

**ADDRESSING SMOKING CESSATION AMONG
PREGNANT ABORIGINAL WOMEN: CHALLENGES AND
GAPS IN KNOWLEDGE**

by

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ABSTRACT

The high prevalence of smoking among pregnant Aboriginal women – including First Nations, Inuit and Métis women - has been identified as a public health concern in Canada. There is a paucity of research exploring socio-cultural influences on maternal smoking cessation and culturally appropriate interventions for Aboriginal women. Aboriginal people embrace a holistic view that reflects the interrelatedness of the physical, spiritual, emotional and mental dimensions of health. These must be acknowledged when addressing smoking cessation. In order to address the high prevalence of Aboriginal women who smoke during pregnancy there is a need for a better understanding of women's experiences of smoking during pregnancy and their own knowledge, beliefs and personal barriers with regard to quitting smoking. The purpose of this paper is to identify the challenges and knowledge gaps in addressing Aboriginal maternal smoking cessation, in addition to proposing specific culturally appropriate recommendations for future research.

Keywords: Aboriginal health, pregnant women, smoking cessation.

DEDICATION

To Adam,

For putting up with my never-ending procrastination and always reminding me what I can do, even when I think I can't...

Love, Emily

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1: BACKGROUND

Despite extensive public health efforts to reduce smoking rates through education, media campaigns and the development of cessation interventions, smoking during pregnancy remains a significant population health concern in Canada (Greaves et al., 2003; Al-Sahab, et al., 2010, Mehaffey et al., 2010). Maternal smoking during pregnancy has been identified as one of the most preventable risks of adverse perinatal health outcomes in developed countries and is clearly associated with multiple adverse outcomes for both the mother and fetus (Heaman & Chalmers, 2005; Greaves et al., 2003; Al-Sahab et al., 2010; Public Health Agency of Canada, 2008).

A thorough understanding of smoking behaviour among pregnant women must acknowledge the influence of social determinants of health. “Social determinants of health are the economic and social conditions that shape the health of individuals, communities and jurisdictions as a whole” (Raphael, 2007, 19). Social determinants – such as education, income, social support networks, and culture – influence a wide range of health risks and health behaviours, including smoking prevalence during pregnancy (Greaves et al., 2003). Low levels of maternal education, income and social support are each associated with higher rates of smoking during pregnancy, which is in turn associated with adverse perinatal health outcomes. The social determinants of health do not act in isolation; the complex interaction among these many determinants of health

appears to create a trajectory of health and illness for individuals and communities (Loppie Reading & Wien, 2009).

The effects of smoking on a fetus are profound. Research has clearly delineated an association between fetal smoke exposure and subsequent preterm delivery, low birth weight infants, complications with the placenta, stillbirth, and sudden infant death syndrome (Cnattingius, 2004; Andres, 2000; Shah & Bracken, 2000; Kallen, 2009). Canadian data suggests that each year maternal smoking accounts for approximately 20%-30% of low birth weight babies and 14% of preterm deliveries and is responsible for 10% of all infant deaths in Canada (Health Canada, 2005). Similarly, Chan and colleagues (2001) found that women who smoked during pregnancy had a higher relative risk (RR) of having a preterm birth (RR=1.64), and having babies that were small for gestational age (RR=2.28), and of low birthweight (RR=2.52) compared with women who did not smoke during pregnancy. All three of these outcomes showed a significant dose-response relationship - higher levels of smoking were associated with higher relative risks. Not only do these less than ideal perinatal outcomes require additional resources in the short term to maintain the health of the newborn child, but the long-term costs to the health care system have also been found to be substantial (Canadian Institute for Health Information, 2009; Adams & Young, 1999). The reason for this is related to the increased rates of sudden infant death syndrome and sudden unexplained death in infancy, asthma, increased risk of developing certain types of cancer and increased behavioural disorders (e.g. attention deficit hyperactivity disorder) reported in

children who were subjected to maternal smoking as a fetus (Public Health Agency of Canada, 2008; Health Canada, 2005; Herrmann et al., 2008).

The effects of smoking on the mother during pregnancy are also considerable given that smoking tobacco is a known cause of cancer and is a risk factor for a wide range of poor health outcomes including circulatory, pulmonary and cardiovascular disease (Health Canada, 2005). Nicotine - the main ingredient in tobacco – is extremely addictive and causes physical withdrawal symptoms that can add to the difficulties in quitting smoking (Health Canada, 2009). In addition to nicotine, cigarette smoke contains more than 4,700 chemicals, including at least 40 known carcinogens (Bartecchi et al., 1995). Even though the adverse health outcomes associated with smoking are well known and have been a public health concern for more than 45 years, it is still a significant contributor to mortality and morbidity in the Canadian population (Greaves et al., 2003; Herrmann et al., 2008; Reading, 1999). In 2002, approximately 37,000 deaths in Canada were attributed to smoking, accounting for more than 16% of all deaths in Canada during that same year and approximately 515,608 years of life lost prematurely (Baliunas et al., 2007). Therefore, it comes as no surprise that women who smoke during pregnancy are substantially increasing their risk of developing serious disease as well potentially shortening their life expectancy (Health Canada, 2005).

While the overall Canadian prevalence of smoking during pregnancy continues to decrease, progress has not been consistent throughout the country. In 2006, the Canada-wide prevalence of maternal smoking was reported to be

10.5%, a notable decrease from previous maternal smoking rates reported by the Canadian Community Health Survey¹ in 2000 and 2005 of 17.7% and 13.4%, respectively (Public Health Agency of Canada, 2009; Public Health Agency of Canada, 2008). However, examination of province-specific data shows significant variability. Results from the Maternity Experiences Survey² indicate that maternal smoking rates varied greatly throughout Canada with the lowest maternal smoking rates being recorded in British Columbia (8.5%) and Ontario (8.8%) and the highest rates being the combined rate for the Northern Territories (39.4%) (Public Health Agency of Canada, 2009). Consistent with these findings, the Canadian Community Health survey reported that in 2005, maternal smoking rates were the lowest in British Columbia (9.7%, 95% confidence interval (CI): 7.4 – 12.0), and the highest both in Nunavut (59.5%, CI: 43.4 – 75.5) and in the Northwest Territories (32.8%, 95% CI: 22.0 – 43.6) (Public Health Agency of Canada, 2008). Even though the Canadian data indicate that rates of smoking during pregnancy have been declining, it has been suggested that this is likely due to a decline in the overall prevalence of smoking among women of

¹ The Canadian Community Health Survey was conducted by Statistics Canada to provide cross-sectional estimates of health determinants, health status and health system utilization for health regions across Canada. The target population is all Canadians over the age of 12; however, certain groups such as Aboriginal people living on reserves and crown land are not included in the sample. The survey includes 65,000 respondents on an annual basis (Statistics Canada, 2010).

² The Maternity Experiences Survey is a national survey of Canadian women's experiences, perceptions, knowledge and practices before and during pregnancy, birth and the early months of parenthood. The survey is a project of the Public Health Agency of Canada's Canadian Perinatal Surveillance System, which monitors and reports on determinants and outcomes of maternal, fetal and infant health in Canada. The survey interviewed a stratified sample of 6,241 mothers over the age of 15 who had given birth 3 months prior to the 2006 Census. First Nations, Inuit and Métis mothers were not included in the survey (Public Health Agency of Canada, 2009).

childbearing age, rather than increased rates of smoking cessation during pregnancy (Paterson, Neimanis & Bain, 2003). The results from the Canadian Tobacco Use Monitoring Study³ in 2009 are in keeping with this explanation as smoking prevalence among Canadians age 15 years and older has decreased to approximately 18% (close to 4.9 million Canadians), from 25% in 1999 (Health Canada, 2010). Although this data gives a general overview of maternal smoking rates in Canada, comparison among the rates published by different studies needs to be interpreted with some degree of caution as the method of collecting maternal smoking data is not standardized, leading to inherent variability in the reported results (Al-Sahab et al., 2010). Moreover, the social stigma surrounding smoking behaviour leads many women to underreport their smoking patterns or deny that they are smoking during pregnancy altogether (Public Health Agency of Canada, 2009; Greaves et al., 2003; Wood et al., 2008). Therefore, the actual rates of maternal smoking in Canada may be higher than those reported.

Similar to the inter-provincial variability observed in maternal smoking prevalence rates, there are specific sub-populations within Canada that have been identified as experiencing significantly higher rates than others. Research has consistently documented that Aboriginal people experience higher rates of smoking than non-Aboriginal Canadians (Health Canada, 2005). Aboriginal peoples in Canada include First Nations, Inuit and Métis peoples and make up

³ The Canadian Tobacco Use Monitoring Study was developed to provide Health Canada with timely, reliable and continual data on tobacco use. The survey's primary objective is to track changes in smoking status and amount smoked. The 2009 annual survey collected data from 20,121 respondents from February to December 2009. The overall margin of error for the smoking rate for Canada is +/- 1.0%.

3.5% of the Canadian population. These are three distinct groups with considerable historical, cultural, political and traditional diversity (Indian and Northern Affairs Canada, 2010). Due to the limited maternal smoking research specific to these groups, for the purpose of this paper the term 'Aboriginal people' or 'Aboriginal women' will be used unless otherwise specified as First Nations, Inuit or Métis within the referenced literature. In 2002, estimates of smoking rates among First Nations people in Canada were recorded as 51% and 58% for those living off and on-reserve, respectively (National Aboriginal Health Organization, 2006; Tjepkema, 2002). In 2004 an estimated 60% of First Nations people living on-reserve, between the ages of 18-34 smoked, and an estimated 70% of Inuit people living in northern Canada between the ages of 18 and 45 reported being a current smoker (Health Canada, 2007). Furthermore, Health Canada reported that approximately 48% of Métis people over the age of 18 years were current smokers (Health Canada, 2007b). These groups who appear to have the highest smoking rates are not being successfully reached by the public health interventions directed at reducing smoking cessation in the general Canadian population (Greaves et al., 2003; Cancer Care Ontario, 2008; Reading, 1999).

Higher smoking rates have also been reported among Aboriginal women who are pregnant compared with non-Aboriginal women who are pregnant (Heaman & Chalmers, 2005; Wenman et al., 2004; Mehaffey et al., 2010). National and provincial rates of Aboriginal maternal smoking in Canada are not well documented in the literature; however, surveys and studies throughout

Canada have consistently found that the prevalence of Aboriginal women who smoke during pregnancy is at least twice the prevalence of non-Aboriginal women who smoke during pregnancy (Heaman & Chalmers, 2005; Mehaffey et al., 2010; Wenman et al., 2004). Heaman & Chalmers (2005) found that in Manitoba, a significantly higher proportion of Aboriginal women⁴ smoked before pregnancy compared to non-Aboriginal women (74% compared to 34.6%, respectively). Additionally, they found that although smoking during pregnancy decreased in both Aboriginal and non-Aboriginal women, 61.2% of Aboriginal women continued to smoke during pregnancy compared to 26.2% of non-Aboriginal women (Heaman & Chalmers, 2005). Wenman and colleagues (2004) found that 36% of Métis women and 44% of First Nations women in their study smoked during their pregnancy, compared to 13% of non-Aboriginal women⁵. Consistent with Canadian data, the disparity between high rates of Aboriginal women who smoke during pregnancy compared with non-Aboriginal women is documented in the United States, New Zealand and Australia (Wood et al., 2008; Heaman & Chalmers, 2005; Thomas & Glover, 2010).

⁴ Aboriginal status was based on self-identification. Of the Aboriginal participants, 207 women self-identified as First Nations, 45 as Métis and 6 as Inuit. The prevalence of smoking during pregnancy was not reported for these specific groups, but was reported by “Aboriginal” and “non-Aboriginal” groups.

⁵ Aboriginal women accounted for 3.9% of the participants who completed the study, 45 First Nations women and 25 Métis women, from a total of 1811 women.

2: INTRODUCTION

First Nations, Inuit and Métis peoples continue to experience high rates of smoking at a time when the national smoking rates continue to decline (Health Canada, 2007; Reading, 1999). This disparity suggests a complex interaction between the social determinants of health, cultural norms and the challenges of prioritizing smoking cessation (Reading, 1999). This high prevalence of smoking is particularly significant when exploring smoking during pregnancy and the imminent and distal health impacts on the fetus. Aboriginal people throughout Canada generally experience poorer perinatal health outcomes such as higher rates of preterm birth, stillbirth, and infant mortality when compared with non-Aboriginal people (Keenan Research Centre, 2009; British Columbia's Aboriginal Maternal Health Project, 2006; Mehaffey et al., 2010). Although there are numerous factors contributing to this disparity (e.g., access to adequate and timely prenatal health care), smoking is one causative factor that can be directly modified by the mother (Barron et al., 2007; Greaves et al., 2003). Smoking reduction and cessation during pregnancy can have significant and immediate beneficial health outcomes for both the mother and infant, while reducing the risk of developing long-term health complications (Barron et al., 2007; Greaves et al., 2003; Lumley et al., 2009). Tobacco smoking cessation among Aboriginal women is a complex health issue that requires further exploration from an Aboriginal health perspective (Reading, 1999). Aboriginal health involves the

physical, emotional, mental and spiritual aspects of a person interrelated with his or her family and community (Adelson, 2005). Efforts to better understand and address maternal smoking behaviours and the current gaps in research must be explored not only by Aboriginal women, but Aboriginal communities, if they are to be successful at reducing the high rates of maternal smoking, and ultimately help to improve community health and well-being.

3: RATIONALE

High smoking rates among Aboriginal people - specifically high rates of smoking among pregnant Aboriginal women - have been identified as an important public health concern. Despite the extensive literature available on the risks of maternal smoking and the importance of targeted maternal smoking cessation programs throughout Canada, there is a paucity of research exploring culturally appropriate maternal smoking cessation interventions for Aboriginal women (Greaves et al., 2003; Cancer Care Ontario, 2008; Baillie et al., 2008). Furthermore, there is a lack of understanding concerning Aboriginal women's experiences of smoking during pregnancy and their own knowledge, beliefs and personal barriers with regard to quitting smoking (Wood et al., 2008, Varcoe et al., 2010).

Current smoking cessation interventions have not adequately addressed the high prevalence of Aboriginal women who smoke during pregnancy. In order to address the high prevalence of Aboriginal smoking during pregnancy there is a need for a better understanding of the factors that promote or impede smoking cessation among these women. The purpose of this paper is to identify the challenges and knowledge gaps in addressing Aboriginal maternal smoking, in addition to proposing specific culturally appropriate recommendations for future research.

4: METHODS

This critical review examined research relevant to maternal smoking cessation among Aboriginal women in Canada in order to address the question of why it has been so difficult to reduce the prevalence of Aboriginal women who smoke during pregnancy. An electronic search using Ovid (Psychinfo, Medline, Social Work Abstracts and Global Health) database was conducted in order to identify scholarly articles exploring the current knowledge and practices for maternal smoking cessation interventions designed for Aboriginal women. Key search terms included: maternal smoking, pregnancy and smoking, smoking cessation, quitting smoking; and Aboriginal people, First Nations, Métis, Inuit, American Indian, and Indigenous Peoples. Search limitations included full-text, English language, and publish dates between 1990-2010. This scholarly search brought to light a significant deficit in academic articles relating to maternal smoking among Aboriginal people in Canada. The reference lists from relevant studies were also checked in order to identify further pertinent studies and reports. Articles prior to 1990 were considered if they had been referenced within a relevant article.

Within the Canadian literature five studies were identified that included Aboriginal maternal smoking as a main measured outcome or a main research topic (Appendix 1). Three of the identified articles explored the prevalence of Aboriginal women who smoked during pregnancy compared to non-Aboriginal

women, while the other two articles focused on the importance of addressing Aboriginal maternal smoking using holistic, culturally appropriate approaches. Results and recommendations were compared for consistency and identification of gaps in the literature. Given the limited number of relevant articles identified, the search was then expanded to identify literature addressing smoking cessation among pregnant women in the general Canadian population. This included a search of the grey literature from relevant websites including: Health Canada, Public Health Agency of Canada, Canadian Council for Tobacco Control, as well as sites specific to Aboriginal health and smoking such as Tobbacowise.com, National Native Addictions Partnership Foundation, Inuit Tobacco-free Network, National Aboriginal Health Organization, First Nations Inuit Health Branch, National Indian & Inuit Community Health Representatives Organization, and the Centre of Excellence in Indigenous Tobacco Control. Three noteworthy Canadian reports – Expecting to Quit: A Best Practices Review of Smoking Cessation Interventions for Pregnant and Postpartum Girls and Women (Greaves et al., 2003), A Case Study Approach: Lessons Learned in Ontario – Aboriginal Tobacco Cessation (Cancer Care Ontario, 2008), and The Tobacco Report (Reading, 1999) - provided extensive information about maternal smoking cessation and Aboriginal smoking cessation. Due to the limitation of relevant Canadian data, some literature pertaining to maternal smoking cessation research in the United States and among Indigenous Women from Australia was also included in the review. After expanding the search, approximately 40

additional peer reviewed articles and community and government reports related to smoking cessation were reviewed.

The identified literature was analyzed and used to propose why current population based initiatives have failed to adequately reduce smoking among Aboriginal women. Knowledge pertaining to maternal smoking cessation in non-Aboriginal women was compared to documented knowledge concerning smoking cessation among Aboriginal women who are pregnant. This comparison highlighted significant gaps in the knowledge and understanding of why Aboriginal women quit and do not quit smoking during pregnancy and supported the need for culturally appropriate community based research and interventions.

5: RESULTS

5.1 Challenges for Aboriginal Women to Quit Smoking

Quitting smoking in general is extremely difficult irrespective of an individual's cultural background. Although some women are able to reduce their use or quit smoking altogether during pregnancy, a Canadian national survey in 1994 found that only 16% of maternal smokers had made an attempt to quit during their pregnancy (Connor & McIntyre, 1999). More recent Canadian data suggests that 25%-40% of women who smoke and become pregnant will attempt to quit smoking at some time during their pregnancy (Selby & Dragonetti, 2007). Similar research from the United States indicates that the percentage of women who spontaneously quit smoking during pregnancy is higher and increased from 37%-46% between 1993 and 1999. Unfortunately, this cessation is often only temporary and the reported relapse rates are high. (Coleman & Joyce, 2003). Approximately 25% of women report relapsing back to smoking before delivery, 50% return to smoking within 4 months after giving birth and 70%-90% by one year after giving birth (Klesges, Johnson, Ward & Barnard, 2001 in Greaves et al., 2003).

The factors that influence smoking initiation, maintenance, cessation and relapse are complex and, for some populations, poorly understood. With regard to the Aboriginal population, although social determinants of health (e.g., socioeconomic status, education, age and cultural norms) certainly influence

smoking behaviour (Greaves et al., 2003; Loppie Reading & Wien, 2009) and even though Aboriginal people generally smoke for many of the same reasons as non-Aboriginal smokers, (e.g. coping strategy, social activity) there are additional historical and cultural elements that need to be considered as contributing factors (Reading, 1999; Wood et al., 2008). Within the context of promoting smoking cessation among pregnant Aboriginal women there are several challenges and barriers specific to this population that have been identified in the literature.

5.1.1 Socio Economic Status

The high prevalence of smoking among Aboriginal women has been associated with the systematic historical marginalization of Aboriginal people in Canada (Greaves et al., 2003). There is an extensive disparity between the high rates of smoking among Aboriginal women compared to the rates of non-Aboriginal women; this disparity is rooted in the fact that low socioeconomic status is a fundamental issue for Aboriginal people throughout Canada (Reading, 1999; Baillie et al., 2008). Not only is low socioeconomic status associated with the initiation of smoking behaviour across various ethnic and cultural groups, but women from low socioeconomic backgrounds face multiple obstacles (e.g., low literacy rates, poor access to childcare, transportation costs, etc.) that interfere with their ability to access available cessation interventions (Greaves et al., 2003). While overall rates of smoking in Canada have gradually declined over time, these declines have been much slower among Aboriginal people (First Nations and Inuit Health Committee, 2006). Within the context of Aboriginal maternal smokers, low socioeconomic status creates a situation where not only

are expectant mothers more likely to start smoking but are also less likely to have ready access to existing cessation interventions.

5.1.2 Lack of Culturally Appropriate Smoking Cessation Models

The importance of developing and implementing culturally appropriate smoking cessation models cannot be overstated. Mainstream smoking cessation programs that ignore how social context and culture impact the lives of pregnant Aboriginal women do not seem to have been effective when applied to Aboriginal communities (Ivers, 2004; Greaves et al., 2003; Varcoe et al., 2010). Part of the problem in developing culturally appropriate treatment models has been a difference in viewpoint of what constitutes health and disease (Loppie Reading & Wien, 2009; Kendall, 2009) and the traditional ceremonial role of tobacco in native culture (Reading, 1999; Health Canada, 2007).

5.1.2.1 Importance of Holistic Health and Wellbeing

The ways in which health problems are addressed should ideally reflect a population's definition and understanding of health. Health promotion challenges can arise when a particular group's view of health differs from the mainstream approach (Adelson, 2005; World Health Organization, 1986). Although First Nations, Inuit and Métis people have their own unique set of beliefs, values and cultural practices, on the whole, most Aboriginal people view 'health' as different from the mainstream definition (Kendall, 2001; Blueprint on Aboriginal Health a 10-year Transformative Plan, 2005; Loppie Reading & Wien, 2009). Health among Aboriginal people is not seen merely as the absence of disease or illness

but instead embraces a holistic approach of physical, emotional, mental and spiritual wellbeing of individuals and communities living in a balanced environment (Kendall, 2001; Blueprint on Aboriginal Health a 10-year Transformative Plan, 2005).

Several factors have been identified as protective to Aboriginal health including self-determination, traditional Aboriginal medicine, and Aboriginal ways of knowing health (Smylie & Anderson, 2006; Minore & Katt, 2007). Historically, the conventional western health care service delivered in Canada has not been able to fully address the health and wellbeing of Aboriginal people as many Aboriginal people face complex, deeply rooted cultural and societal barriers to health (Romanow, 2002; Adelson, 2005). Attempting to address Aboriginal health promotion issues such as maternal smoking cessation using the traditional biomedical model, that focuses on individual lifestyle choices rather than a holistic community based approach has led to the delivery of culturally inappropriate health promotion services for Aboriginal people (Baillie et al., 2008; Smylie & Anderson, 2006; Reading, 1999). In Canada, it is becoming more widely recognized that programs and interventions for the general public – such as maternal smoking cessation programs - might not be relevant or culturally appropriate for Aboriginal people (Loppie Reading & Wien, 2009; Birch et al., 2009; Kendall, 2009; Reading, 1999). While efforts have been made to deliver and implement tobacco control programs developed specifically for Aboriginal people, they are not widely available and to date have failed to adequately address Aboriginal smoking from a holistic perspective (Baillie et al., 2008;

Reading, 1999). For example, common cognitive behavioural smoking cessation interventions focus on smoking as an individual behaviour or lifestyle choice and neglect to address the influence of the person's environment on smoking behaviour (Baillie et al., 2008). There is a need for programs and interventions that are tailored to address maternal smoking among Aboriginal women within a culturally appropriate model that recognizes the importance of social and cultural context. This would include exploring a holistic view of tobacco use including the physical aspects (e.g. illness and disease), the cultural or spiritual aspects (e.g. the significance of traditional tobacco use), the mental aspects (e.g. the knowledge and understanding of the harmful effects of smoking), and the emotional aspects (including addiction to smoking and the use of smoking as a coping mechanism).

5.1.2.2 Aboriginal Culture and Tobacco

Culturally appropriate intervention models also need to take into account the importance of traditional tobacco use among some Aboriginal people. Tobacco has been used in traditional Aboriginal ceremonies and prayers for thousands of years and it plays an important cultural role for many Aboriginal people in Canada⁶ (Health Canada, 2007; National Native Addictions Partnership Foundation, 2006). Ceremonial tobacco use has profound spiritual meaning as it is considered a direct communication between the individual and the spiritual world (Reading, 1999). Traditional uses of tobacco include prayer, giving thanks to the creator and mother earth and cleansing the mind and body (Health

⁶ Inuit people did not traditionally use tobacco in their culture (Health Canada, 2007).

Canada, 2007; National Native Addictions Partnership Foundation, 2006; Reading, 1999). Traditional tobacco continues to be used in cultural ceremonies, however, some Aboriginal people may not have proper knowledge of the difference between traditional and commercial tobacco use and mistakenly believe that smoking commercial tobacco is a customary practice (Health Canada, 2007; Cancer Care Ontario, 2008; National Native Addictions Partnership Foundation, 2006). Elders have stated that the use of commercial tobacco – the recreational smoking that is frequently observed – is harmful and disrespectful to the traditional use of tobacco (Health Canada, 2007; Schwartz, 2010; National Native Addictions Partnership Foundation, 2006). Smoking cessation programs that portray all tobacco use in a negative light conflict with the Aboriginal cultural view that traditional tobacco is sacred. The consequence is that these programs risk being seen as culturally out of touch and become under utilized (Cancer Care Ontario, 2008; National Native Addictions Partnership Foundation, 2006).

5.1.3 Relative Importance of Smoking Cessation

Smoking cessation may also be viewed as a low priority for some pregnant Aboriginal women when compared to other health and social issues. Pregnant women face many new challenges and stresses and may find quitting smoking especially difficult (Ivers, 2004; Wood et al., 2008; Greaves et al., 2003; Centre for Excellence in Indigenous Tobacco Control (CEITC), 2010). Research has consistently found that the determinants of maternal smoking reflect those related to social disadvantage and when faced with more immediate concerns

during pregnancy such as financial security, food security or domestic abuse, people are likely to regard smoking cessation as a low priority (Greaves et al., 2003; CEITC, 2010; Wood et al., 2008). In addition, smokers in general often identify smoking as a means to cope with stress and view the harms of smoking as minimal compared to other health and social issues in their daily lives (Cancer Care Ontario, 2008; Wood et al., 2008; CEITC, 2010). Moreover, findings from research among Australian Indigenous women highlighted that the harmful effects of smoking during pregnancy were less visible compared to the harms of using alcohol and drugs and therefore smoking cessation was viewed as less of a priority (Ivers, 2004; CEITC, 2010).

This low priority afforded to smoking cessation during pregnancy could be yet another potential barrier to reducing smoking prevalence among Aboriginal mothers. Determining Aboriginal women's knowledge base of smoking during pregnancy and whether or not this population considers smoking an important issue that needs to be addressed is an important question requiring further exploration.

5.1.4 The Social Phenomenon of Smoking

Smoking behaviours are influenced by social and cultural norms; consequently, initiating and maintaining smoking cessation can be extremely challenging when smoking is viewed as a normal behaviour (Wood et al., 2008; Cancer Care Ontario, 2008). The high prevalence of smoking throughout both urban and rural Aboriginal communities has become a social norm, which

normalizes and ultimately reinforces smoking patterns and creates a barrier for smoking cessation (Reading, 1999; Baillie et al., 2008; Wood et al., 2008).

“Aboriginal females grow up in an environment where tobacco is woven into the fabric of their everyday lives. This extends far beyond the presence of the sacred aspects of non-commercial tobacco to include entire communities where the smoking of commercial tobacco for non-sacred reasons is, in perception and fact, the norm.” (Baillie et al., 2008, 88).

The easy access to and low cost of tobacco on reserves also influences and reinforces the high rates of smoking (Reading, 1999; Cancer Care Ontario, 2008). In some Aboriginal communities, tobacco is viewed as both a source of economic growth and an affordable source of pleasure (Varcoe et al., 2010). This acceptance of smoking as socially normal behaviour ultimately poses a significant barrier to successful smoking cessation interventions among pregnant Aboriginal women (Varcoe et al., 2010). This is a key difference from the social environment of the general population of Canadians in which tobacco is regarded negatively. De-normalizing smoking is a significant challenge that would require long-term community collaboration and commitment supporting multiple levels of Tobacco Control.

5.2 Gaps in Knowledge and Practice

In order to develop effective smoking cessation interventions that are able to successfully reduce the high prevalence of smoking among pregnant

Aboriginal women, there is a need for greater understanding of the influence Aboriginal women's socio-economic realities have on their smoking cessation and relapse patterns (Manfredi et al., 2007; Devries & Greaves, 2004). Although pregnancy is generally considered to be a "window of opportunity" - a time when women are more likely to make healthy choices and quit smoking for the benefit of fetal health - it is not clear if this is a concept that is even applicable to Aboriginal women who are pregnant due to the paucity of Aboriginocentric research (Greaves et al., 2003; CEITC, 2010). Traditionally, Aboriginal people believe that every child is a unique gift from the Creator; Aboriginal women were highly respected for their ability to share their gift from the Creator to be a life giver (Native Women's Association of Canada, 2010; Health Canada, 2005b). The health and wellbeing of pregnant Aboriginal women was honoured and respected and considered to be the responsibility of both the woman and the family (Native Women's Association of Canada, 2010; Health Canada, 2005b). Considering this, one could question whether this honour and respect for pregnant Aboriginal women has changed, or if this still holds true, why pregnant Aboriginal women are being exposed to cigarette smoke during pregnancy. In order to effectively address smoking cessation during pregnancy using culturally appropriate methods, there is a need to better understand Aboriginal women's knowledge and belief systems surrounding maternal smoking and the reasons why they do or do not quit.

5.2.1 Lack of Culturally Appropriate Research in Aboriginal Maternal Smoking

A consistent recommendation from the maternal smoking literature is the need to recognize different subgroups within a given population in order to tailor smoking cessation programs for those subpopulations deemed to be at higher risk of engaging in maternal smoking behaviour (e.g., Aboriginal women and women of low socio economic status) (Greaves et al. 2003, Devries & Greaves, 2004; Ivers, 2004). Simply applying interventions developed from research focused on non-Aboriginal women is problematic given the inherent differences between different groups of Aboriginal and non-Aboriginal women; certainly, it has been recognized that “the context for delivery of interventions for Indigenous people is likely to differ from that of the research from which the evidence base is drawn.” (Ivers, 2003, 397). There exists a need for more extensive research exploring the factors that prevent and enable smoking cessation among Aboriginal women in Canada since “despite the high rates of Aboriginal maternal smoking, there have been few studies exploring antenatal smoking among Aboriginal women” (Varcoe et al., 2010, 154). Knowledge of the strategies that Aboriginal women use to reduce and quit smoking during pregnancy would help inform community health initiatives for addressing maternal smoking.

Exploring leading community-based programs such as diabetes awareness and prevention could help to provide a way of understanding the challenges and successes of using cultural perspectives in addressing health promotion research and interventions in Aboriginal communities. Aboriginal people in Canada are three to five times more likely to develop Type 2 diabetes

mellitus than non-Aboriginal people and reducing this inequality is an important public health concern (Health Canada, 2010b). However, similar to many other health issues in Canada, Aboriginal communities have expressed concern that conventional biomedical approaches to the prevention and treatment of diabetes are not effective because they are not culturally appropriate, and fail to recognize Aboriginal ways of thinking, knowing, and doing, related to the determinants of diabetes (Giles et al., 2007). Extensive efforts are now being made to support Aboriginal communities in addressing diabetes from a holistic framework that recognizes local perspectives and local knowledge, supporting the development of culturally relevant ways to help to decrease Type 2 diabetes mellitus and promote overall health and wellbeing (Health Canada, 2010b; Bisset et al., 2004). One culturally relevant area of community focus has been improving access to healthy and traditional foods that can help to benefit the entire community's health in addition to helping to reduce to risks of Type 2 diabetes (Health Canada, 2010b). Sharing knowledge and lessons learned from successful, holistic and culturally appropriate community health approaches provides an opportunity for Aboriginal communities to learn what has worked in other health areas and use these lessons to help shape their own strategies from within a local needs perspective.

Additionally, smoking cessation research from Australia provides relevant data that could help to shape future research here in Canada. Wood and colleagues (2008) explored the contextual experiences of smoking, perceptions and attitudes regarding smoking during pregnancy, awareness and knowledge of

the risks relating to smoking during pregnancy, and barriers and potential mechanisms to support smoking cessation among pregnant Indigenous women in Australia. Many of the same areas of investigation used by these authors would be relevant to explore within the Canadian Aboriginal context.

Investigating these themes, and adapting them to be relevant to Canadian Aboriginal women could help to address the existing gaps in the knowledge framework surrounding pregnancy and smoking among Aboriginal women in Canada and help develop a better understanding of why the existing population based initiatives have failed to significantly decrease smoking rates during pregnancy.

A recent study by Varcoe and colleagues (2010) provides important insight into community-based strategies for addressing maternal smoking and environmental tobacco smoke exposure in First Nations communities. This ethnographic study in the Gitx̱san territory of northern rural British Columbia explored interpersonal and system influences on smoking practices and cigarette smoke exposure that place pregnant women and mothers and their children at risk. Several research questions were explored including: how does the social and physical context influence young pregnant and parenting Aboriginal women's tobacco use? What strategies do young Aboriginal women use to reduce tobacco use and to minimize second hand smoke exposure for themselves and their children? How can the research process and the findings inform the development of context-specific strategies and actions plans for tobacco reduction that address the needs of young pregnant and parenting Aboriginal

women? The study results support the concept that strategies for tobacco reduction must be understood within the historical and socio-cultural context of the specific community. The study participants proposed multiple strategies for involving community elders as a culturally appropriate means to address the community problem of smoking in a way that would be congruent with the community's own understanding and beliefs around maternal smoking behaviour and second hand smoke exposure for children (Varcoe et al., 2010). This study provides a concrete example of context-specific knowledge and strategies for addressing maternal smoking among women from the Gitx̓san First Nation. Although these findings cannot be generalized to address smoking among all Aboriginal women, they provide an example of a culturally appropriate smoking cessation strategy developed by one First Nation community that can be shared with other communities in order to promote the exchange of Aboriginal knowledge of smoking, and potentially guide further community based interventions.

Furthermore, Baillie and colleagues (2008) suggest that non-traditional tobacco control strategies are irrelevant for Aboriginal women because they have been developed using research on non-Aboriginal populations. They propose that the field of Aboriginal women's smoking cessation not only requires more extensive Aboriginocentric research, but also an increase in the presence of Aboriginal researchers, therefore building the capacity for Aboriginal women to participate in research. The authors question what value research answers have if the research questions themselves do not originate from within the Aboriginal

community being explored. Their suggestion is that research questions need to be developed and explored by Aboriginal women and Aboriginal communities themselves in order to ensure that the most culturally relevant and appropriate issues are being examined (Baillie et al., 2008). This is consistent with previous recommendations from Reading, who states that “it is critical that Aboriginal people design, develop, implement and evaluate their own tobacco prevention, cessation and protection initiatives.” (Reading, 1999, 117).

5.2.2 Lack of Evaluated Cessation Programs for Aboriginal Women

In order to improve current cessation interventions it is essential to have an understanding of what practices have been successful among pregnant Aboriginal women and why. The literature evaluating Aboriginal maternal smoking cessation interventions in Canada is scarce (Cancer Care Ontario, 2008; Varcoe et al., 2010). At the time of this report, no reviews were identified from Canada evaluating the effectiveness or cultural appropriateness of maternal smoking cessation interventions for Aboriginal women. This literature review identified several smoking cessation resources and program descriptions developed for Aboriginal women (Appendix 2, Appendix 3). However, it is unclear if more extensive program details are available, if the programs are currently in operation and whether or not any formal or informal evaluations have been completed. Moreover, while some community programs may be evaluated locally, the findings may not be widely available. This ultimately limits knowledge exchange with other outside communities or researchers who may want to address the dilemma of maternal smoking (Cancer Care Ontario, 2008).

A case study review prepared by the Aboriginal Cancer Care Unit in Ontario attempted to identify emerging practices that have the potential for being tailored to Aboriginal smoking cessation interventions within a culturally relevant context in Canadian Aboriginal communities (Cancer Care Ontario, 2008). The case study was based on a literature review and an environmental scan. Due to the scarcity of previously evaluated programs and interventions addressing smoking cessation among Aboriginal people, Cancer Care Ontario chose two existing smoking cessation program models based on three main criteria: minimization of barriers for implementation in Aboriginal communities, optimization of replication for the Aboriginal population and strength of evidence found within the literature to support case findings (Cancer Care Ontario, 2008). Sacred Smoke and Sema Kenjigewin Aboriginal Tobacco Misuse were the smoking cessation programs felt to best fit the selection criteria. Although neither program was designed specifically for Aboriginal women, both programs were deemed to be culturally appropriate practices that demonstrated promise for tailored replication in other Aboriginal communities. The author's evaluation identified several components as effective for Aboriginal smoking cessation programs: reflection of local community culture and language; inclusion of current, easy to understand, accurate, relevant information for both smokers and health care workers; incorporation of interactive learning tools; use of Aboriginal role models; engaging of families in prevention, protection, and cessation programming; harm reduction approaches and respect for program participant autonomy; capacity building at the community level; sustainability of program

investments over the long term and supports such as childcare, transportation, meals, and pharmacotherapies (Cancer Care Ontario, 2008). Challenges identified in the implementation of the evaluated programs include funding limitations; the need for Aboriginal workers skilled in facilitating successful programs; the implementation of the programs within organizations with the capacity and infrastructure; and the framing of the program in a positive way, which emphasizes harm reduction (Cancer Care Ontario, 2008).

Another important recommendation from the maternal smoking literature is the need to increase awareness of existing programs (Greaves et al., 2003; Cancer Care Ontario, 2008). Although this review identified only a few smoking cessation programs designed specifically for Aboriginal women, there are potentially many more resources and programs that were not identified due to limited resource sharing. Program evaluation results are a potential way to share details of current programs. This is bound to help improve the development of future programs as well as lead to improvements in current interventions.

5.3 Maternal Smoking Cessation Models

A best practices review of smoking cessation interventions prepared for Health Canada (Greaves et al., 2003) emphasized the scarcity of effective interventions for pregnant and post-partum women among a variety of specific groups of pregnant smokers, including Aboriginal women. Several academic reviews have found existing maternal smoking cessation interventions to be effective when used with non-Aboriginal populations (Lumley et al., 2009; Naughton et al., 2008). Conventional maternal smoking cessation interventions

and approaches often include cognitive behaviour therapy and motivational interviewing, offering incentives to the women, interventions based on Prochaska's stages of change, giving feedback to the mothers on fetal health status, nicotine replacement therapy or buprion, and other medications (Lumley et al., 2009; Naughton et al., 2008; Greaves et al., 2003). A Cochrane Review examined the impact of maternal smoking cessation interventions on smoking behaviour and perinatal health outcomes and found a significant reduction in smoking in late pregnancy following the use of existing interventions (risk ratio 0.94, 95% confidence interval (CI) 0.93-0.96). In addition, the interventions also decreased the risk of low birthweight (RR 0.83, 95% CI 0.73-0.95) and preterm birth (RR 0.86, 95% CI 0.74-0.98) and were associated with a 53.91 gram increase in mean birthweight (Lumley et al., 2009). The review found that the most effective maternal smoking interventions were those that provided incentives for quitting. These were associated with maternal quit rates of approximately 24%. The review recommended that smoking cessation interventions in pregnancy need to be consistently implemented in all maternity care settings (Lumley et al., 2009). Based on these findings, smoking cessation information should be provided by all health workers who interact with pregnant women such as community health representatives, nurses, physicians, as well as less obvious workers who engage with pregnant women such as those from community programs, and Native Friendship centres. In addition, it was recommended that since many pregnant women addicted to tobacco have difficulties quitting during pregnancy, population-based measures that reduce

smoking and social inequalities should also be supported (Lumley et al., 2009). As previously discussed, individual interventions that neglect to address the socio-cultural context of Aboriginal women are not likely to be effective in reducing maternal smoking in this population.

Maternal smoking cessation interventions are often delivered briefly in a health care type setting (Lumley et al., 2009; American College of Obstetricians and Gynecologists, 2002). Pregnancy has been considered an opportune time for pregnant women to quit smoking because they have more frequent health care visits and are often more motivated to make healthy changes in their lives in order to have a healthy infant, particularly during their first pregnancy (Greaves et al., 2003). However, Aboriginal women in Canada may not have the opportunity to engage in these interventions as they are less likely to receive appropriate prenatal care and are often more likely to receive prenatal care later in their pregnancy than non-Aboriginal women (Heaman et al., 2005; British Columbia's Aboriginal Maternal Health Project, 2006). Research has found that "women who experience multiple social disadvantages are more likely to smoke in pregnancy and the least likely to respond to cessation interventions" (Wood et al., 2008, 2379), suggesting that the women who are most likely to need the support are less likely to receive it. Furthermore, Kennison (2009) found that pressure from outside sources including healthcare workers could actually reduce the likelihood of smoking cessation as the stigma associated with smoking during pregnancy may lead women to conceal their habit when cessation attempts are unsuccessful. This finding may be pertinent for Aboriginal women who already

report facing barriers to accessing prenatal health care including stigma, discrimination and lack of cultural understanding (British Columbia's Aboriginal Maternal Health Project, 2006).

Recommendations from Greaves and colleagues (2003) and Devries and Greaves (2004), propose that better practices for addressing maternal smoking should focus on the following six approaches to maternal smoking cessation:

1. Increase tailoring - create programs that address the needs of different subpopulations of pregnant smokers such as Aboriginal women and women of low socio-economic status.
2. Incorporate a women-centred approach - increase internal motivation for cessation by focusing on women's health. Interventions that focus solely on the health benefits to the fetus have high rates of postpartum relapse.
3. Consider social context - assist women in dealing with the negative social stigma surrounding smoking in pregnancy as well as the social context and determinants that influence their smoking patterns.
4. Focus on relapse prevention - provide women with follow-up and support into the postpartum period when the chances for relapse appear to be greatest as fetal health is no longer a motivation for cessation.
5. Incorporate harm reduction - encourage women who cannot quit to reduce their smoking. Nicotine replacements may be helpful in promoting harm reduction.

6. Incorporate social support – address smoking norms in the woman’s immediate social environment (home, friends, community) and incorporate the woman’s social network in the interventions (Devries & Greaves, 2004; Greaves et al., 2003).

Additionally, improved health education has often been recommended for promoting health and has proven to be an effective strategy for reducing other adverse health outcomes – such as the “back to sleep campaign” that helped decrease infant mortality in North America by providing safe sleep education and recommendations for infants (Public Health Agency of Canada, 2010). Ensuring that women are provided with information that is accurate and up to date on the harmful effects that smoking has on both the fetus and the mother, using a maternal-fetal health focus rather than just a fetal-health focus may help women to understand the real risks of smoking and the immediate benefits to be gained from reducing or quitting smoking altogether (Greaves et al., 2003).

These broad approaches address important determinants and barriers to smoking cessation and appear to be relevant to all groups of pregnant women and would likely be appropriate for incorporating within culturally appropriate smoking cessation programs designed specifically for Aboriginal women who are pregnant.

Although it is unclear how relevant Indigenous research from Australia is in Canada, there has been considerably more research in the field of Indigenous maternal smoking in Australia and it was worth exploring due to the lack of Canadian literature (Cancer Care Ontario, 2008). Many of the best practices

identified in the Australian literature were found to be consistent with the better approaches and emerging practices identified in the Canadian research literature. Best approaches for addressing Indigenous maternal smoking cessation in the Australian literature included: increasing the relative importance of smoking as an issue, utilising social networks to support smokers to quit, using pregnancy as a motivator to quit, addressing the younger age of smoking initiation, increasing one's ability to cope with stressors, increasing the number of quit attempts per person, reducing rates of cannabis and alcohol use, increasing workforce knowledge, and increasing and improving the infrastructure of relevant programs to help people quit (CEITC, 2010; Wood et al., 2008; Ivers, 2004; Ivers, 2003). Several of these best approaches are consistent with best approaches described within the Canadian literature and may prove to be relevant for pregnant Aboriginal women in Canada.

6: DISCUSSION

6.1 Recommendations

6.1.1 Addressing the Gaps in Knowledge

The lack of research exploring the maternal smoking cessation experiences among Aboriginal women in Canada poses a barrier to decreasing the prevalence rates of smoking during pregnancy. The availability of literature exploring Aboriginal women's experiences during pregnancy and their knowledge and beliefs around maternal smoking is crucial if the inequity of high rates of maternal smoking among Aboriginal women is to be addressed (Baillie et al., 2008; Varcoe et al., 2010). Existing research related to maternal smoking among Aboriginal women tends to consist of a few small-scale studies that examine the prevalence of smoking behaviour among Aboriginal women in comparison to non-Aboriginal women (Heaman & Chalmers, 2005). Current findings have not addressed what factors influence pregnant Aboriginal women's smoking cessation, or what is the best way to assist pregnant Aboriginal women in their quit attempts? A better understanding of the factors that influence Aboriginal women to quit smoking when they become pregnant is an area that warrants further investigation – specifically how they are quitting and what factors contribute their quitting and continuing to abstain following pregnancy?

Moreover, the social determinants specific to Aboriginal women's smoking behaviour and how these factors influence smoking cessation during pregnancy

need to be explored. Aboriginal communities that have identified maternal smoking as a priority concern should be supported through increased funding commitments in the area of Aboriginal tobacco cessation research, resource availability for program development and a commitment from health authorities and the academic research community in order to develop their own research protocols and build the community capacity necessary for addressing this population health concern (Baillie et al., 2008; Cancer Care Ontario, 2008).

Harm reduction methods – such as decreasing smoking frequency during pregnancy - have been previously proposed as a realistic option for pregnant women who feel that they are unable to completely quit smoking during pregnancy (Greaves et al., 2003; Devries & Greaves, 2004; CEITC, 2010). This recommendation seems especially relevant for Aboriginal women given their high prevalence of maternal smoking. Although it is unclear if harm reduction protocols ultimately can contribute to complete cessation of an individual's smoking behavior, a simple reduction in the amount of smoke exposure during pregnancy could have health benefits to the mother and child (Greaves et al., 2003). Until future research elucidates the fundamental socioeconomic and cultural factors necessary for producing relevant and effective Aboriginocentric smoking cessation interventions for Aboriginal women, harm reduction methods should likely be encouraged as a means of taking a first step towards improving the health of the mother and fetus.

A second area that must be addressed in order to improve the success rates of smoking cessation strategies is the current deficiency of published

systematic program evaluations. Although several smoking cessation programs for Aboriginal women were identified in this report, there is a dearth of evaluated programs that have been developed specifically for pregnant Aboriginal women or even for Aboriginal smokers in general (Wardman et al., 2007; Hayward et al., 2007; Cancer Care Ontario, 2008). Evaluating current smoking cessation interventions for Aboriginal women and incorporating evaluation into the planning and implementation process of new programs would not only allow for improved outcome evaluations but would help to provide more baseline data on Aboriginal smoking, cessation attempts and relapse rates. Targeted interventions that address both the social reality and cultural context of Aboriginal women appear to be important approaches for addressing maternal smoking cessation (Varcoe et al., 2010; Baillie et al., 2008). Based on emerging practices from Canadian maternal smoking interventions and Aboriginal smoking cessation programs developed in Canada and Australia, community programs that address maternal smoking as a community health issue rather than an exclusively maternal or fetal issue may be more effective and successful (CEITC, 2010; Cancer Care Ontario, 2008). There is a significant need to carry out and publish reports on well-designed community-based maternal smoking prevention research and interventions in order to share knowledge about the process, results, and lessons learned from such strategies. This would also provide the opportunity to share stories of health promotion initiatives that have been successful within Aboriginal communities and help facilitate awareness of Aboriginal communities capacity to promote health.

Systematic evaluations of existing programs would facilitate the comparison of success and relapse rates for different interventions (Reading, 1999). Given that each program is likely to have different goals and objectives, qualitative evaluations that seek to explore the successes, challenges and lessons learned from Aboriginal maternal smoking interventions would likely be a beneficial addition to the current literature base by providing context specific information for communities wanting to implement their own maternal smoking cessation interventions. Since inadequate resources (e.g., financial or staff shortages) are often significant barriers to organizations attempting to perform some form of program evaluation, providing the necessary tools to support and facilitate intervention evaluation and assist with the process and outcome reports (e.g., staff training, temporary human resources) could allow for more systematic evaluations to be completed and available for analysis (Cancer Care Ontario, 2008).

Increasing the awareness of current interventions and maternal smoking cessation resources has previously been proposed as a priority strategy given that individuals and communities cannot benefit from smoking cessation interventions if the resources that exist are unknown to them (Devries & Greaves, 2004). Improved awareness and knowledge sharing of program details, processes, and evaluation outcomes could be facilitated through the better use of existing networks involved in Aboriginal tobacco cessation networks such as National Native Addictions Partnership Foundation, Tobbacowise.ca, Inuit tobacco-free network, National Indian and Inuit Community Health

Representatives Organization, and the National Aboriginal Health Organization, in addition to women's health networks such as the Native Women's Association of Canada.

6.1.2 Addressing the Challenges of Smoking Cessation

Smoking cessation programs have been proven to be marginally effective among pregnant women (Lumley et al., 2009), however, like many health promotion interventions, incorporating multiple approaches to decreasing a desired behaviour is likely to be more effective in achieving long term changes (World Health Organization, 1986). Although this paper focuses on the complexities of quitting smoking during pregnancy, it has previously been suggested that there should be an increased focus on smoking prevention and developing a better understanding of the factors influencing smoking initiation among young Aboriginal women (Valentine, Dewar & Wardman, 2009). This approach could play an important role in smoking prevention and cessation interventions and facilitate a reduction in smoking prevalence among Aboriginal women (Valentine, Dewar & Wardman, 2009). Maternal smoking cessation interventions developed by Aboriginal communities are more likely to be effective when combined with healthy public policies that limit both access and exposure to tobacco products. Furthermore, the social context in which maternal smoking takes place must be addressed if rates of smoking – specifically maternal smoking - are to decrease among Aboriginal people in Canada. Despite the significant challenges previously described in this paper, attempting to de-normalize smoking among Aboriginal communities could help promote smoking

cessation among pregnant Aboriginal women and help to facilitate overall community health. Ultimately the path towards reducing the socioeconomic and health inequities that influence Aboriginal maternal smoking rates requires policy development that acknowledges the association between these inequities and disease (Adelson, 2005). Optimizing the health of an individual and his or her developmental life trajectory will come from addressing health within a holistic policy and planning framework (Loppie Reading & Wien, 2009; Assembly of First Nations, 2006). Community based programs that engage all group members in addressing the issue of maternal smoking will lead to increased community capacity, empowerment and improved community health and well-being.

Smoking cessation programs tend to focus predominantly on the physical aspects of smoking – the harmful health effects on the mother and infant. A holistic approach to smoking cessation would incorporate the current knowledge of the physical aspects of smoking and the physical withdrawal of smoking cessation with the emotional, mental and spiritual aspects of smoking and smoking cessation. Addressing the emotional aspects could be approached through promoting mindfulness and self-awareness of the emotions that are experienced when trying to quit smoking and the use of smoking as a coping strategy (Cancer Care Ontario, 2008). Holistic interventions could also explore the mental aspects by supporting women’s ability to learn healthy copings skills and strategies for addressing emotion regulation, instilling self-efficacy, self-respect and responsibility for their own health and the health of their infant (Cancer Care Ontario, 2008). The mental aspect could be further explored by

providing an environment that encourages peer support and group counselling. This relates to the spiritual aspects in which women could be supported along with family and friends in learning or re-learning the significance of traditional teachings related to maternal health and wellbeing from elders, as well as the sacred aspects of tobacco for some Aboriginal groups (Cancer Care Ontario, 2008). Wabano Centre for Aboriginal Health offers a sweat lodge ceremony by a traditional healer prior to starting the smoking cessation program, and following completion of the program (Cancer Care Ontario, 2008). This type of holistic approach to smoking cessation would likely be most effective if presented within a holistic maternal health program that explores smoking as one of many pertinent issues to be addressed in promoting Aboriginal maternal health and well-being.

Additional Aboriginal health promotion programs such as HIV prevention and diabetes prevention and management interventions provide important examples of successful approaches to holistic Aboriginal health promotion (Kendall, 2009). The Wellness Shield, an Aboriginal focused diabetes team named after the holistic aspects of physical, mental, emotional and spiritual health approaches diabetes management with a holistic 'shield' of protection. In acknowledging the role that all four aspects hold in health promotion they address the significant role that mental health – particularly depression and post-traumatic stress - can have in diabetes and in overall health and well being. A psychologist was consequently added to the team of diabetes educator and dietitian in order to engage with clients to promote their mental health in culturally

appropriate ways (Kendall, 2009). These examples of holistic Aboriginal health programs provide important knowledge for shaping new holistic approaches in many other areas of health promotion.

While there are currently many comprehensive health programs being designed and implemented by Aboriginal peoples, the eventual success of these initiatives can be hindered by inadequate and restricted funding (Adelson, 2005). Increasing collaboration and commitment from Aboriginal, provincial and federal governments could lead to long-term agreements and action plans tailored to the local Aboriginal communities' needs (Reading, 2009). In addition, government policies that promote the fair distribution of income, reduction of social stratification and the removal of social and cultural barriers to the social determinants of health (e.g., health care, education and income) would support and enable healthier lives for Aboriginal communities in Canada (Assembly of First Nations, 2007). Effective smoking cessation interventions cannot be maintained if the underlying social determinants that influence maternal smoking behaviour are not adequately addressed.

Reading (1999) has previously suggested that the traditional historical and cultural aspects of Aboriginal tobacco use should be included as a key consideration in smoking cessation programs and may prove to be significant in reducing current tobacco misuse. Although it is important to consider that traditional and cultural tobacco use is unique for different Aboriginal peoples (Health Canada, 2007), this recommendation remains relevant in the context of

Aboriginal women who smoke during pregnancy and should be continue to be addressed within the context of cultural norms and their influence on health.

7: CONCLUSION

The high prevalence of smoking among pregnant Aboriginal women continues to be a significant public health concern that requires revitalized public health efforts if the high prevalence rate is to be reduced in Canada (Varcoe et al., 2010; Baillie et al., 2008; Heaman & Chalmers, 2005). There are many challenges in successfully addressing smoking cessation, particularly among Aboriginal communities who face additional cultural and socio-economic challenges in addressing smoking cessation (Appendix 4). Ultimately, Aboriginal communities must develop their own meaningful strategies and programs that reflect community needs and priorities (Baillie et al., 2008; Reading, 1999). Much knowledge can be gained from the challenges and successes of existing intervention strategies experienced by other communities addressing maternal smoking and can help to provide a starting point for moving forward. Several key themes appear throughout both the Canadian and Australian Aboriginal smoking cessation literature: the importance of social context, community-based programs, culturally appropriate content that reflects a holistic physical, spiritual emotional and mental view of health, involvement of social network, the importance of decreasing barriers to access and the lack of research and evaluation of tobacco interventions for Aboriginal people – particularly pregnant Aboriginal women (Greaves et al., 2003, CEITC, 2010; Devries & Greaves, 2004). Future interventions designed to reduce Aboriginal maternal smoking will

require further Aboriginal research, in conjunction with the application of relevant recommendations previously proposed in the maternal smoking cessation literature. Building capacity in Aboriginal research and community programs can be facilitated through learning from the existing successful Aboriginal health promotion and prevention programs (e.g. diabetes initiative) within Canada that have been controlled and developed by Aboriginal communities. While there is still much progress to be made in addressing the gaps in maternal smoking research, much knowledge can be gained through better collaboration and sharing of existing successful health promotion initiatives within First Nation, Inuit and Métis communities.

8: CRITICAL REFLECTION

I first thought of the high prevalence of Aboriginal maternal smoking as a capstone topic while I was working on an Aboriginal health related research project. Several Aboriginal communities connected to the project had been found to experience very high rates of smoking during pregnancy. Initially, I sought to explore the effectiveness of current cessation interventions that focused on Aboriginal maternal smoking and identify 'emerging' or 'promising' holistic practices for effectively addressing the high prevalence of smoking within this population. An initial literature review revealed a lack of evidence that would be necessary in order to identify effective practices for addressing Aboriginal maternal smoking cessation. Consequently, I developed an interest in the lack of research exploring Aboriginal maternal smoking and began to examine the situation with a critical view of making recommendations for how to move forward in effectively addressing Aboriginal maternal smoking. Successful interventions for addressing health promotion generally require a thorough understanding of the health issue; yet maternal smoking among Aboriginal women appears to be poorly researched in Canada. Identifying the current gaps in knowledge and existing challenges in addressing the high prevalence of Aboriginal maternal smoking seemed to be an essential component in developing a better understanding of the influences and barriers to reducing the high prevalence of Aboriginal women who smoke during pregnancy. Reducing the inequality

between Aboriginal and non-Aboriginal smoking rates during pregnancy will require commitment and collaboration from Aboriginal communities and the research community, in addition to funding organizations and policy makers. I am hopeful that this paper may help provide insight into some of the next steps to be taken in order to bridge the knowledge gap between what is known and what still remains to be understood in order to effectively reduce the prevalence of Aboriginal women who smoke during pregnancy.

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APPENDICES

	<p>addressing the tobacco control needs of Aboriginal girls and women. Needs were defined and directed but not researched by the community. Workshops involved approximately 80 participants. Three main themes included: the dangers of active and passive smoking during pregnancy, the role and influence of family, and community and designing and implementing tobacco control strategies within the community.</p>	<p>There is a need for more research and more collaboration among Aboriginal women and tobacco control initiatives.</p> <p>It is important that research questions are shaped and controlled by Aboriginal community members.</p> <p>It is important for health promotion programs to focus on community strengths rather than deficits.</p>	
Themes	Study / Purpose	Findings / Relevant Recommendations	Reference
<p>Aboriginal health, maternal smoking, secondhand tobacco smoke</p>	<p>Authors used an ethnographic participatory paradigm to explore interpersonal and system influences on smoking practices and exposure to second hand smoke that increases the health risks for pregnant and parenting women and their children.</p>	<p>Possibilities for tobacco reduction must be understood within the historical and socio-cultural context of tobacco use in rural First Nations communities.</p> <p>It is important to use context-specific strategies in</p>	<p>Varcoe, C., Botorff, J., Carey, J. & Sullivan, D., (2010). Wisdom and influence of Elders: Possibilities for health promotion and decreasing tobacco exposure in First Nations communities. <i>Canadian Journal of</i></p>

	Data was collected through individual interviews and focus groups with 66 participants.	addressing smoking within a community, such as engaging Elders. Study participants described stories of Elders having an important role in local smoking cessation initiatives and providing inspiration and positive role modelling for community members.	<i>Public Health, 101 (2), 154-158.</i>
Themes	Study / Purpose	Findings / Relevant Recommendations	Reference
Aboriginal maternal health, risk factors and birth outcomes	Prospective study of 1811 pregnant women (25 Métis and 45 First Nations women).	The authors found a higher prevalence of smoking, poor nutrition, low income, and a previous premature infant among Aboriginal compared to non-Aboriginal women. Birth outcomes were different for Métis and First Nations women. Smoking rates were similar for First Nations and Métis women (44% and 36% respectively), and were significantly higher than the smoking prevalence for non-	Wenman, W., Joffres, M., Tataryn, I., & the Edmonton Perinatal Infections Group. (2004). A prospective cohort study of pregnancy risk factors and birth outcomes in Aboriginal women. <i>Canadian Medical Association Journal, 171(6), 585-589.</i>

Themes	Study / Purpose	Findings / Relevant Recommendations	Reference
<p>Aboriginal and Inuit maternal health, smoking prevalence as a risk for adverse pregnancy outcomes</p>	<p>Maternal-newborn charts of 918 infants born to at least one Inuit parent were reviewed and smoking data as reported by the mother at the first prenatal visit was extracted from the chart. Births outcomes were analyzed according to category of reported number of cigarettes.</p>	<p>80% of mothers included in the study reported smoking during pregnancy.</p> <p>Women who reported smoking 10 cigarettes or more per day had significantly increased risk of preterm birth, low birthweight and small for gestational age infants.</p> <p>The authors report that the high prevalence of maternal smoking in Nunavut is not unexpected given that the risk factors for maternal smoking (low education level, low income and young maternal age) are all prevalent within Nunavut.</p> <p>The authors propose focusing on this high risk group as a priority by using targeted-risk reduction</p>	<p>Mehaffey, K., Higginson, A., Cowan, J., Osborne, GM., & Arbour, LT. (2010). Maternal smoking at first prenatal visit as a marker of risk for adverse pregnancy outcomes in the Qikiqtaaluk (Baffin) region. <i>Rural and Remote Health</i>, 10: 1484.</p>

		strategies and raising the awareness of the importance reducing adverse birth outcomes.	
Themes	Study / Purpose	Findings / Relevant Recommendations	Reference
Smoking during pregnancy, correlates of smoking among Aboriginal and non-Aboriginal women	<p>This study involved the secondary analysis of data collected from interviews with 684 postpartum women (258 Aboriginal women), in order to compare risk factors for spontaneous preterm birth.</p> <p>Descriptive statistics were used to describe, summarize and compare smoking prevalence and correlates of smoking before and during pregnancy between Aboriginal and non-Aboriginal.</p>	<p>A significantly higher proportion of Aboriginal women smoked during pregnancy compared to non-Aboriginal women (61.2% compared to 26.2%)</p> <p>No correlates of smoking were found to be specific among Aboriginal women.</p> <p>Significant correlates of smoking during pregnancy included: inadequate prenatal care, low support from others, single marital status, illicit drug use, Aboriginal ethnicity and non-completion of high school among non-Aboriginal women.</p> <p>The only characteristics</p>	<p>Heaman, M., & Chalmers, K. (2005). Prevalence and correlates of smoking during pregnancy: A comparison of Aboriginal and non-Aboriginal women in Manitoba. <i>Birth</i>, 32(4), 299-304.</p>

		<p>significantly associated with smoking during pregnancy for Aboriginal women were illicit drug use during pregnancy and noncompletion of highschool.</p> <p>Efforts are needed to work with Aboriginal communities to develop both smoking prevention interventions and culturally appropriate smoking cessation interventions.</p>	
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Appendix 2: Canadian Smoking Cessation Resources for Pregnant Aboriginal Women

Program	Source	Target Population	Intervention Components	Reference
Holding Our Own	Walpole Island Health Unit	Pregnant Aboriginal women/ Women of colour smokers	Tailored information (video); encourages use of peer support	(Devries & Greaves, 2004)
Smoke Free Journey	Northern Family Health	Pregnant Aboriginal women smokers; pregnant smokers	Smoking cessation information; counselling	(Devries & Greaves, 2004)
The Best for Baby and You	National Indian and Inuit Community Health Representatives Organization (NIICHRO) – Cable Regina	Aboriginal peoples, teenagers, and pregnant women	Cessation video targeting Aboriginal peoples, teens and pregnant women	(NIICHRO website http://www.niichro.com/2004/)
Born Smoke Free	Nunatsiavut Health and social Development, Newfoundland, First Nations and Inuit Tobacco Control Strategy group	Inuit individuals and groups, expectant mothers	Powerpoint presentations, take home package for moms, pamphlets, signage	(NIICHRO website http://www.niichro.com/2004/)

Appendix 3: Canadian Smoking Cessation Resources for Aboriginal Women and Men

Program	Source	Target Population	Intervention Components	Reference
Sacred Plant, Sacred Ways	National Association of Friendship Centres	Urban Aboriginal men and women	Culturally appropriate tobacco prevention, cessation and protection program. Focuses on the wisdom and knowledge of elders and the importance of returning to the traditional uses of traditional tobacco use.	(Reading, 1999)
Kichi Chistemaw Pimatisiwin	Native Women's Transition Centre, Winnipeg	Aboriginal women	Smoking reduction program facilitators' guide - contains all the tools needed to create the thirteen-week program. Includes traditional teachings about the use of tobacco. Power, control and aboriginal experiences are highlighted.	(Greaves et al., 2003)
Protecting Our Families	National Indian and Inuit Community Health Representatives Organization	Aboriginal families	-	(Greaves et al., 2003; NIICHO website http://www.niichro.com/2004/)

Helping You Quit: A Smoking Cessation Guide for Aboriginal Women in Canada	Native Women's Association of Canada	Aboriginal women	-	(Greaves et al., 2003)
NASAWIN	NIICHRO	Aboriginal men and women	Prevention and cessation. Smoking education program kit: 5 posters, pamphlets, 10 section program manual, 15 minute video featuring personal experiences from First Nations people	(NIICHRO website http://www.niichro.com/2004/)
Taking the Lead for Change: empowering Aboriginal communities to control Tobacco	NIICHRO	Aboriginal communities	Prevention, cessation, protection. Flip chart with illustrations depicting the negative consequences of tobacco misuse in Aboriginal communities, traditional uses of tobacco, positive aspects of being tobacco free.	(NIICHRO website http://www.niichro.com/2004/)
Integrated Tobacco Recovery for Urban Aboriginals Adults and Adolescents: a	Nechi Institute	Aboriginal adults and adolescents	Cessation Self-help manual	(NIICHRO website http://www.niichro.com/2004/)

culturally appropriate self-help guide to smoking cessation				
Keeping the Sacred in Tobacco	National Native Partnership Foundation	Aboriginal communities	Tobacco cessation toolkit with materials for training addictions workers to address tobacco addiction of their clients, communities, families, and Nations. Includes: plans for sessions of between 30 and 90 minutes in duration, background notes for each session, handouts. The toolkit is flexible and can be modified to the background knowledge of participants. Designed to be culturally appropriate for First Nations communities	(National Native Addictions Partnership Foundation, 2006)
Sacred Smoke	Wabano Centre for Aboriginal Health Ottawa	Aboriginal men and women	Group education and counselling, 2 hours per week for 8 weeks. Focused on knowledge, skills and peer support to promote smoking cessation. Based on Aboriginal teachings and the 'Seven Grandfather Teachings': bravery, honesty, respect, humility, love, wisdom and truth.	(Cancer Care Ontario, 2008)

Sema Kenjigewin Aboriginal Tobacco Misuse	Anishnawbe Mushkiki Aboriginal Community Health Centre in Thunder Bay	Aboriginal men and women	Facilitated group counselling program, 2 hours per week for 12 weeks. Implemented as part of the HEAL (Healthy Eating Active Living) program. Focused on the medicine wheel and a holistic approach promoting self-efficacy and autonomy.	(Cancer Care Ontario, 2008)
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Appendix 4: Framework for Addressing Aboriginal Maternal Smoking Cessation

