations, to satisfy needs, and to change or cope with the environment." (WHO, 2012b)

The Ottawa Charter defined five priority action areas for health promotion: 1) Build healthy public policy; 2) Create supportive environments for health; 3) Strengthen community action for health; 4) Develop personal skills; and, 5) Re-orient health services (WHO, 2012b).

As a health promotion strategy, collective (community) social capital can be mobilized. Mobilizing collective social capital is related to the "community development approach" to health promotion (Wakefield & Poland, 2005). The primary objective of health promotion programs that are based on community development principles is not to prevent any specific disease or promote any specific health outcome, but to build community capacities that improve the foundation for a successful community. These types of initiatives emphasize the "importance of creating environments in which individuals and communities can become empowered as they increase their community competence or problem-solving ability" (Eriksson, 2011).

A *supporting community* can be defined as an environment in which people help and take care of each other and their surroundings. These communities could also be considered "health-enabling communities", particularly when characterized by engagement, mutual support, and trust. Health promotion may act through effective *community actions*, whereby the activities' priorities, strategies, and implementations are designed or planned by members of the community for achieving better health conditions. The two goals of health promotion related to creating supporting environments and strengthening community action can be integrated nicely into the concept of community-level social capital. Mobilizing social capital in local communities could therefore be seen as a key goal for community development approaches in health promotion (Eriksson, 2011).

2.5 Social Capital and Oral Health

A scoping literature review was conducted on the use of social capital in oral health literatures. Three electronic bibliographic databases (Medline, Scopus, and CINHAL) were initially searched using the key words: social capital, social cohesion, oral health, dental health, and dent*. Overall, 15 published articles and 2 theses were retrieved. From these 17 publications, eight articles were chosen to review due to their directly addressing the issue of social capital in oral health. The rest of the published articles were commentary pieces or indirectly used the concept of social capital to, for instance, explain and discuss their findings. All of the 8 selected articles reported on cross-sectional studies that were conducted in equal numbers in Brazil (S. J. Moysés, Moysés, McCarthy, & Sheiham, 2006; Pattussi, Marcenes, Croucher, & Sheiham, 2001; Pattussi, Hardy, & Sheiham, 2006a; Pattussi, Hardy, & Sheiham, 2006b) and Japan (Aida et al., 2009; Aida, Kuriyama et al., 2011; Aida, Kondo et al., 2011; Furuta et al., 2011). The investigated oral health issues included dental caries, dental injuries, numbers of teeth present inside the mouth of elderly individuals, and self-rated oral health. No

study focused on social capital in preschool children's oral health or oral health of First Nations children. Consequently, there was no article about preschool First Nations children and social capital.

After reviewing the 8 articles, one of the main concerns was that the majority provided weak explanation of the applied social capital theoretical framework. In addition, the research tools for measuring social capital were not valid or reliable except in one study (Pattussi, Hardy, & Sheiham, 2006b). The explanatory pathways provided on how social capital acted upon or influenced the oral health outcomes were those applied in the health literature, as discussed in previous segments of this chapter. No additional explanatory pathway was produced to explain how social capital acts on oral health specifically. No article discussed social capital in direct relation to oral health promotion, or how oral health promotion strategies can help to mobilize social capital toward making changes.

2.6 Summary

To be able to address oral health issues in children, there is a need for comprehensive understanding of factors influencing childhood oral health. A broad understanding may help in identifying new methods and approaches that may cause reduction in oral health problems. The children's oral health conceptual framework may provide a better understanding of these influences through its use of a broader framework incorporating psychosocial, environmental, and social contextual factors related to children. This framework based on five major domains that are rooted in oral health promotion: 1) biological and genetics background; 2) sociocultural context; 3) physical environment; 4) individual health behavior; and 5) medical (dental) care which rooted in oral health promotion. Moreover, the framework's categorization of factors into the individual, family, and community levels allows for the critical expansion of the

traditional focus on the individual (and possibly family) in oral health research to include the community. Among the community-level factors there is growing evidence supporting the role of social capital. The concept of social capital as a community-level determinant of health has health implications that have been addressed in public health literature (Helliwell, 2003; Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997; Kennedy, Kawachi, & Brainerd, 1998; Subramanian, Kim, & Kawachi, 2002).

Among the three main theorists who contributed to the conceptual development of social capital, the political scientist Robert Putnam is given much of the credit for making the concept popular within health research. This is largely due to his provision of a more concrete definition and description of the concept's operationalization than that offered by the social scientists and a way to measure the factor. Putnam's definition of social capital was of "features of social organization, such as trust, norms and networks that can improve the efficiency of society by facilitating coordinated actions." A growing body of recent research suggests that communities with high levels of social capital, reflected as the norms and networks that enable people to act collectively, have better general health and lower levels of mortality, morbidity, and violence than those with low social capital. These relationships have not been fully explored in oral health. As a health promotion strategy, community social capital can be mobilized. Mobilizing collective social capital is related to the "community development approach" of health promotion.

Chapter Three: Methods

In this chapter, the research method and involving activities will be discussed in details. To fulfill that purpose, the following topics will be discussed: 1) Research questions; 2) Choice of qualitative inquiry; 3) Use of case study as an empirical research strategy; 4) Setting and sampling methods; 5) Ethical considerations; 6) Details of data collection and analysis methods; and 7) Rationalization of how rigour and trustworthiness were achieved.

The first phase of the study focused on the development of the research proposal including review of the literature, preparation of the research proposal, obtaining the ethics approval, contacting and meeting with the representatives of the communities for recruitment purposes. In the second phase, the research participants were recruited and interviews with the key informants were completed and transcribed verbatim. The final phase included the analysis of the qualitative data. Upon completion of the analysis, a draft report of the findings was presented to and discussed with the community advisory committee. Their feedback and comments were added to the findings.

3.1 Research Questions

Previous studies described how social capital influences overall health (Kawachi, Kennedy, & Glass, 1999; Subramanian, Kawachi, & Kennedy, 2001), but only a few studies have focused on oral health (Aida, Ando, Oosaka, Niimi, & Morita, 2008; Pattussi, Hardy, & Sheiham, 2006a; Watt, 2002). A growing body of recent research suggests that communities with high levels of social capital, reflected as the norms and networks that enable people to act collectively, have better general health and lower levels of mortality, morbidity, and violence than those with low social capital (Kawachi, Kim, Coutts, & Subramanian, 2004). These relationships have not been fully explored in oral health, especially

regarding the oral health of First Nations preschoolers. The purpose of this study was to generate a broad understanding of social capital and its role in oral health by examining the perceptions of parents and caregivers of children in a First Nations community in regard to the following questions:

1) What is the social capital of a First Nations community regarding the oral health of their children? and
2) How can social capital be utilized by this community to generate ideas for designing and implementing community oral health initiatives for their children?

The oral health of young First Nations children is demanding further programs and policies to tackle the social determinants of oral health and to resolve the inequalities (Lawrence et al., 2009).

3.2 Qualitative Inquiry

This research was a pilot study on social capital and its role in oral health of young children. The findings will help the research team to design a research protocol, evaluate the feasibility of implementing such a protocol, establish a collaborative research team (a partnership between University and Community), and build trust with the key stakeholders including the funding agencies. A qualitative approach was found to be the most appropriate method for this pilot study.

Qualitative research is not just a complementary part for quantitative research that would add some exploratory procedures or open-ended questions to increase the richness of the study. Qualitative research, on its own, is the method of choice in a number of conditions. Selection of a research design (qualitative or quantitative) depends on the nature of research questions. Qualitative research is particularly appropriate for answering questions of "How?" or "What?" as

opposed to “Why?” (Creswell, 2007). It is also the most appropriate approach for understanding the meanings that people create of their experiences. Qualitative methods are also very effective for examining processes; therefore, they are ideal for understanding of a process or a concept in depth (Morrow, 2007; Morrow, 2007).

Qualitative inquiry is designed to study the “experiential life of people” (Polkinghorne, 2005). A primary purpose of qualitative research, according to Polkinghorne (2005: 138), is “… to describe and clarify experience as it is lived and constituted in awareness”. In this type of inquiry, the researcher is able to understand the depths of an experience to discover meanings that are not otherwise achievable and that cannot be collected through using surveys or other data collection strategies (Morrow, 2007).

Qualitative research methods can be used to examine variables that are not easily recognizable or that have not yet been recognized as well as inquiries on fields for which there is little or no previous research and addressing contradictions in the discourse that arises from prematurely, inaccurately, or inadequately investigated variables. When theories are not yet available to explain phenomena, qualitative methods are available to assist the theory-building process. Also, when a process or phenomenon is not well-known or understood, qualitative inquiry may open a new or unexpected field of knowledge (Creswell, 2007; Morrow, 2007).

Qualitative inquiry is suitable when there is a need to describe a detailed and in-depth view of a phenomenon. The researchers are able to get a broad understanding of a phenomenon by quantitative approaches, and by using qualitative methods, they are able to investigate complex processes and to express the different aspects of human experiences. Another important reason for selecting a qualitative research design is the preference for a narrative approach or

presentation of findings. For example, readers who are in favor of human experiences and feelings or who value narrative may find qualitative findings more accessible and convincing (Creswell, 2007).

Qualitative research is used to design interventions that contribute to social change. Participatory research holds promise in both social justice agendas and in consultations, especially when there is a need for collaboration between members of a community and the researcher/consultant, as they strive to make changes together (Morrow, 2007). As a result, one of the main strengths of qualitative research, especially when applied to areas such as social capital, is that it allows for a full and complete empirical exploration of the concepts and ideas. Qualitative research has a great potential to illuminate some of the ongoing debates regarding the definition, utility, applicability, and impact of social capital in relation to oral health (Kawachi, Subramanian, & Kim, 2008).

For the above reasons, a qualitative approach was found to be appropriate for data collection and analysis on a relatively unexplored topic such as social capital and oral health of First Nations children. The findings of this qualitative research will be used to design a subsequent larger qualitative and/or quantitative study.

3.3 Case Study Method

Case study is the preferred empirical research strategy for examining a contemporary phenomenon in depth and within its real-life context especially when "how" or "why" questions are being asked and the researcher has little control over events. For example, in this study, one of the research questions was: "How can social capital be utilized by the case community to generate ideas for designing and implementing community oral health initiatives for their children?" The unique need for case study arises out of the desire to understand complex

social phenomena such as social capital in this study. The case study inquiry: 1) relies on multiple sources of evidence with data that converges in a triangulating fashion; and 2) benefits from previously developed theoretical propositions that guide data collection and analysis (Yin, 2009). In this study, multiple sources of evidence were used including interviews with the community residents, interviews with other informants who had a history of working with the case community, and unpublished reports regarding the case community. The theoretical basis employed for this study was taken from Putnam's communitarian concept of social capital.

In a case study research design, five characteristics are required: 1) research question(s); 2) propositions, 3) units of analysis; 4) logical linking of the data to the propositions; and 5) criteria for interpreting the findings (Yin, 2009). In the following, I will discuss each component in details.

3.3.1 Research questions: The case study method is appropriate for "how" and "why" questions. Accordingly, the first task is to identify the precise nature of the study questions (Yin, 2009). For example, in this study on the concept of social capital and oral health, the research question was; "How can social capital be used to generate ideas for the future planning of intervention(s)?"

3.3.2 Study propositions: Once the research questions are formulated, a theoretical proposition that leads to better understanding of a phenomenon within a specific context needs to be identified. For example, in the health literature, a positive correlation has been reported between social capital and health (Kawachi, Kennedy, & Glass, 1999; Subramanian, Kawachi, & Kennedy, 2001), but little is known about social capital and oral health especially in First Nations population. In order to explore this phenomenon and its application towards designing of an intervention, the theoretical propositions of

Putnam's communitarian concept of social capital were found to be appropriate for our data collection and data analysis (Yin, 2009).

3.3.3 Unit of analysis:

This element is related to the fundamental condition of defining what the "case" is. The case may be an individual, an organization, an event or entity, or a program. As a general rule, the unit of analysis in the study is defined by the initial research questions (Yin, 2009). In this study, the unit of analysis is the "community." This study used Putnam's communitarian concept of social capital theoretical framework, which lends itself to a case study method.

3.3.4 Logical linking of the data to the propositions:

This component determines the data analysis steps in a case study inquiry. The researcher's main interest in the design phase is to be aware of different options in choosing conceptual frameworks and how they may suit the case study inquiry. The actual analysis will require the combination or calculation of the case study data as a direct reflection of the initial research propositions. This provides guidance for the researcher to collect proper data during the data collection procedure (Yin, 2009). For instance, in this study, the concept of social capital, its elements, and the oral health of children were identified as points of interest. The interview guide was designed to investigate and collect data related to these concerns.

3.3.5 Criteria for interpreting of the findings:

This component relates to the theoretical framework and the researcher's plan to analyze the data. The elements of Putnam's social capital concept, which are networks, norms of reciprocity, and trust were used to guide the analyses of the data. An alternative approach is to identify and address rival explanation of the findings (Yin, 2009). In this case, the researcher compares the findings with other

concepts to determine if one can explain or discuss the findings according to the concepts.

In summary, Putnam's communitarian view emphasized the need for participation in various networks and stated that social capital can facilitate collective actions for mutual (health) goals (Campbell C., Wood R., and Kelly M., 1999; Campbell, C. and Gillies, P., 2001). The theory of social capital informed the design, data collection, and data analysis of our research.

3.4 Setting and Sampling

Participants were recruited from a First Nations reserve in Northern Alberta, Canada. A research team member who had an existing relationship with the community agreed to serve as our community coordinator to ensure the culturally appropriateness of our protocol. In addition to being knowledgeable about First Nations culture and protocols, our community coordinator has extensive experience in coordinating health research projects with First Nations and Métis communities.

There were 2 reasons for selecting this community: 1) community's concerns about oral health of their children previously expressed to our community coordinator; and, 2) the location of the community. Due to our limited budget, the research team preferred to choose a First Nations community that was close to the researchers' workplace. In addition, past research with this community has indicated similar psychosocial and environmental factors to other reserves (*Baseline report,* 2008). Finally, a previous working relationship between the community and our research team was crucial in building trust among the partners. As a result, the letter of support provided by the community helped the research to secure funding for this research.

Based on the terms of reference, understudied community identified individuals who were willing to serve in a Community Advisory Committee (CAC). The committee consisted of seven members from the community who represented their community's interests in this research. The CAC and the research team worked together at all stages of this partnership to design and apply a culturally appropriate approach through this partnership.

In qualitative data collection, the purpose is to identify a group of people who possess characteristics or lives relevant to the social phenomena being studied (Willig, 2001). Therefore, a purposive sample of 23 individuals was recruited from the case community in northern Alberta. Eligible participants lived or assigned themselves as a member of the community. Individuals who were involved in the oral health care of the community (i.e. one Elder, the health director, and three health workers) were invited to a one-on-one interview. The invitations were done by the community coordinator and the health director through phone calls and/or mailing a letter of invitation. When a participant expressed interest or a desire to be involved, an interview was scheduled at a time that was mutually convenient for the participant and the community coordinator. The interviews were facilitated by the community coordinator. 2 Experts were also interviewed after first round of the individual interviews. These experts had the history of working with the community on other general and oral health projects. They answered some concerns regarding the social context and oral health issues of the community.

In addition to the individual interviews, two focus groups were conducted with 18 mothers/caregivers of preschool children who were interested in the topic and wished to participate. These focus groups were conducted in the morning and afternoon of December 13, 2011 with 8 and 10 participants respectively. The community health director identified a group of community health care workers who were interested in collaborating on this study. The community health care

workers acted as community-based researchers (CBRs) in this study. The CBRs contacted the potential participants and recruited those who expressed interest in the study. They also helped with organizing and scheduling the focus groups, interpreting the information letter, and obtaining the oral consent. Recruitment was done through posting flyers on announcement boards or sending an invitation letter to potential participants. As community health care workers might be viewed to be in a position of authority or potentially influence those who access their services, invitees were given notice that there was no expectation or requirement for participation and that their refusal to participate will in no way compromise or affect the care they receive. The principles of informed consent, confidentiality and anonymity were followed at all times to the extent possible. Participants were made aware of their right to withdraw at any time if they wish.

3.5 Ethical considerations

Ethics approval was obtained from the University of Alberta Research Ethics Board (Appendix 1). A representative advisory committee including one Elder and six key community members provided advice on all aspects of the research process to ensure it was done in a respectful and culturally appropriate way. The community provided a letter in support of this research project (Appendix 2). All the materials and generated data are kept in a secure and locked place for five years and then will be destroyed. These materials will be accessible for future uses only by the research team and community as specified in a data sharing agreement that outlines data ownership, access and use. This agreement was signed by the Principal Investigator and the community leadership. The guide for ethical and culturally appropriate conduct of this study is the "Health Research involving First Nations, Inuit and Métis people in Canada" document. This is henceforth governed by the provisions outlined in chapter 9 of the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (*Canadian Institutes of Health Research, Natural Sciences and Engineering Research*

Council of Canada, and Social Sciences and Humanities Research Council of Canada, Tri-Council Policy Statement: Ethical conduct for research involving humans, December 2010).

3.6 Data collection and data analysis

Every effort was made to ensure that the participants were aware of the voluntary nature of their participation. The participants were given a written information sheet. The information letter was read to them before obtaining their oral consent. A community-based researcher (CBR) selected by the community and trained by the research team was available to participants in the interviews to interpret the information sheet and consent form so that everyone who chose to participate was fully informed. An oral consent was obtained and documented by the community-based researchers and the community coordinator (collaborator). They signed the oral consent form on behalf of the participants. The participants were advised that they could refuse to respond to any topic they found disagreeable and that they could end the interview whenever they wanted to do so.

Each individual interview and/or focus group discussion lasted about 60 to 90 minutes. Each participant was advised that the researcher may wish to interview them more than once. The interviews were digitally audio-recorded; however, if the participant was unwilling or uncomfortable, their comments were recorded manually by a designated research team member.

An interview guide including open-ended questions was used to direct the interviews (Appendix 3). They were asked a series of questions regarding: the social and environmental conditions of their community; social capital; their children's oral health; and how the social capital of the community can be used for the success of future oral health interventions. Relative comments were reflected back to encourage the participants to fully describe their thoughts,

worries, or concerns. As the interviews continued, the researcher deliberately wove in key points that emerged from previous interviews. This allowed the refinement of existing categories when new codes to emerge. Finally, the researcher used such questions as, 'Is there anything you'd like to ask me?' and 'Is there anything else you'd like to tell me to help me understand better?' to bring the conversation to a close (Richards, L. and Morse, J.M., 2007).

All the interviews were transcribed verbatim for later references and increased accuracy and typed with Microsoft Office (Word) software by the help of a contracted transcriber. For checking of the accuracy of the transcriptions, they were reviewed and cross-matched with the recorded interviews by the research team. Finally, these transcribed texts were exported to NVivo 9 software for analysis.

Software tool (NVivo 9) was used for recording, storing, indexing, cross indexing, coding, and sorting of transcribed interviews. It also managed large volumes of data and enabled the researchers to locate, label (categorize), cross-reference, and re-arrange various combinations of segments of textual data (Schwandt, 2001).

The thematic analysis method was used for data analysis. The data analysis steps included: a) assigning codes and categories construction, b) sorting categories and data, and c) naming the categories (Hsieh, H. and Shannon, S.E., 2005). The data analysis process was started by reading and rereading of the transcribed data repeatedly to achieve the immersion and familiarity with the transcribed data as a whole. The points of surprise, questions, inconsistencies, and contradictions were noted through these readings. Then data were read word by word to create codes by first choosing the exact words from the text that appeared to express key concepts or thoughts. It was necessary to make notes or records of the first impressions or thoughts during the development of the codes. These

reflective notes helped provide evidence for why and how decisions were made (Hsieh, H. and Shannon, S.E., 2005).

As the process continued, labels for codes emerged that were reflective of more than one thought. These often came directly from the text and then became the initial coding scheme. Codes were then sorted into categories based on how different codes were related and linked. These emergent categories were used to organize and group codes into meaningful clusters. The number of clusters was between 10 and 15 to keep clusters broad enough to sort a large number of codes (Hsieh, H. and Shannon, S.E., 2005).

How the data were displayed and visualized was of concern throughout the stages of the analytical process. A tree diagram was developed to help with organizing the categories into a hierarchical structure. Next, definitions for each category, subcategory, and code were developed. To prepare for reporting the findings, exemplars for each code and category were identified from the data (Hsieh, H. and Shannon, S.E., 2005).

The interviews, data generation, and data analysis continued until the saturation of the emerging codes occurred. Data gathering continued until each category was rich and thick, and until it replicated. When the data offered no new direction, no new questions, there was no need to sample further. Often the first sign was that the researcher has a sense of having heard or seen it all. When data was saturated, the events had been replicated in several cases, and with the replications came verification (Richards, L. and Morse, J.M., 2007).

3.7 Rigour

The study met the trustworthiness criteria. These criteria were helpful in judging the quality or goodness of qualitative inquiry to make the study noteworthy to audiences. The study was conducted following the framework for

assessing the quality of qualitative research introduced by Guba and Lincoln (Guba, E. and Lincoln, Y., 1989), which emphasized four criteria: Credibility, Transferability, Dependability, Confirmability.

3.7.1 Credibility (parallel to internal validity)

Credibility refers to confidence in the truth of the findings: a valid description from the perspective of the participant in the research. It provides assurances of the fit between respondents' views of their life ways and the researcher's reconstruction and representation of same. The following are strategies for fulfilling this criterion: peer debriefing or review, negative case analysis, researcher reflexivity, and member checks (Schwandt, 2001). Techniques used to fulfill this criterion in this study included: 1) member check - findings were presented to the community members and their feedback was integrated into the results; and 2) peer debriefing - findings were shared with the research team and discussed among the members until a consensus was reached.

3.7.2 Transferability (parallel to external validity)

Transferability deals with the generalizability of findings to a wider population or to other contexts or settings. Transferability is enhanced by thoroughly describing the research context and the assumptions central to the research. The researcher is responsible for providing sufficient information to the readers on the case that is being studied, in a way that the readers can establish the degree of similarity between the case studied and the case to which the findings may be transferred. Provision of sufficient information about the researcher, context, participants, and processes is the strategy that should be followed (Schwandt, 2001). In this study, a detailed "Methods" chapter presents all the information regarding the context, participants, and research process required to fulfill this criterion.

3.7.3 Dependability (parallel to reliability)

Dependability focuses on the process of the inquiry and the researcher's responsibility for ensuring that the process is consistent, logical, traceable, and well documented. It can be achieved by maintaining an audit trail and through peer reviews (Schwandt, 2001). In this study, most of the work related to generating and analyzing the data was done digitally and by the computer. All the raw data (transcripts), the analysis, and reporting were documented and organized in different folders and files, which were accessible to the research team. In addition, each step of the research process was thoroughly discussed with the research team members.

3.7.4 Confirmability (parallel to objectivity)

Confirmability establishes the fact that the data and interpretations of a study are not merely fabrications of the researcher's imagination, and that they can be confirmed or corroborated by the participants. It depends on linking assertions, findings, and interpretations, to the data in an easy and understandable way. The strategies that can be followed to fulfill this criterion are: maintaining an audit trail, peer review, and negative case analysis (Schwandt, 2001). In this study, there is an audit trail available for every step of the study in the form of folders and files saved electronically in an external hard drive. The research team also reviewed and discussed the methods, analysis, and interpretation of the data to enhance the quality of the study and the findings.

3.8 Summary

A qualitative case study was found to be the most appropriate method for this research. One of the principal strengths of qualitative research, especially when applied to areas such as social capital, is that it allows for a full and

complete empirical exploration of the concepts and ideas. Qualitative research has a great potential to illuminate some of the ongoing debates regarding the definition, utility, applicability, and impact of social capital in relation to oral health. The distinctive need for case study strategies raised out of the desire to understand complex social phenomena such as social capital. Putnam's communitarian view of social capital was used to design the research, and to analyze the collected data.

Ethics approval was obtained from the University of Alberta Research Ethics Board. A representative advisory committee, formed by one Elder and six key community members from a First Nations community in north central Alberta, provided advice on all aspects of the research process to ensure the culturally appropriateness of the proposal. A purposive sample of 25 individuals was recruited. Seven individuals who were involved providing oral health care for the community attended one-on-one interviews and 18 mothers/caregivers of preschool children who were interested in the topic participated in two focus groups. The principles of informed consent, confidentiality, and anonymity were followed at all times. Each individual interview and/or focus group discussion lasted about 90 minutes. An interview guide including open-ended questions was used to direct the interviews (Appendix 3).

The NVivo9 software was used for the thematic analysis of the data. The study was conducted following the framework for assessing the quality of qualitative research introduced by Guba and Lincoln (1989), which emphasized: Credibility, Transferability, Dependability, and Confirmability. The criteria were met by applied strategies: member check; reviewing and discussing of the findings with peers and colleagues; and maintaining an audit trail.

Chapter Four: Findings

This study was designed to explore the role of social capital in the oral health of pre-school children living in a First Nations community. The data was gathered over 10 months in 2011. Seven individual interviews and two focus groups were conducted inside the community. In this chapter, the results of the study will be presented in three sections: 1) Demographic information of the study participants; 2) Descriptions of the case community under two main headings: 2.1) Social Capital, 2.2) Oral Health; and 3) Oral Health Promotion. Quotes from the individual interviews and focus groups will be presented to support the findings. Verbatim quotes from participants are indicated in "*italics"* and quotation marks. To respect the privacy of the participants and maintain confidentiality, no real names or initials will be used.

4.1 Demographic Profile of the Study Participants

In this section, the demographic characteristics of the participants are explained: 1) Profile of participants in the individual interviews; and 2) Demographics of participants in the focus groups (i.e. age, gender, marital status, education and occupation).

4.1.1 Individual Interviews

Seven individual interviews were conducted throughout the course of this study. Five individuals were interviewed in the Health Office's building of the Band inside the case reserve. Two elders (one female and one male) and three health workers (all female) participated in the individual interviews and provided answers to all open-ended questions in the interview guide. In addition, all participants were parents, and at least two of them had grandchildren as well. Most importantly, study participants were familiar with oral health issues

surrounding pre-school children. In the interviews, they talked about their involvement with oral health issues as part of general or overall health of children.

Two other interviews were conducted with individuals having a history of working with the case community in solving some of their health issues (suicide prevention, HIV & STD prevention, and oral health) and know the community well. These individuals answered questions that were raised after the initial round of individual interviews. These informants helped to clarify some of the applicable complexities, such as cultural background and history of the community.

4.1.2 Focus Group Discussions

Eighteen participants actively contributed to two focus group discussions conducted in the community in December 2011. All participants were living in the reserve, had a First Nations Treaty status, and had children in their care. Ten participants indicated that they had a child below six years of age, while the remainder declined to answer the question regarding the age of their youngest child. Ten participants reported an income of less than $2,000 per month and three individuals did not answer the question regarding their monthly income. Ten focus group members expressed that dental professionals are their main source of oral health information. Other health professions were mentioned by seven participants as their source of information. One individual refused to fill out the demographic questionnaire. Table 4 – 1 summarizes the demographic profile of focus group participants.

Table 4 – 1: Demographic Characteristics of Focus Groups Participants

ID	Age	Gender	Marital Status	Highest Education	Current Occupation
101	38	Female	Married	Grade 12	Unemployed
102	42	Female	Single*	Grade 12	Administration Assistant
103	Missing	Female	Common Law	Grade 9 & Under	Caregiver
104	23	Male	Common Law	Grade 12	Missing
105	Missing	Female	Missing	College or Trade	Custodian
106	58	Female	Single	College or Trade	Missing
107	Missing	Female	Missing	Grade 12	Unemployed
108	21	Female	Common Law	Grade 12	Unemployed
109	25	Female	Widowed	Grade 12	Casual HCA†
110	41	Female	Single	College or Trade	TA‡ /Parent liaison
111	Missing	Male	Divorced	Grade 12	Bus Driver
112	29	Male	Married	Grade 12	Unemployed
113	Missing	Female	Common Law	Grade 9 & Under	Missing
114	28	Female	Common Law	Grade 12	Unemployed
115	53	Female	Married	College or Trade	Child Welfare Caregiver
116	31	Female	Common Law	College or Trade	Missing
117	Missing	Female	Married	College or Trade	Child Care Worker

* Single Parent

† Health Community Assistant

‡ Teaching Assistant

4.2 Description of the Case Community

The overall goal of this study was to identify the strengths and resources that the understudied community has available to address its oral health issues. The name of the study community is not revealed due to the historical stigmatization of the First Nations people. The label "*case community*" will be used for the understudied community.

Our participants talked about the *"close knit nature"* of their community and considered it as one of the strengths of the community. They believed that people knew each other very well and the relationships were very close. They felt they were *"all connected"* and, as a result, strangers can be easily recognized.

It seemed that the community is built up around different clans or families that may have some conflicts with each other, but at the end, *"the spirit of the community"* keeps them together in some way. Therefore, in a time of need, they all get together and help each other. Participants talked about a strong religious belief among the community members and that they were trying to find a harmony between their religious beliefs and their tradition and cultural background as First Nations people:

> *"... over 95% of the people who live in this band are active Catholics and they balance that or have found a way to practice both their First Nations Aboriginal spirituality with their different ceremonies and the Catholic church different traditional activities."*

The research findings were categorized into the following descriptions of the case community:

2.1) Social Capital: In this section, Putnam's concept of social capital was used as our theoretical framework. A deductive approach was applied for the analysis of the generated data. The elements of Putnam's concept were used to guide the analysis: networks of civic engagement; norms of reciprocity; and general trust.

2.2) Oral health: In this section, the current oral health status of pre-school children was the focus of the interviews. The findings of this section were categorized as follows: 2.2.1) Access to oral health information; 2.2.2) Access to dental care services; and 2.2.3) Barriers to accessing dental care.

Emerged themes and categories of case community are summarized in Figure 4-1.

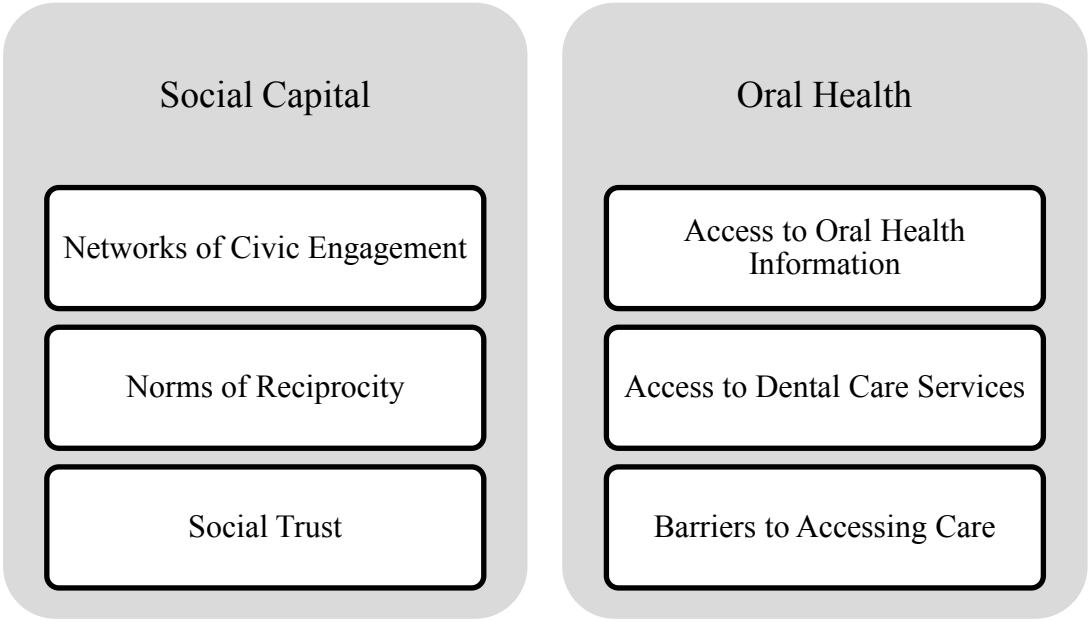

Fig 4 - 1: Themes and categories of case community

4.2.1 Social Capital in the case community

The analysis of generated data resulted in three categories describing different aspects of social capital in our case community. Our findings are organized based on the components of Putnam's concept of social capital: Networks of civic engagement, Norms of reciprocity, and Trust (Figure 4 – 2).

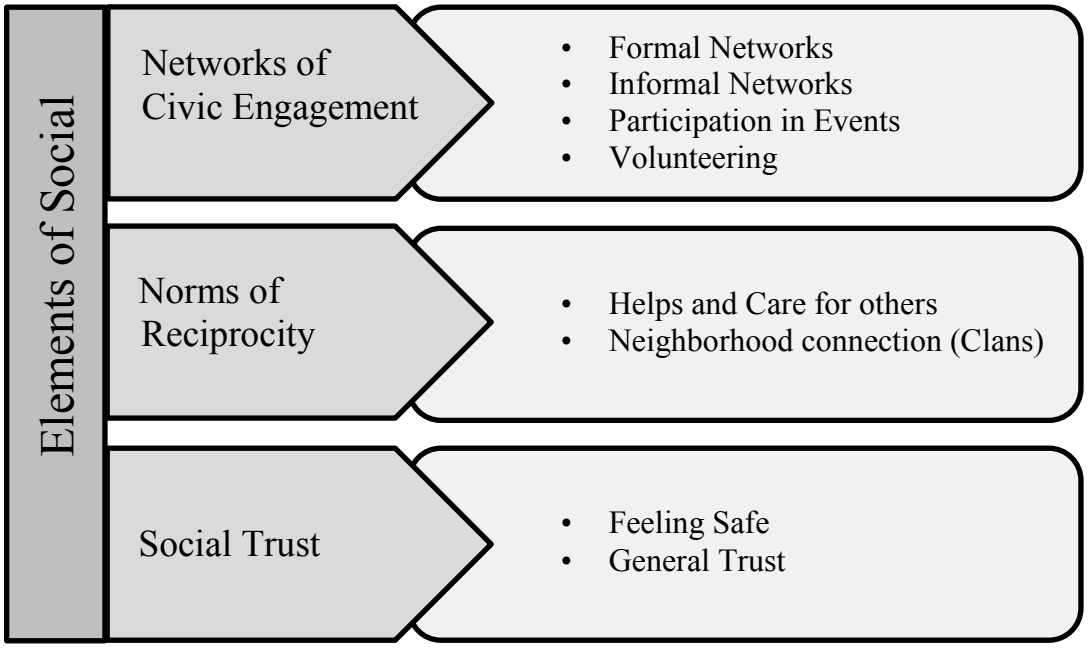

Fig 4 – 2: Elements of social capital according to Putnam and identified categories in current study

4.2.1.1 Networks of Civic Engagement

According to Putnam, one of the components or elements of social capital is networks of civic engagement or social networks. Social networks can be classified as formal and informal networks.

4.2.1.1.1 Formal Networks

Participants in both individual and focus group interviews talked about different formal networks established based on political, educational, religious, and recreational organizations/associations. They talked about a government-funded justice committee that assists people with legal issues to navigate through the justice system. Other formal networks described by the participants were different spiritual support groups such as a pastoral committee that helps the community members with their religious rituals including baptisms, marriages, and funeral preparations. In addition, they talked about the Elders' Association that helps the community youth to understand and connect with their First Nations tradition and cultural background as illustrated in one of the participant's comment:

> "*The elders want to give back to the kids and want to educate children about cultural teachings, cultural preservation, to make sure that the language and the tradition isn't lost."*

They also talked about other active but not officially registered societies that help the community residents in different ways. Some of this associations and groups get their financial support from the governmental programs or several charities:

> *"Well, we do have organizations, they're not a registered societies or anything ……. but we do have women's group, and we do have ball recreation associations where all our children, like different types of recreation, are involved in, skiing, skating…"*

4.2.1.1.2 Informal Networks

Informal networks also seemed to play a major role in this community. As described earlier, this First Nations Band is composed of different clans or families. A strong connection exists among the members in each family.

However, not much interaction seemed to exist outside and among different families. A good relationship was reported among neighborhood residents, which seemed to be a reflection of social ties or bonding social capital because the neighbors were mostly members of a same family:

> *"....I have a really good relationship with my neighbors [be]cause they are all my in-laws (laughs) that's not a fair question, they are all my in-laws (laughing) so we live in clans...."*

Participants also referred to a rivalry among the clans, the *"political setbacks, and historical clan disputes".* At the end, they believed that it is the spirit of the community that helps keep them together:

> *"They might fight amongst each other but, when a need is there everybody comes together."*

In the words of another participant:

> *"....there is situations where people are divided, but in the end, we're a community. A very close community...."*

In addition to family bonding, participants talked about many other informal support groups inside the community that help residents with their day-to-day life in this reserve.

> *"....when I run Alcoholic Anonymous (AA), I just run it from my own pocket, food is the way, so I just buy food and I run it and just people come that need help, that go to AA. I know there's a Narcotics Anonymous, I've never been to that association. I don't know if they have government support of any kind and I don't get government help. I don't get anybody's help."*

The strong bonds among members of the community seemed to increase the solidarity of the community. These bonds were described as a "*super-glue"* that keep the community together.

4.2.1.1.3 Participation in Events

One important component for measuring social capital is the extent to which people participate in social and civil activities. In our case community, people seemed to participate well in those events that are rooted in the community. Elections, spiritual and cultural gatherings, and sports were listed as the most attendant events with many volunteers. People offer different types of supports in order to organize their desired events:

> *"The spiritual and cultural gatherings are always packed with people .... in the memorial dance people come and help, they like the interaction, they like the visitors, they like serving."*

However, events and programs originated from outside of the community usually fail to be properly acknowledged by the members.

> *"....but in the healing community events ..., there was hardly anyone that came ... mostly staff, the odd community member came. I think one of the days they had like 10 people but it's a big community...."*

Lack of proper communication was mentioned as another reason for the community members' minimal participation in the events because the information was not properly circulated inside the community prior to the events, illustrated in this comment:

> *"I think it's lack of communication. When things come up like this and when they say an events gonna happen, they don't share to anybody until it, last minute. Maybe if they notify about [it] a month early, notify the people what's gonna happen, maybe then, you'll have more people interested in helping out."*

From the participants' comments, it appears that active engagement of the community members in any programs requires giving members a voice as well as the ownership of the plan.

4.2.1.1.4 Volunteering

A mixed response with regard to volunteering was received from the participants. While some individuals talked about the difficulty of finding volunteers unless an incentive is offered because *"nobody is interested in volunteering and donating their time"*, the others thought:

> *"....it could be easy and it could be difficult; depends on the interest of the community members."*

When it comes to religious rituals or ceremonial gatherings or sporting events, it seemed that finding volunteers is not a difficult task:

> *"... for hockey and baseball, you would find, if there was something geared towards sports and they needed that help, of course people that roll in that circle are going to support it right, so they're going to volunteer to make it happen and then you have your cultural ceremonies, those people that wanna see that happen will move in that direction too, would give their support."*

For events that have roots in the community, finding volunteers is not a problem like ceremonial gathering or sporting events, but for conditions that imposed on the community, finding volunteers to run the events or programs would be unattainable.

> *"There is some volunteers, those that are dedicated, those that do care but not always though. I think a lot of volunteer also happens during ceremonies, our sun dances, and our sweat lodges. People get together, a lot of men get together to set up, the sun dance lodge, nobody gets paid to do that, they all come together to do that. The women will cook, nobody pays them to do that but if I ask them to go and supervise the kids at the camp, how much (laughing) how much you gonna, or security work, yeah, things like that they will not volunteer."*

Volunteer engagement of community members in organizing and conducting events may be a result of feeling connected with those activities.

4.2.1.2 Norms of Reciprocity

Reciprocity, as a "cognitive" element of social capital, refers to the provision of resources by an individual or group to another individual or group, and the repayment of resources of equivalent value by these recipients to the original provider (Baum & Ziersch, 2003). Generalized reciprocity is based on the assumption that good turns will be repaid at some unspecified time in the future, perhaps even by an unknown stranger.

During the individual interviews and group discussions in our study, this element of social capital was discussed in terms of "Help and Care." Because the community was close knit, everyone seemed to be ready to help other Band members. In the words of two participants:

> "*A lot of people here are basically caring people*; *community members all have something they can give to the community that benefits all of them."*

> *"I like the fact that we do try to help each other and a lot of people do make the effort and we're a small community and people still keep trying. That's a good thing."*

Nonetheless, some hesitations in asking for help were observed among the Band members because they believed that they should *"never go begging for anything"* and they should take care of themselves:

> *"If I need ten dollars or something, I'll never ask. That's just the way my mom had raised us."*

But the community members seemed to be confident that when they need help, they will receive it without any delay. They described themselves as "*just inbred caring people that are kind hearted."*

> *"... I could go ask for help if I needed it… like most of the time what you find is that people are more than willing to help if you need it that way, if for instance I needed you to give me a tug out of the ditch, [be]cause I went in the ditch, if somebody goes by, they'll say oh can I help you or can I take you somewhere or something like that...they won't just leave ya stranded that way if they know you're in trouble..."*

Intergenerational Impact of Residential School (IGIRS) in the form of addiction and substance abuse was mentioned as a barrier for asking help or offering it among the First Nations communities. Participants believed that:

> *"people here are kind hearted to each other and when they're not under the influence [of alcohol or drug] they really care about each other."*

It seemed that they are willing to help their neighbors as much as they can, but they are not going to be able to help individuals when they were under the influence of drugs or alcohol.

4.2.1.3 Social Trust

Understanding social trust, another "cognitive" component of social capital, is essential to better understanding the concept of social capital. The more people trust each other, the greater the chances of mutual interest in collaboration. The subject of trust was viewed by our participants as feeling safe and a general trust inside of the community.

4.2.1.3.1 Feeling Safe

In the interviews, we asked our participants to talk about trust among people and the feeling of safety in their community. Our probing questions were "How safe do you feel your community is?", "Do you lock the door of your house after sunset?", and "Do you feel safe to walk down the street after dark?" The participants were asked to expand their answers and not to provide "yes" or "no" answers. While some participants felt that overall the Band is "*a safe community",* the others described the old days to be much safer than the nowadays:

> *"When I was a kid, we never used to lock our doors, but now you can't even do that [be] cause there's too many people that have no respect for another person's stuff, property and that. They don't have any respect for someone else, that means they don't have respect for themselves and they just go in someone else's home and take things that don't belong to you… "*

Addiction and alcohol abuse were mentioned as the reasons for the community not to be a safe place as it was previously:

> *"….with all the drugs and alcohol and prescription drugs, I don't know if it's as safe as it used to be."*

> *"… and again that leads to alcohol and drugs and young people who are hooked on that stuff they're gonna do whatever, whatever means they can do to get, to get whatever it is they want…"*

4.2.1.3.2 General Trust

In this community, it appeared that people have more trust in the members of their own clans or families than in other community members or strangers because:

> "*… it is a small community, people know each other and know who to trust and who not to."*

Rivalry among different clans and families inside this small community was one of the issues that made it difficult to trust others. This rivalry rooted in political setbacks or historical clans' disputes makes trusting others more difficult:

> *"…Well, when I say clan systems fighting amongst one another or historical grudges. I mean sometimes, someone can bring up something that's a hundred years old and still carry that grudge and not trust another, a different clan or even different family members or something to that respect. And a lot of times that do come up, there are disputes, clans' disputes…."*

Intergenerational Impact of Residential School (IGIRS); described as addiction, substance abuse, and sexual abuse; was a major barrier for trusting among members of the community. They felt that a person who is "*doing alcohol and drugs"* cannot be trustworthy because "*they're going to do whatever means they can do to get whatever they want."* One of the focus group participants described sexual abuse as an example of a breach of trust in their community:

> *"… but in terms of trusting people with my kids, no. I don't trust anybody, other than my husband and I got other family, adopted kids that I trust with my kids, but other, other than, between my husband and myself, I have a very hard time trusting others because of the sexual abuse, I was sexually abused here as a kid, I grew up like that, and I know it's still happening, I know it's still in the community and I know that's what keeping people down is that what they suffered as children, they're hiding it inside and that's the alcohol drug abuse…."*

One participant talked about differences in "classes" among the families and how she treated as a second class community member because she was married to a family in *"the lowest strata of the community".* She expressed her concern as:

> *…….there is a big gap in the [community]between the rich, what who think they're rich and who is poor, who they consider to be poor. So, those gaps kinda interfere with progress.....It's a social gap.*

She expressed her hope for change in the community:

> *"… as I stayed here longer and longer that it just never improved and now it's starting to change. Now people are rising up and saying no, we don't have two class systems here. We all come from the same pot here and there's no class system here."*

When we asked about this difference in classes, one of the participants explained it as:

> *"…. different family living together inside the community and these families are clans or classes that are living inside [the reserve]. The bigger the family is, they have a better chance to run for elected position and when they got to that point, they do whatever favour their family. There are exceptions where good people are elected in make good decisions, so you can't just blanket everybody but the controversy is because of that scenario."*

> *"….. generally, it is the largest family groups, the largest clans that have the power to put into council the one's that they want with the hope that they are going to be favoured and received the houses. The houses and the jobs and the benefits that come from having chief and council on your side. What happens then is that the families that don't have representatives on council are afraid they don't get the jobs, they don't get the houses and that fear is in a lot of, to a large extent realistic and that starts*

the wars. There is jealousy about who gets the housing, who gets the jobs, who gets the benefits of educational grants, so that's what that rivalry is about."

4.2.2 Description of Oral Health in the Case Community

In the individual and focus group interviews, our concerns about oral health were mostly focused on early childhood caries (ECC) and, consequently, the open-ended questions about oral health issues in the community were more related to this phenomenon.

As was mentioned earlier, the overall goal of this study was to identify the strengths and assets (i.e. social capital) that the community has in order to address oral health issues in children and ways that the community resources can be used for planning and implementation of future interventions to address the issue of dental caries in preschool children in this community. Our data analysis resulted in three categories that describe different aspects of oral health in our case community. This section describes the current oral health of preschool children in our case community, facilities that are available to the community, and barriers to an optimal oral health under following headings: 1) Access to oral health information;, 2) Access to dental care services; and 3) Barriers to accessing dental care.

4.2.2.1 Access to Oral Health Information

Participants described their sources of information regarding achieving an optimal oral health during the interviews and expressed different, and sometimes opposite, points of view.

The individuals that were part of the health center and delivering services in the Band described access to oral health information as a service that

community members receive through different channels. This information is delivered in different programs such as Prenatal, Moms and Tots, and Head Start. They expressed that the dental therapist who was previously providing preventive dental services to children was their main source of information. However, it seems that the situation has changed and mothers/caregivers of preschool children receive this information from sources other than the assigned dental therapist. Nonetheless, the Band members clearly stated that they prefer to get the health information from the service providers in the Band health office including the dental therapist. They thought that having access to this information would help them with maintaining a good oral health for themselves and their children:

> *"... there should be more information available to the community members when they come in to ask those specific questions, if there is no dental therapist to come out here anymore, at least have that information and have a referral package..."*

> *"...you would need to create a lot of awareness on the importance of maintaining a good health, healthy teeth, [be]cause sometimes, they don't have information on like gum diseases and stuff like that, and the severity (of) what could happen and stuff like that, I mean as a parent myself, I try to educate my children as much as I can on their teeth..."*

4.2.2.2 Access to Dental Care Services

Access to care was one of the most repeatedly mentioned topics by the participants. The dental treatment services are not available inside the reserve geographical boundaries and they should travel to nearest cities to get access to these services. They described that their preschool and school aged children are supposed to have access to preventive care through a dental therapist inside the community, who is assigned by First Nations and Inuit Health Branch – Health Canada (FNIHB) through a federally funded preventive program called "Children

Oral Health Initiative" (COHI).

Unfortunately, our participants mentioned that they do not have access to these services and the dental therapist because the last one assigned to this community was on medical leave and no substitute was provided. The last time that the community had a dental therapist for their Band was about three years ago:

> *"…. so our dental therapist was sick a lot and, in fact for the last 3 years, we hardly had [one]…"*

> *"….. there's no consistency here for dental care or any kind of oral care [be]cause we haven't had a dental therapist here in years."*

One of the informants, who works with the Alberta Region of FNIHB, explained this problem as a miscommunication between Band members and the community health center on one side and the assigned dental therapists on the other side:

> *"…they may have a perception and a feeling that they're getting less service but it's because the therapist can go in do the work and then they've gotta go somewhere else, cause they've got many communities to serve. Now in terms of what they're actually doing, that makes a difference, the fluoride varnish and the sealants, that's still getting done, but yes, they're not there to maybe give other material for presentation or they're not there to chat with the nurses as much or they're not there to. So, there's a feeling that they're not there as much and not as much is being done but as far as I know …., they've not been missed in a year. The sealants and the varnish have been going on every year regularly so. Often as well, they get done at the school cause the program is portable right, you take it to the school, so the therapist might come into the community, go to the school and not ever show up at the health centre, so the health people don't even know they're there but they're there, they're in the community but as opposed to before where*

they were working outta the health centre, every day they were there, that people would see them and they know they're there, the relationships were developed."

Few months after our focus groups discussions, the research team received a message from the community through the community coordinator of the study that recently a dental hygienist was assigned to the Band to provide preventive services for children.

4.2.2.3 Barriers to Accessing Dental Care

When it comes to oral health issues, community members mentioned some barriers that prevent them from getting the oral health services they need:

4.2.2.3.1 Residential School and Previous Oral Health Experiences

The experience of residential schools was a topic repeatedly brought up by the participants as a barrier to obtain required dental care. They shared stories from their own experiences or what they heard from their relatives about dental care services and prevention in the residential schools era:

" ... the care and the parenting and the nurturing that they would have received at home was not given to them in the residential school, it was a very military type run, you get up, you brush your teeth, you say your prayers, you get dressed, here's the drawers you put your things in, you march in a line, you do not talk, you sit and you do this, you stand and you do this, it was very regimented without the hugs and the affirmations that young children need to, to reach their full potential. What happened then, and this would have a direct impact on [their] oral health, when they came home, they came home determined to shake off the bad feelings and the ghosts of the school and so the last thing they wanted to do was to be regimented and things like brushing their teeth even would be something that would not be important to them, they had been forced to do it, it had not been a pleasant thing to do, I can remember from my own experience, that you would brush so hard your gums would bleed because you had to do it right for

so long and the course, many times all we had was baking soda to sprinkled on a brush that you would use and it was not very nice tasting."

"…. when we were kids, that didn't happen although the dentist they send out, they were so mean that time. They'll come out and your gums are not frozen enough and they just yank your teeth, they never seem to take care of it the way it should be taken care of, like filling and stuff like that."

The impact of previous unpleasant experiences seemed to still impede the dental care seeking behavior of some First Nations people, as explained below:

"…. there also needs to be some sort of trust formed between, the community member and a professional that is willing to treat the individual because I do know that, this goes back to the residential school era and even after, when they had the day schools, they had brought in the dentists, the dentist that used to treat the kids, from stories that I've heard from my sisters, my older sisters, my brother-in-laws, and my cousins, they had a real nasty experience with the dentist because they would just grab them by the arm and drag them and they would extract their teeth without any kind of pain killers and stuff like that, and even that traumatizes a person and they're not going to want to see a dentist with an experience like that. And back in the 1960's, and the 70's, that's what a lot of the people were faced with…"

4.2.2.3.2 Lack of Reliable Professional Care

Participants also talked about their limited/no access to local oral health care services. They explained that finding a reliable health care provider with a safe practice environment is a challenge. One of the participants described:

"… it's trust issue. It's a trust issue depending on whether or not they can build that trust up with them, with the professional himself or herself, cause you don't want them to intimidate you,

you don't want them to scare you and you don't want them to hurt you but at the same time you know, you're gonna need to be able to take their word for it then, that they're just there to help and..."

" ....first professional [who is] coming in to provide these services for the community, and also to give the community information on the service, [they should talk] how comfortable and safe the service is going to be and how reliable it's going to be, those are some things that people consider. I mean, like for myself, ... [when] I was seeing a dentist I also at the same time had asked the dentist who was going to be working on me[?] Do I have to be worried about any kind of racism[?] Do I have to be worried about any kind of service where you're not gonna freeze me properly[?] and to look after my teeth and stuff like that..."

Regarding the reliability of dental care services, one of the participants shared her frustrating experience about going to the dental office and finding that the dentist had moved his office without any notice and all records of her previous dental works were lost:

"I went to go see him to get my teeth fixed cause I was having problems, and he went and took the x-ray, he took x-rays of my mouth and then made an appointment and then I went for my appointment and he was gone, never ever came back and I don't even know his name nothing, but the thing is, when I went to go to another dentist to get my teeth addressed, because that dentist already claimed for those x-rays, that dentist couldn't look after my teeth, I had to wait a year, a whole year, now look at what happened to me."

4.2.2.3.3 Financial Barriers

This community was described by the participants as "*one of the poorest reserves in Canada.*" They talked about their financial struggles in paying for their day-to-day needs including providing quality food for their family. They also complained about having no left over money to save once the core expenses were

itemized. Participants described the poverty in the band, and stated that their priority for oral health fell dramatically. The lack of financial resources also caused reduced access to care. Not all people who reside within the reserve have First Nations Status and eligibility for Non-Insured Health Benefits. In this case, the parents of Non-Status children have to pay for all health care services including dental care from their own pocket "*as if they were off reserve*." Even for the Status card holders, finding reliable health care providers who accept new patients and do not require an upfront payment is a challenge for the participants.

In addition, without financial resources from outside of the community, there are not adequate funds available to plan or to implement any kind of oral health intervention programs that would benefit the community.

4.2.2.3.4 Transportation

Most members of this community talked about transportation as a barrier that would be time consuming and expensive. They also identified that they have to travel to a major city to access many services, including basic dental treatments. However, most of the study participants did not have access to a reliable transportation or a personal vehicle. To get to the city, community members are required to arrange a medical transportation with the health office of the community, a procedure that needs to be completed far in advance to accommodate the many Band residents who rely on this service. Another option for transportation to the city is to hire a friend, family member, or a Band member to provide them a ride to and from the city. As one study participants indicated, for some people, simply obtaining a driver's license for transportation is a challenging process:

> *"…we don't have transportation, our people don't have transportation because they don't work, they can't work because they don't have a driver's license, they don't have a driver's license because they either have past impaired charges*

and they can't do the programs because they don't have the money to pay for it, there is always something that is there as a barrier…"

4.2.2.3.5 Human Resources

In addition to shortage of dental therapist or dental care provider inside the community, the community faces significant difficulties with the current number of healthcare personnel dedicated to continue operation of ongoing medical and health programs.

Therefore, expecting any of these individuals to work voluntarily in a new intervention program, perhaps for oral health, is not a feasible expectation.

" … man powers for one thing, somebody who is actually available to do this, to be available to the community. That's one of the things. It's hard to say.."

With limited funding and limited existing manpower, the health department of this community is greatly restricted in their ability to initiate new interventions or targeted programs without any additional staff and/or financial resources.

4.3 Oral Health Promotion

The overall goal of this study was to identify the strengths and assets (i.e. social capital) of the case community and to explore how to use their resources for planning and implementing of future interventions to improve oral health of their preschoolers. Therefore, our open-ended questions focused on exploring the community needs and resources plus their previous experiences about making changes inside the community to address and to improve oral and other health issues.

In order to analyze data related to the oral health promotion topic, both deductive and inductive approaches were used. The Ottawa Charter for health promotion guided the categorization of emerging themes from the participants' views as listed below: 1) identifying needs; 2) creating supportive environments; 3) strengthening community actions; and 4) improving community abilities.

4.3.1 Identifying Needs

"… If it's a need then something has to be done."

Participants were asked about the oral health status of their community in general and their preschool children in particular. It appeared that this age group never had an oral screening exam before and, as a result, their oral status has remained unknown. The available information related to children's oral health seemed to be mostly based on anecdotal claims. Participants expressed a need for a professional help to gather necessary baseline information about their children's oral health status:

> *"…. I suppose, if we knew where we're at, we could lobby. If we knew exactly where our babies and our kids are at in terms of dental help…"*

They also explained that the community alone was unable to address the issue of oral health and required some form of external support:

> *"Well, I think if we had the ability then it would be done right. I really don't think we have the ability or the resources to make sure that this is met."*

> *"…We need a lot of help from the outside to bring in some kind of oral education and even to bring in a dentist. We would need help from the outside because we're such a small community*

and don't have the means of financially providing that on our own."

As previously discussed in oral health section, the community faces challenges associated with the dental health of their children; however, solutions to these difficulties did not seem to be simple.

Participants also described that the community members had used all their available local resources to address the oral health issues of their children, but the problem has not yet resolved:

"…. we've done the workshops, we've done handouts, we've done visits with, we've asked them to come in and have interviews with a dental hygienist, talk about the child's oral health, talk about how the primary teeth, what foundation they provide for your permanent teeth and … how important teeth are to speech and all that, we did those things and yet, we're still having that problem…"

When asked, *"What can we [the community with the help from the research team] do?"* regarding the issue of oral health in children, an obvious frustration was expressed: *"That's where we bang [our] heads now"*.

4.3.2 Creating Supportive Environments

According to Ottawa Charter, one of the priority action areas is creating supportive environment. A supportive community is defined as an environment where people help and take care of each other and their surroundings. A community could be called "health-enabling community", which is characterized by engagement, mutual support, and trust. This case community has a history of building supportive environments through various health projects. For example, because of one of these projects, the Elders of the Band decided to build an association dedicated to helping youth inside the community by teaching them about the First Nations culture and ceremonial practices, as described below:

"…. just recently in the last 2 years, there's been a group of elders in our community that are working, to try to make things better for the kids whereas in most places it's vice versa. It's the kids doing stuff for the elders but here the elders wanna give back to the kids and wanna educate our children about cultural teachings, cultural preservation, to make sure that our language and our tradition isn't lost. Then that's something, I have to admit I find very unique and being a part of the working team, that's something I always wanted for myself as a child and there was no involvement at the school level with our elders back then, and today there is and I have to commend the elders that step forward to take on this responsibility for our kids and for that I see, this as a very unique asset for our community and our children."

This "community development approach" may be helpful for planning and implementing a future community-based oral health intervention.

4.3.3 Strengthening Community Actions

Health promotion may act through effective community action, where the priorities, strategies and implementation are designed or planned by members of the community to achieve better health conditions. This case community has previous experiences with incorporating community actions to address health problems. A volunteer support group such as Alcoholics Anonymous (AA) is an example of a community action tailored towards resolving a health issue. Another example described by one of the study participants was a rally regarding diabetes inside the community:

"… when we made our posters and we were marching trying to get the community to come out. Come on, let's just come out here and let's walk together, let's eat together…"

During one of the individual interviews, when asked about how it is possible to benefit from previous experiences toward future community actions for addressing the oral health issues, one of the participants said:

"… Gathering those people are something the community themselves can do easily, so you work through your community person. There are some natural gathering things like Aboriginal Head Start which is for preschool, prenatal nutrition for the young, younger ones, and there are Native Counseling Services, there is the NADDAC, the addictions programs, so these are natural gathering of potential people with preschoolers."

"…. going in with programs and giving money to do things is not the answer, the answer is to empower the people to do things themselves for themselves and those are the kind of strategies that we have to do to break the intergenerational impact and to give the responsibility back to the people and the community and the tools and the education and the training that they need to do that."

4.3.4 Community Abilities

Throughout several interviews, community members expressed their ability to act and make changes toward a better situation, but they mentioned that support and resources from outside of the community were necessary for such actions:

"…We need a lot of help from the outside to bring in some kind of oral education and even to bring in a dentist. We would need help from the outside because we're such a small community and don't have the means of financially providing that on our own."

With collaboration between research team and community partners, it may be possible to lobby for changes and bring about new interventions. One of the individuals who worked closely with the community suggested that:

"You [the research team] just have to get them excited about the chance of improving [their current situation]. You have to plant the seeds of realistic hope that it will make a difference. You have to have enough elders and clan leaders on side to

promote it within their own families, and you have to be able to articulate what the benefits are and what the cons are, so you can, so they will make the right decision with enough information."

The conditions surrounding oral health of First Nations people are certainly complex, considering that the FNIHB is responsible for providing healthcare funds for status First Nations people. For example, in the case of providing a dental therapist for preventive services inside the community, the community could not hire a new dental therapist while the previous one was in medical leave. One participant expressed this need as:

"... [we] do need a dental therapist, in a bad way."

Participants indicated that it is possible for the community to make as many decisions as they desire for addressing the oral health issue, but acting on those decisions requires financial supports. The only source of funding for health services inside the community is federal funding through FNIHB of Health Canada and any funding changes through the FNIHB would likely result in a loss of funding towards other programs; a scenario that this case community cannot afford.

4.4 Summary

The key theme and categories identified from the individual interviews and focus group discussions were described in details in this chapter. The Band was found to be a close-knit community, in which residents are ready to help each other when needed.

The findings regarding social capital as a community level determinant of oral health are organized based on the components of Putnam's concept of social capital: Networks of civic engagement, Norms of reciprocity, and Trust. Many

formal and informal networks were identified inside the community. While people had a strong opinion about helping and caring for each other, they had different views regarding the issue of trust in their community.

The oral health status of the community was presented in three categories: access to information, access to care, and barriers to care. The oral health information seemed to be available to the community members through different channels. However, many difficulties were mentioned about accessing preventive and treatment services. The impact of past experiences with the residential schools was identified as a major impediment to dental care seeking in this community. Other barriers such as transportation, insufficient financial and human resources were also listed.

The last part of the chapter specified how previous experiences of the community in building a supportive environment and community actions may help with planning future interventions in the oral health promotion. It was found that social capital concept is an effective community development approach for improving the oral health status of children inside this community.

Chapter Five: Discussion

Attending to a health promotion paradigm wherein complex determinants of health interact, this study explored through qualitative inquiry the concept of social capital as a community-level oral health determinant in a First Nations community setting. This conceptual framework served as a novel and relevant approach to better understand the issues of oral health for this population that exists as a cohesive community. The characteristics of the participant community and its social capital were identified. The oral health status was discussed with particular reference to barriers to accessing oral health care. In addition, the potential for this community to engage in community development interventions surrounding oral health was explored.

The participating First Nations community was found to be "close knit" when considering how committed the members are to helping one another in times of difficulty. Study participants also talked about their participation in and volunteering for various community events. It seemed that events receiving more commitment in terms of time and effort were those that have their roots inside the community or voice the concerns of the community. However, despite this strong bond and commitment to community involvement among members within each family, or clan, the relationship among clans has suffered from historical rivalry and political setback. These issues have affected the social trust between different families and made building trust with other members difficult.

The primary outcome of the discussions related to the community's oral health status was the need for a screening exam for preschool children. Although members of the community have access to oral health information through different channels, inaccessibility to dental care was one of their main concerns. Preventive care is available for some through a federally funded program, but there is apparently a lack of communication between the service providers and the

community members. There is no dental care provider working within the Band's geographical boundaries. Numerous other barriers exist for this community's access to dental care; notable ones include financial constraints and difficulties with transportation. Nevertheless, this community has previous experience with making changes, thus the oral health issues could likely be addressed by the community with provision of external financial and human resources.

A qualitative method was found to be the best approach to unravel the relatively unexplored topic of social capital in oral health. One of the principal strengths of qualitative research, especially when applied to areas such as social capital, is that it allows for a comprehensive and in-depth empirical exploration of a large realm of concepts and ideas. Therefore, qualitative research has great potential to illuminate some of the ongoing debates regarding the definition, utility, applicability, and impact of social capital in relation to oral health. The social context of this community helped to clarify some aspects of the social capital concept, which will be useful for the design of further quantitative and qualitative studies. It also provided opportunity to explore the strategies for mobilization of this concept to address the issue of oral health.

In this chapter, the findings are summarized and compared with the available literature on social capital and oral health. The case community and its social capital are discussed with particular reference to the influence of power and other factors potentially impeding the benefit of social capital. The role of social capital as a contextual determinant of oral health within oral health promotion is discussed. Study limitations are then identified and recommendations for future studies are presented. Finally, the knowledge transfer and dissemination strategies and activities as well as future plans are outlined.

5.1 First Nations Case Community

The concept of "community" is central to social capital discourse (Baum & Ziersch, 2003). Community can be defined as a specific geographical locality with set boundaries or as a group of people who have common concerns and interests or share a sense of identity. Members of a community are tied together by factors such as religious beliefs, cultural background, or ethnic origin (M. K. Smith, 2001).

Social capital can differ within and between communities. The level of social capital inside each community may be affected by the physical, environmental, and economic characteristics of a community (Baum & Ziersch, 2003). This First Nations Band seems to be a *Gemeinschaft* (guh-MINE-shoft) society defined as a traditional society in which social relationships are based on personal bonds of friendship and kinship and on intergenerational stability (D. Kendall, Linden, & Murray, 2007). These relationships are largely based on ascribed rather than achieved status. In this type of society, individuals have a commitment to the entire group and feel a sense of togetherness. Members have a strong sense of belonging, but they have very limited privacy (D. Kendall, Linden, & Murray, 2007).

Our participants talked about the *"close knit nature"* of their community and considered this one of their community's strengths because people know each other very well and their relationships are very close. The residents feel they are *"all connected"* and, as a result, strangers are recognized very easily. As Portes (1998) noted in his article on social capital, poor urban communities frequently depend on close interactions among kin and friends during their everyday activities to maintain survival. This characteristic, whereby neighbors help each other get along with each other and share values, may also be defined as *social cohesion*, (Song, Son, & Lin, 2010) which is used within the health literature

interchangeably with social capital. Kawachi et al (1999) also assert that a cohesive neighborhood is more successful in uniting for its best interests. As a result, communities rich in social cohesion/capital can be more successful in influencing political decisions and campaigning against cuts to local services such as health care. In addition, high levels of social capital in these communities can influence health through the spread of healthy norms (Kawachi, Kennedy, & Glass, 1999).

The strong bonds among members of this community, described as "*super glue",* likely increase the community's solidarity. However, too much bonding seemed to create a backlash at times that encouraged unhealthy behaviors and resistance to change. According to Portes (1998), family ties bind, but sometimes these bonds constrain rather than facilitate particular outcomes. This super glue can be interpreted as the *bonding social capital* that exists inside the community. Although the community clans have a good level of bonding social capital inside their own networks, their *bridging social capital* warrants improvements in some capacity. For example, since each community is built up around different clans, there exists some friction between clans stemming from rivalry and historical clashes. In spite of this background conflict, "*the spirit of the community"* seems to keep the entire community together in some way. Ultimately, times of need bring forth solidarity and assistance.

In the case community, it appeared that people have what is described by Putman (2000) as *thick trust*, referring to a greater trust in the members of one's own clan or family compared to that in other community members or strangers. Ongoing rivalry among different clans and families inside this small community contributes to a difficulty trusting others which has been called as *thin trust* (Putnam, 2000).

According to Putnam's model, networks foster norms of reciprocity, which in turn create social trust (Putnam, 2000). Therefore, trust is essential to enable cooperation for mutual benefit. For example, members of a community in northern Sweden lost their primary health care center after a decrease in their population; having strong opposition to this decision the community decided to take some actions to resolve the problem (Eriksson, Dahlgren, & Emmelin, 2009). Strong and dense associations together with a powerful "helping-out norm" obligated people to engage in the community actions which resulted in the establishment of an association-driven health center where members reclaimed access to proper care (Eriksson, Dahlgren, & Emmelin, 2009). This Swedish experience may help inform the steps needed to improve the general and oral health in our case community.

5.1.1 Social Capital: Individual or Community-level Influence?

In the social capital literature and especially in that related to health, there is ongoing debate about the use of individual versus community approaches to social capital. Some influential authors, such as Bourdieu, propose an individual approach to the concept. Others, including Putman who popularized the concept within health and health promotion, suggest a collective (community) approach. When examining the oral health literature there is no evidence of such polarity with some researchers measuring social capital using a multilevel perspective (individual, family, and neighborhood/community). For example, Furuta et al (2011) investigated the association between the self-rated oral health of young people and the social capital within their family, neighborhood, and school. These authors asked six questions to assess their participants' social capital within the three different settings (1, 2, and 3 questions, respectively) and suggested that neighborhood and school social capital might be important influencers on oral health among young people. Unfortunately, most dental literature on social capital

lacks the use of a solid theoretical framework regarding the concept and/or a comprehensive description of how it was measured. With the exception of a study that directly addressed the validity and reliability of their survey tool which measured social capital (Pattussi, Hardy, & Sheiham, 2006b), the majority of studies leave their readers in the dark regarding this issue (Aida et al., 2011; Furuta et al., 2011; S. J. Moysés, Moysés, McCarthy, & Sheiham, 2006; Pattussi, Marcenes, Croucher, & Sheiham, 2001b).

In this study, Putnam's conceptualization was used and the unit of analysis was established at the community level. As expected, when responding to our open-ended interview questions related to social capital of their community, some participants expressed their answers in terms of the community, such as their group participation in events or the existence of different networks inside the community. However, in some instances, responses reflected individual participation in events or membership in networks. As a result, we inferred that social capital may be a characteristic of both an individual and a community. For the latter, it could be considered as the aggregate of individuals' social capital to some extent. This observation that social capital can be an individual and community feature, or combination thereof, aligns with similar views of others (Eriksson, 2011; Kawachi, Subramanian, & Kim, 2008). Nevertheless, despite different approaches, a clear choice of the unit of analysis is required due to the differing considerations and methods (Kawachi, Subramanian, & Kim, 2008). The relative dominance of the community or individual in contributing to social capital should be explored in future studies.

5.1.2 Social Capital and Influence of Power

The social capital literature, especially where it is based on Putnam's conceptualization, is criticized for being "gender" and "power" blind (Gidengil & O'Neill, 2006) and there seems a need for including these factors in the tools

measuring the distribution of social capital. People with more resources to invest are more easily invited into powerful networks, and dominant societal groups have more power to decide what networks are valuable and to include or exclude people from these networks (Eriksson, 2011).

In the participating community, some participants talked about the difficulty of developing trust within the community and among the clans and families when there is a difference in "classes/clans". They attributed this to over-representation of some clans, which would provide for their members a stronger voice and more leadership positions, resulting in uneven distribution of the power within the community. With larger clans came more representation in leadership and thus greater power. Power or class advantages were repeatedly translated to access to more financial and educational opportunities, which together widen the gap between different classes or clans. In retrospect, using Putman's framework, which considers equality a pre-condition for building trust among community members, was not entirely suitable for this study population. Since Bourdieu was concerned with the main causes of social inequality and hierarchy, he argued that unequal distribution and accumulation of capital (economic, cultural, and social) is an explanation for the production and reproduction of social structure (Song, Son, & Lin, 2010). Bourdieu's concept of social capital (Bourdieu, 1986 [1983]) appears more promising for future work because it seems to provide explanatory insight into the power dynamics of these communities. Nonetheless, adopting Bourdieu's theoretical framework in a similar context requires an in-depth consideration since this would suggest a change in the analytical unit from the community to the individual level.

5.1.3 Social Capital's Dark Side

Most literature emphasizes positive outcomes of applying the concept of social capital when addressing issues within various disciplines. For example, it

has been reported in health literature that greater social capital may be associated with lower levels of reporting poor general health and well-being (Helliwell, 2003; Subramanian, Kim, & Kawachi, 2002), lower cardiovascular and cancer mortality (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997), lower suicide rates (Helliwell, 2003), and lower violent crime rates (Kennedy, Kawachi, & Brainerd, 1998). Various mechanisms have been proposed to explain the connection between social capital and health. One pathway links greater social capital to increased social and material support, which together act as a buffer to stress in adverse times (Wilkinson, 1996). Others describe how socially cohesive communities are more successful at bonding together to oppose potential budget cuts to local services, which can result in creating better access to local services and amenities (Kawachi, Kennedy, & Glass, 1999; Sampson, Raudenbush, & Earls, 1997). It is also presumed that communities with high levels of social capital are more effective at exercising social control over deviant health behaviours such as smoking and alcohol abuse (Subramanian, Kim, & Kawachi, 2002). Despite these examples, there can be another, "dark" (Putman, 2000) side to social capital that remains largely unreported. In his book, *Bowling Alone,* Robert Putnam devotes one chapter to discussing the dark side of social capital; however, he generally states that creating more social capital is good for the society (Putnam, 2000).

Social capital generates many benefits for network members and can help individuals or groups cooperate to achieve a common goal. Consequently, researchers focus mostly on the role of social capital in facilitating cooperation within individuals or communities as a whole. Nevertheless, in addition to the desirable outcomes some negative social consequences can evolve. Group members may exert control over the capital and deny access to its benefit, which may produce undesirable effects for the wider society (Field, 2008). Worse yet, lobby groups and gang members can profit from their own bonding social capital to the detriment of the society (Fukuyama, 2001). Inequality can surface when

social capital creates unequally distributed access to different networks (B. Edwards & Foley, 1997). Each individual can use their connections as a way of advancing their interests, but some people's connections are more valuable than others. People in a relatively powerful position have access to stronger network assets, which in turn can also strengthen their power (Field, 2008).

This issue of inequality was clearly observed in our study: the bigger clan with more voice in community leadership was reported to have more power and thus greater access than others to resources such as housing and educational bursaries. Their lifestyles were seen to benefit greatly by this power, which continually strengthened through re-election of the same leadership. In fact, one of our participants mentioned that people within smaller clans are treated as second class Band members. As Patrick et al. (2006) described, individuals with more favorable characteristics (in this case, power) are classified into a higher social status in the hierarchy, which subsequently determines the provision of rewards. This social hierarchy provides differential benefits to individuals who occupy different positions. As a result, classification acts as a process that formalizes inequality in the form of unequal access to valuable resources, such as quality housing, education, and health care.

In the oral health literature, this dark side of social capital has only been discussed by Furuta *et al.* (2011). These authors reported that informal social control, resulting from strong social cohesion, caused stress and frustration in their young Japanese participants. One suggested consequence of this control was impaired oral health from neglected oral hygiene and improper eating habits (Furuta et al., 2011). All other publications regarding social capital in the field have concluded that social capital has positive effects on oral health: for example fewer dental caries (Pattussi, Marcenes, Croucher, & Sheiham, 2001a; Pattussi, Hardy, & Sheiham, 2006d) and injuries in young populations (Pattussi, Hardy, &

Sheiham, 2006a), and more natural teeth inside an elder's mouth (Aida et al., 2009b; Aida et al., 2011).

Strong bonding among members of a network may also facilitate or hinder change in the community. If the community (as a large network) decides to implement a change, the members are expected to distribute the information widely and support each other in the process. However, if the network feels disconnected from the process, a strong bond among members may cause internal resistance and more stress for some members who are in favor of the change. Thus, the strong solidarity during change may amplify or minimize stress depending on the situation. For example, in the earlier described study of a community in northern Sweden, community members were able to build an association-driven health center through collective actions. A certain "community spirit" was seen as important and this community spirit was "symbolized by the fact that nearly the entire community stands together behind a project" (Eriksson, Dahlgren, & Emmelin, 2009).

5.1.4 Oral Health Status and Barriers to Accessing Care

During our interviews with the participants, the oral health status of preschool children was explored. While participants were concerned about this issue, they did not have any evidence to support their concern due to a lack of baseline data for the community regarding their children's oral health. This lack of evidence is not limited to this Band. In fact, until recently (September, 2012), there was no nation-wide collection or reporting of oral health status of First Nations populations. Even the report of the First Nations Oral Health Survey (FNOHS) performed in 2009-2010 has some limitations such as small sample size and some restrictions related to data quality. Moreover, there was no participation from communities in Alberta or Saskatchewan in this survey (*FNOHS summary report 09-10*, 2012). Therefore, a routine collection of oral health data by health

care institutions and systems is a first key step in identifying, monitoring, and eliminating oral health disparities in Aboriginal communities, similarly suggested by investigators in Ontario (Lawrence et al., 2009).

There is also either no or limited access to dental care inside the geographical boundaries of this Band. Preventive care is available through the federally funded Children Oral Health Initiative (COHI) program, which provides early intervention preventive initiatives geared to dental disease and promotion of good oral health practices. The report of the First Nations Oral Health Survey (FNOHS) stated that the community location can limit access to dental care for many First Nations and can have adverse effects on the possibility of receiving proper and timely care. The poor access to dental care services, especially in remote communities, has been mentioned among the related factors for higher rates of dental decay and oral diseases in First Nations population (*FNOHS summary report 09-10*, 2012). For instance, the geographical location of the community (remote, rural, and urban) has been found to be a determinant factor for accessing to proper dental care in dental literature (Lawrence et al., 2009; Patrick et al., 2006).

The identified barriers to access to oral health care in this study were similar to those outlined in the report from the FNOHS (*FNOHS summary report 09-10*, 2012). Financial hardship and transportation difficulties have been recognized as two major barriers to accessing dental care regardless of availability of non-insured health benefits. For example, poverty and limited access to care and prevention have been associated with the recurrence of dental caries in Aboriginal children who were treated under general anesthesia (Schroth & Smith, 2007). Patrick et al. (2006) also mentioned access to money and reliable transportation as related factors for accessing to proper care. Similarly, poverty in our First Nations community also leaves many families struggling to meet their

primary life needs and, therefore, likely diminishes the priority of oral health for them.

After assessing oral health disparities in Aboriginal children in Ontario, Lawrence et al. (2009) found that it is necessary to address the social determinants of health to gain a better access for Aboriginal children to general and oral health care. The determinants of most relevance would include poverty and poor housing conditions, domestic violence, drug and alcohol addiction, unemployment, and low levels of education and health literacy. Similarly, Patrick et al. (2006) also described the oral health disparities in many American Indian and Alaska Native communities, despite the theoretical availability of dental care, and without cost as a function of tribal status. For these communities, the primary influences are complex and include a combination of factors: 1) geographic isolation; 2)) ethnic differences in social and cultural values; 3) cultural and socioeconomic changes that have strongly affected diet; 4) lack of education as a consequence of social, political and cultural marginalization at the hands of the dominant culture; and 5) overall low levels of income that affect all of these factors (Patrick et al., 2006).

As mentioned previously, the federally funded Children Oral Health Initiative (COHI) program provides early intervention preventive care to Aboriginal children. Unfortunately, not all children living inside this reserve have First Nations Status, which provides them with cards that enable them to access preventive care. In addition, some participants remarked that they had not seen a dental therapist in their community during the past three years. Based on a personal communication with one of the experts who is involved with COHI program in Alberta, it appeared that the utilization of preventive services provided by the assigned dental therapist is indeed poor, and that it seemed that communication between the care providers and the community became lost in translation. Proper communication between community members and care

providers has been found to be effective in reducing oral health disparities in Alaska Native populations (Patrick et al., 2006).

A comprehensive review of empirical evidence has revealed that dental care, particularly care for patients from vulnerable groups, is a complex process (Patrick et al., 2006). Ismail and Sohn (2001) investigated the association between socioeconomic status and the severity of dental caries in six- and seven-year-old children. These children lived since birth in Nova Scotia, Canada, a province with publically financed universal funding of dental care, thus offering life-long access to dental care. In their results, they reported about dental visits, oral hygiene habits, household educational status, exposure to fluoridated water, mean number of decayed-filled- missing surfaces (dfms), and use of dental services in these children. The authors concluded that access to dental insurance, however, does not always guarantee reduction in oral health disparities. A wide range of factors has been found to influence the access and utilization of publicly funded services. For example, underutilization of Medicaid services in the United States was influenced care seeking through: patients' cultural values; educational level; prior experience with dentists; perceived value of dental care; and access.. The delivery of oral care services may also be influenced by practitioners' perceptions of poor patients, financial costs, time, and reimbursement issues (Patrick et al., 2006).

5.1.5 The Intergenerational Impact of Residential Schools (IGIRS)

The intergenerational impact of residential schools (IGIRS) affected this community, largely as related to addiction and substance abuse as mentioned on several occasions in both individual interviews and focus group discussions. This impact and the legacy of residential schools have been discussed at length in the literature (*Exhibit / where are the children?*; D. Smith, Varcoe, & Edwards, 2005; Wesley-Esquimaux & Smolewski, 2004). Consequently, this issue emerged

throughout this study's investigation although particularly when exploring the topics of the case community's social capital and oral health status. Participants asserted that the IGIRS served as a barrier for their offers of help, as much as possible, to their neighbors and other individuals who are under the chronic influence of drugs or alcohol.

The major negative effect of this phenomenon seemed to be a failure in the ability of community members to develop and build trust with those members suffering from this impact. This lower level of trust could translate into a lower level of social capital in the community and consequently to an inferior general and oral health status. Similar findings were observed in a study in the United States where social trust as a cognitive component of social capital was measured among four variables: social trust; sense of belonging; volunteering; and community participation. These authors found that perceived physical health was positively associated with social trust (Fujiwara & Kawachi, 2008). In the dental literature addressing social capital, poor self-rated oral health was associated significantly with a lower level of neighborhood trust. The authors stated that, "Higher trust is associated with better oral health, whereas higher informal control in the community is associated with worse oral health" (Furuta et al., 2011).

The experiences of residential schools and the IGIRS were also repeatedly brought up by participants as barriers to obtaining required childhood dental care. Participants' previous experiences on the poor quality of dental care provided in residential schools may be related to their hesitation to seek dental care. Consistent with this, Al-Hussyeen (2010) found in their study examining factors affecting utilization of dental health services among intermediate female school students in Riyadh, that the quality of dental care can be the most encouraging factor for utilization of dental services.

In another study with participants from four different ethnic and cultural backgrounds in North Carolina, caregivers described their negative experiences with the dental care system for their Medicaid-insured children. After trying to negotiate the steps of finding a provider, arranging an appointment and finding transportation, the participants were left discouraged and exhausted. These participants also reported being faced with additional barriers such as long waiting times and judgmental, disrespectful, and discriminatory behavior from staff and providers due to their race, ethnic, and cultural backgrounds and their public assistance status (Mofidi, Rozier, & King, 2002).

5.2 Community Development to Foster Oral Health Promotion

As described in Chapter 2, various strategies to promote oral health may align with one or more of the five priority action areas outlined in the Ottawa Charter for health promotion: build healthy public policy; develop personal skills; re-orient health services; create supportive environments for health; and strengthen community action for health. In particular, building or mobilizing of community's social capital through community development theory and practice in health promotion literature can play a role in fulfilling the last two priority areas.

Community development interventions do not usually have predetermined agendas for addressing a specific health issue; rather resources are sought for a community health development process. The community often determines the priorities of the intervention using assistance from health professionals although without serving the interests of the professional. The importance of this in community development is evident, for example, when considering the *Caries Transmission Prevention in Alaska Native Infants Study* (CTP) which was

launched by the Northwest/Alaska Center to Reduce Oral Health Disparities of the University of Washington to address the high rate of dental caries in young children in Alaska. The researchers were interested in determining whether or not the serial use of chlorhexidine mouth rinse and xylitol chewing gum could reduce the vertical transmission of caries between 250 Alaska Native mothers and their infants. From the early stages of the study, there were difficulties with recruitment and attrition of participants, both of which drove the researchers to abandon the study. In retrospect, this study's failure resulted from the lack of a culturally appropriate protocol and understanding of the cultural differences between the researchers and the community members (Patrick et al., 2006).

Development interventions may also be prone to power influences related to economic and employment status as well as living conditions, such as poor quality housing, both of which are risk factors for ill health. The principal notion behind community development interventions is the promotion of health, but the immediate objectives relate more to empowerment and generation of conditions in the community to facilitate improvement and maintenance of health.

Engagement by community members in volunteer activities related to organizing and conducting events may be motivated by perceived connectedness with those activities. This relationship was evident through the community experience in northern Sweden where community members became engaged in building a health center (Eriksson, Dahlgren, & Emmelin, 2009). It would be beneficial to incorporate this approach into any model underpinning community health promotion. Early involvement by the community members in identifying their own needs, setting their own priorities, and planning the program, will provide opportunities for ownership that can create a sense of empowerment and self-determination for attaining their goals. After all, we need to keep in mind that health promotion is "the process of enabling people to increase control over, and to improve, their health."(WHO, 2012b)

From the voices of the participants, it appears that active engagement of community members in any program requires that members be given a voice as well as some ownership of the process. This finding aligns with the conceptualization of health promotion as discussed in detail by Robertson and Minkler (1994). Professional consultants or research teams should plan to work *with* the community to empower people to take responsibility for the upcoming changes. Of course any community development effort would complement rather than replace the additional systematic changes required to promote the oral health of this population as reiterated in the FNOHS report:

> "It must be noted that despite prevention efforts, change must also occur on a much larger social scale. Disparity with respect to broad health determinants (e.g., education, poverty, over-crowding, substance use, and provision of care) is highly linked with poor oral health. Smaller-scale prevention efforts are only so effective without the recognition and improvement on these societal-level disparities."

This recommendation for promoting community development interventions is particularly suitable for this understudied community, which has some previous experience in this realm for addressing other health issues such as prevention of suicide and substance abuse. One specific example is their creation of an association whereby elders led youth in various gatherings to facilitate experiential learning of the culture, including its health-promoting practices, and to promote a sense of belonging within the community.

5.3 Study Limitations

This study is to the best of our knowledge the first to explore the concept of social capital for promoting oral health of First Nations people. Potential study

limitations are the small sample and the participants' particular interest in the oral health of their children. These factors would suggest reduced validity and selection bias if the study utilized a positivist paradigm associated with quantitative research; conversely, the sample may be considered purposive by selecting knowledgeable participants to serve the overall goal of this study which was to identify the strengths and resources that the understudied community has available to address its oral health issues. Therefore, although the findings of this qualitative study cannot transfer to First Nations populations at a national level, they do appear to represent the characteristics of one First Nations community to some extent. The research team did their best to explore the social capital concept and the oral health issues within this community, and to provide a rich description of this complex health issue and the challenges they encountered. The collected demographic information was used to enrich this description. Despite limited generalization to other First Nations communities, the results of this pilot study can be used as a foundation to inform future qualitative and/or quantitative studies on similar topics within this or other communities. The major consideration, if applying the findings to other communities, would be to avoid preconceived notions about each unique community where the social factors or influences are tightly joined to various contextual characteristics. Additionally, some of the methodological insight gained with respect to using social capital as a study framework may be useful to others when considering their theoretical lens.

Other limitations of this study include: 1) the limited access to the community despite considerable effort; 2) the constrained budget, which made data collection in this remote community challenging; and *3)* the available time frame for completion of a masters-level graduate degree. Despite these limitations, the research team managed to obtain good quality data from the conducted individual interviews and focus group discussions.

5.4 Recommendations for Future Study

This study was a small scale pilot study in a First Nations community. The results from this study can be used to design additional research to identify in more depth the context of social capital for these communities and/or individuals. Because social capital is connected to the social context of each community, this study's exploration of a First Nations community differs from most studies based on data from urban cities. As mentioned earlier, Putnam's concept of social capital excludes power and gender issues. In this study, these issues were exposed only to the extent that they justify more focused investigation.

The findings from this study may also be incorporated within a population-based survey that could enable a larger, representative sample to be studied in relation to this topic. The identified elements of social capital within this rural setting, together with other results from urban settings, could inform the survey design, ideally, a mixture of qualitative and quantitative research findings would become available to provide a good understanding about the ways in which oral health issues in these communities might be tackled effectively.

The oral health status of First Nations children especially at the preschool age urgently needs to become a higher priority within communities, research funding agencies, and government policy related to health spending and promotion. The currently funded COHI programming may not be able to address this overwhelming problem particularly since many with oral disease will not be captured in these promotion efforts. A clearer picture of the oral health status of the community will help all stakeholders become knowledgeable enough to begin to recognize the needs and set priorities to plan for addressing the issue realistically and productively. Unfortunately, there are at this time no independent evaluations conducted on the effectiveness of funded oral health programs in First Nations communities. It also appears that current collaborations and

communications related to funded oral health programs are lacking in the quality and commitment required to sustain any benefit offered.

5.5 Conclusion

This exploratory study employed a novel approach of investigating the concept of social capital in relation to the oral health of First Nations people and its potential role in improving children's oral health. The overall goal of the study was to identify the strengths and resources that are available to the understudied community to address their oral health issues. A rich description of this complex health issue was generated and some of the unique challenges faced by the community members to address their oral health issues were identified.

The case community was "close knit" with strong intra-family bonds and a high commitment to contribute to community activities. This strong bonding social capital very likely serves as the strengths of the community that may help them achieve the change should the necessary resources be available. The solidarity of the community may be damaged if there is a backlash effect from an overbalance of bonding social capital resulting from class/clan and power inequalities. In this case, change may be difficult to realize for this community. In addition, the bridging social capital of the community needs to improve to facilitate access to external resources required for change.

Volunteerism - a central measure component of social capital at the community level - in this community, seemed to be more common in activities originated from the community. Therefore, early involvement of the community members in identifying their own needs, setting their own priorities, and planning their own program will provide opportunities for ownership that may lead to a sense of empowerment and self-determination in attaining their goals. While the community members expressed their ability and interest to make changes towards

a better situation, they required external supports and resources in order to transform their willingness to action. With a more dynamic collaboration between experts and community partners, it may be possible to lobby for changes and bring about new interventions.

In summary, this exploration of the social capital of the understudied community may provide for them a better understanding of their investment and productivity in community development efforts. This knowledge may be useful to enhance the community's efforts as they strive for improved oral health outcomes by enforcing healthy oral behaviors and improving access to external resources. Ultimately, it could help with efforts to create a more sustainable community-based oral health promotion program.

5.6 Knowledge Transfer Strategies and Future Plans

The first report of the results was prepared for the Community Advisory Committee. During the presentation of this report, the committee's feedback was solicited regarding the findings and the manner in which they should be presented in different settings. Dissemination of the findings continued together with an in-depth discussion of the subject area, and study within this thesis, towards a graduate degree.

To ensure the delivery of the key messages to various other stakeholders a multi-level dissemination strategy has been planned and initiated, according to specific audiences:

5.6.1 Community

Findings of the study and the researchers' interpretations were presented

to the Community Advisory Committee upon completion of the analysis. Once the committee approved the trustworthiness of the findings, further steps and potential follow-up projects were discussed in an open-ended conversational format. The community representatives expressed their interest in continuing their collaboration with the research team. Some of their suggestions for future projects include:

1- Oral health status of the preschoolers: Conducting a cross-sectional epidemiological study was suggested to allow assessment of the current oral health status of children in the community. This baseline data would provide the researchers and the community with hard evidence to justify planning and for evaluating any future interventions and preventive programs.

2- Large scale research projects: Findings of this pilot project encouraged the community to learn more about their strengths (including social capital) as a whole through conducting additional and larger qualitative and quantitative studies. These studies were suggested to be designed in a participatory fashion, thus conducted using collaborative efforts by the community and research team throughout the process. Possible funding sources include the Alberta Centre for Child, Family and Community Research (ACCFCR) and the Canadian Institutes for Health Research (CIHR), among other external funding agencies.

3- Community-based interventions: The community expressed their willingness to make necessary changes to address children's oral health issues in their community. With the knowledge gained from the above proposed studies, the collaborative team (community and research members) will be able to establish a set of priorities and develop and implement an intervention that will voice and address the community's concerns to appropriately resolve this health issue.

5.6.2 Academia

1- A poster based on preliminary findings of this study was created and presented at the 17th Qualitative Health Research Conference held by the International Institute for Qualitative Methodology in Vancouver, British Columbia in October 2011.

2- The final results were presented orally at the Canadian Association of Public Health Dentistry (CAPHD) Annual Conference in Charlottetown, Prince Edward Island in September 2012.

3- An abstract has been submitted to the International Association of Dental Research (IADR) conference that will be held in Seattle, Washington in March 2013.

4- Two scientific manuscripts will be prepared and submitted for publication. The first paper will be a systematic review of the concept of social capital in oral health literature. The second manuscript will report the study and its findings and implications.

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Appendices

Appendix 1: Ethics Approval

Approval Form

Date:	September 30, 2010
Principal Investigator:	Maryam Sharifzadeh-Amin
Study ID:	Pro00014318
Study Title:	Understanding the Role of Social Capital in Oral Health of First Nation Children
Approval Expiry Date:	September 29, 2011

Thank you for submitting the above study to the Health Research Ethics Board - Health Panel . Your application, including revisions received August 27, 2010, has been reviewed and approved on behalf of the committee.

A renewal report must be submitted next year prior to the expiry of this approval if your study still requires ethics approval. If you do not renew on or before the renewal expiry date, you will have to re-submit an ethics application.

Approval by the Health Research Ethics Board does not encompass authorization to access the patients, staff or resources of Alberta Health Services or other local health care institutions for the purposes of the research. Enquiries regarding Alberta Health Services administrative approval, and operational approval for areas impacted by the research, should be directed to the Alberta Health Services Regional Research Administration office, #1800 College Plaza, phone (780) 407-6041.

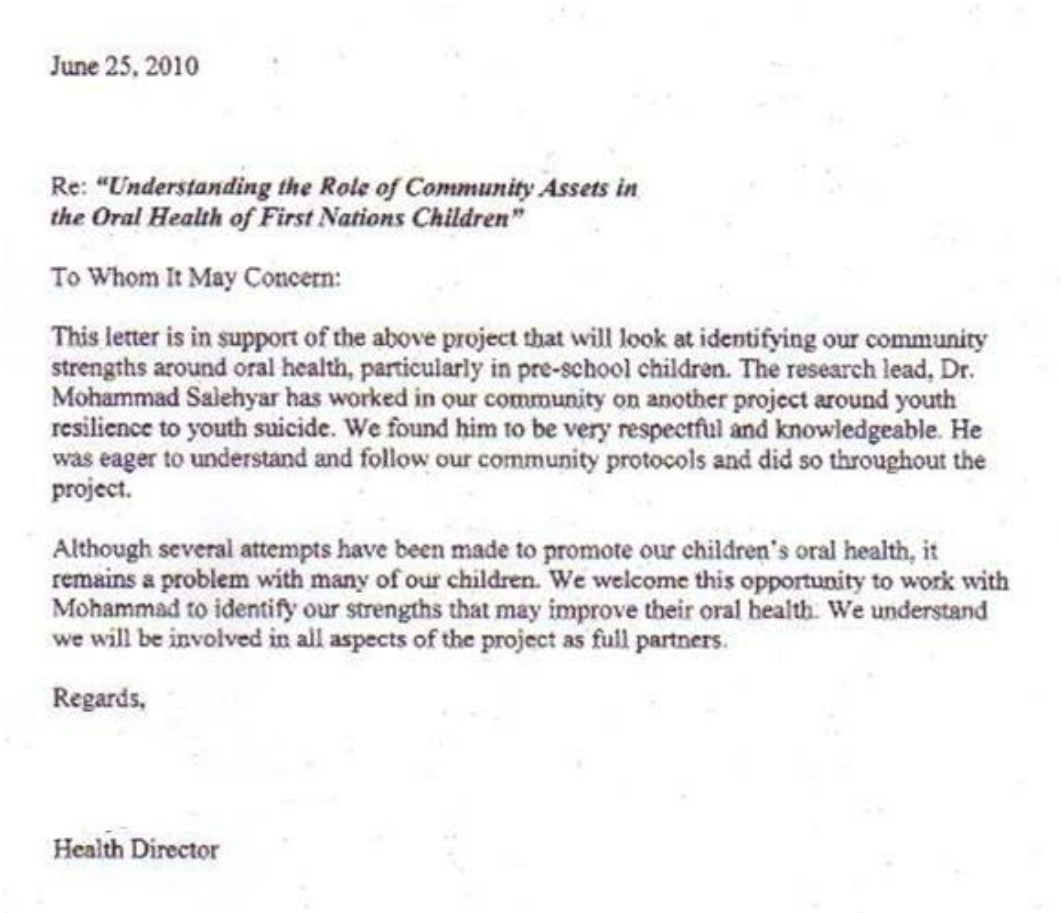
Sincerely,

Doug Gross, Ph.D.
Associate Chair, Health Research Ethics Board - Health Panel

Note: This correspondence includes an electronic signature (validation and approval via an online system).

Ethics Approval from Health Research Ethics Board of University of Alberta

Appendix 2: Support Letter



June 25, 2010

Re: ***"Understanding the Role of Community Assets in the Oral Health of First Nations Children"***

To Whom It May Concern:

This letter is in support of the above project that will look at identifying our community strengths around oral health, particularly in pre-school children. The research lead, Dr. Mohammad Salehyar has worked in our community on another project around youth resilience to youth suicide. We found him to be very respectful and knowledgeable. He was eager to understand and follow our community protocols and did so throughout the project.

Although several attempts have been made to promote our children's oral health, it remains a problem with many of our children. We welcome this opportunity to work with Mohammad to identify our strengths that may improve their oral health. We understand we will be involved in all aspects of the project as full partners.

Regards,

Health Director

Support Letter from the First Nations Case Community

For confidentiality purposes, all identifiers including the letter head, the logo of the community, Health director's name and signature were removed from original letter.

Appendix 3: Interview Guide

Understanding the Role of Social Capital in Oral Health of First Nation Children

The moderator will start the session by introducing her/himself to the participant along with a brief summary of the study. Then they will outline the ground rules that will guide the individual interview. The consent form will be distributed and participant will fill it out before starting of the discussion.

Community

- How would you define or describe your community?

- How do you feel about the place you live in?

- Probing Questions:

What is good about your community? What do you like about your community? What don't you like (if any)?

What makes your community different or recognizable from other First Nation community?

How separate are poor and riches in your community? Is there a wide gap between the poor and the rich in your community?

Social Capital

A. Participation in the Local Community

- Tell me about the participation of people in your community events, volunteering, and support groups.

- Probing Questions:

How often do you participate as a volunteer in the community events?

What activities do exist in your community that need participation of volunteers and local people?

Is it difficult to find volunteers for an event in the community? When was the last time that you participated in an event as a volunteer?

B. Feelings of Trust and Safety

- Tell me about trust among people and feeling of safety in your community

- Probing questions:

How safe do you feel your community is? Do you lock the door of your house after sunset? Do you feel safe to walk down the street after dark?

How much trust do you have in other people who live in your community? Are they trustworthy?

C. Neighbourhood Connections

- How would you describe relation between people with each other and their neighbours?

- Probing Questions:

How good is the relationship between you and your neighbours?

How comfortable are you to ask them for help when you need it?

Would you help your neighbours when they need it? Are they comfortable enough to ask your help?

D. Family and Friends Connections

- Tell me about the interaction among families and friends.

How much connection do you have with your family and friends?

How big is your circle of family and friends?

E. Tolerance of Diversity

- Tell me about your experience with people outside of the community

How do you feel about people with a different lifestyle or system of beliefs? Would you feel comfortable living among these people?

How does your community treat new people in the community? Are they welcomed or still considered as an outsider even after they reside in the community?

Are there any interactions between you and people outside the community?

Oral Health Promotion

1. Creating supportive environments

What can the community (collective actions) do about oral health issues such as tooth decay? Is there any power/will or interest in your community to address this issue?

How can a supportive environment be created to address this issue?

Is it a priority for the community to address the oral health of young children?

2. Promoting health through public policy (Individual Interview)

How community can change policies to address oral health issues ? for example: restriction of sugar consumption and fluoridation.

What are the available inside/outside resources and connections to address the issues?

3. Strengthening community action

What are the facilitators and barriers?

What internal and external resources do the community have that would help resolve this problem?

4. Developing personal skills

What does oral health mean to you?

Where do you get the information you need for taking care of your kids` teeth?

How a trusted and supportive environment can play role in the improvement of personal skills?

5. Reorienting health services

If you need help to solve the problem, which of the following is an appropriate network:

- To get more information and address the problem?
- To talk about the issue and ask for help?
- To borrow money and resolve the problem?

Do you know about COHI? Do you know about its services? How the community can improve the rate of using of the services of this initiative? What works & what doesn't?