

Factors Associated with Prenatal Care Use Among Inner-City Adolescents in Winnipeg:

A Mixed Methods Study

BY

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Abstract

Adolescent pregnancy is an important public health issue. The purpose of this mixed-methods study was to examine factors related to inadequate use of prenatal care (PNC) among adolescents living in inner-city Winnipeg. The quantitative component consisted of a secondary analysis of data from 92 adolescents (<20 years of age) who participated in a larger case-control study. Adolescents who were of First Nations ethnicity, single, multiparous, and who had low interpersonal support were more likely to receive inadequate PNC. Barriers, facilitators and motivators to PNC utilization were also identified. The qualitative component consisted of open-ended interviews with ten inner-city pregnant adolescents to examine how social support affected their use of PNC. Results showed that material, emotional and informational support were important factors affecting use of PNC. The most important source of material and emotional support was the adolescent's mother, and the main source of informational support was the PNC provider.

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Chapter 1: Statement of the Problem

Teen pregnancy is an important public health issue, due to its relationship with negative maternal and infant health outcomes (Public Health Agency of Canada [PHAC], 2008). The rates of teenage pregnancy have decreased since the 1990's in both the United States and Canada (Ventura, Mathews & Hamilton, 2001; Rotermann, 2007; PHAC 2008). The overall Canadian teen birth rates for 18-19, 15-17 and 10-14 year olds has declined from 42.9, 13.8 and 0.29/1000 females respectively in 1995, to 26.6, 7.7 and 0.14/1000 females respectively in 2004 (PHAC, 2008). A report by the Children in North America Team (2007) stated that Manitoba's teen birth rates were not declining at the same rate as the rest of the provinces. Rotermann (2007) found that, during the period from 1993 to 2003, almost 25,000 Canadian teenagers gave birth to their second or subsequent child. The national rate was 2.6/1000, while Manitoba was three times this at 6.8/1000 (Rotermann, 2007).

Looking at Winnipeg specifically, the teen birth rate (for ages <20 years) was 24/1000 in the period from 2000/01-2005/06 (Brownell, De Coster, Penfold, Derksen, Au et al., 2008). This was lower than the provincial rate, however specific neighbourhoods in Winnipeg had higher rates than others. During the 2000/01-2004/05 time period, the teen birth rate in Inkster neighbourhood was closer to the provincial rate (30.4/1000), while Downtown (58.1/1000) and Point Douglas (79.1/1000) were higher than the provincial rate (Brownell et al., 2008). The above mentioned neighbourhoods are all in inner-city Winnipeg. Inner-city Winnipeg's total number of live births to women under 20 years of age in 2007/08 was 289 (Manitoba Health, 2009a). Winnipeg's total for that year was 488, showing the inner-city area made up about 3/5 of the city total (Manitoba Health,

2009b). For a complete breakdown of the inner-city neighbourhoods refer to Appendix A. The highest live birth rates in the 2008/09 time period in Winnipeg among teens aged 15-19 years were in the Point Douglas (97.6/1000), Downtown (89.9/1000) and Inkster (68.4/1000) areas (Manitoba Health, 2010). See Appendix B. This increased in Point Douglas (105.8/1000), and decreased slightly in Downtown (75.6/1000) and Inkster (57.7/1000) in the 2009/10 time period (Manitoba Health, 2011. See Appendix C.

Teenagers are more likely than adult women to develop complications during pregnancy, such as iron deficiency anemia, pregnancy-induced hypertension, eclampsia, renal disease, depressive disorders and even death (Anderson, 2002). Pregnant adolescents are also at higher risk for perinatal health problems such as preterm birth (Du Plessis, Bell, Richards, 1997; Institute of Health Economics, 2007; Partington, Steber, Blair & Cisler, 2009) and low birth weight (Elfenbein & Felice, 2003). “Babies born prematurely often have many health problems, some of which persist into adult life. Preterm birth (gestational age <37 weeks) has been identified as one of the most important perinatal health problems in industrialized nations and is an important determinant of neonatal and infant morbidity, including neurodevelopmental handicaps, chronic respiratory problems, infections and ophthalmologic problems” (Berkowitz & Papiernik, 1993, pp.414). In 2005, Alberta estimated direct medical costs of singleton preterm births to be \$20 million per year for initial hospital admission (Institute of Health Economics, 2007).

The Canadian Maternity Experiences Survey (PHAC, 2009) was a national study that asked over 6000 women questions regarding their maternity experience. Women in the 15-19 year old age group reported higher rates of smoking and street drug use before

and during pregnancy, compared to older age groups. They also reported higher rates of physical abuse, stressful life events during pregnancy, post partum depression, and single marital status. The younger women had higher reported dissatisfaction with the information received on maternal issues, and were more likely to be unaware of folic acid benefits and to miss their intake of daily prenatal vitamins. The prevalence of unemployment and low income were also higher compared to older age groups of women in the study. The survey also found that these younger women were less likely to initiate breast feeding, be breastfeeding at 3 months, report placing their baby on their backs to sleep, and report their infant was in 'excellent health' compared to older women.

A case control study conducted in the UK involving very young pregnant adolescents (≤ 15 years old) found they were more likely to come from single-parent homes, were twice as likely to have experienced childhood sexual or physical abuse, and attended on average 4 less prenatal visits than older teenagers (Papamichael, Pillai & Yoong, 2009).

Negative psychosocial outcomes due to teen pregnancy are: school interruption, constant poverty, limited employment opportunities, low involvement with the child's father, repeat pregnancy and divorce (Klien, 2005). Children of adolescent parents have higher risk of developmental delay, difficulty in school, behavioural disorders, substance abuse, early sexual initiation, depression (Furstenberg, 1987; & Nord, Moore, Morrison, Brown, Myers, 1992) and becoming a teen parent themselves (Elfenbeing & Felice, 2003). One of the biggest challenges faced by the teenage mother is finding time for both education and parental duties (Mounder & Maracle, 2005). As a result, teenage mothers are not likely to finish high school, leading to raising a baby in poverty. Those at higher

risk of child poverty in Manitoba are Aboriginal, with almost half of off-reserve Aboriginal children living in poverty (Mounder & Maracle, 2005). While the authors did not report that these children were born specifically to teenage mothers, it shows the increased risk of growing in poverty if one was Aboriginal.

Adolescents living in the inner city face additional challenges. Compared to the rest of the city, inner-city Winnipeg has double the city's rate of unemployment, a high proportion (42%) without a high school diploma, and the highest concentration of Aboriginal and immigrant population (West Central Health Assessment Project (WCHAP), 2006). Inner-city Winnipeg also has the highest rate of low income, high rates of transient people, and the highest concentration of single parents, with 86.5% of those families being headed by women (Winnipeg Regional Health Authority (WRHA), 2004). High levels of unemployment, low levels of education and other socio-economic problems are factors related to high rates of teen pregnancy; while teen pregnancy brings about many of the same socio-economic problems (Mounder & Maracle, 2005).

Pregnant adolescents often have inadequate use of prenatal care (Haeri, Guichard, Saddlemire, 2009; East & Felice, 1996; PHAC, 2009; Wiemann, Berenson, Garcia-del Pino & McCombs, 1997). The Canadian Maternity Experiences Survey reported that younger women (aged 15-19 years) were more likely to start prenatal care after the first trimester, and were also more likely to report that they did not receive prenatal care as early as they wanted, compared to older groups of women (PHAC, 2009). Late initiation of prenatal care (care starting in the 3rd trimester) is linked with a two-fold risk increase for having a low birth weight baby (Haeri, Guichard, Saddlemire, 2009). Risk factors associated with inadequate prenatal care have been documented as being under the age of

20 and having less than high school education (Lia-Hoagberg, Rode, Skovholt, Oberg, Berg & Mullet et al., 1990). Being a very young pregnant adolescent (<15 years old) is a risk factor to late initiation of care (Haeri, Guichard, Saddlemire, 2009; Papamichael, Pillai & Yoong, 2009). Currently no studies have examined the barriers and facilitators to use of prenatal care use among Winnipeg's inner-city pregnant adolescents, nor has anyone examined how social support affects their use of prenatal care.

Social support from family and friends may be an important facilitator for pregnant adolescents to attend prenatal care (Logsdon, Gagne, Hughes, Patterson & Rakestraw, 2005). Adolescent mothers need social support in the form of knowledge, material supports, child care and emotional encouragement from family and friends, to overcome the challenges of being a pregnant and parenting adolescent (Perrin & McDermott, 1997). The Canadian Maternity Experiences Survey found that women aged 15-19 years reported the persons they found the most useful source for health information during pregnancy was their family or friends, with health care providers being a close second (PHAC, 2009). Individuals that make up an adolescent's social network should be included during prenatal care, as these are the people who provide needed support on a daily basis (Drake, 1996). Adolescents may withdraw or be uncooperative with health care providers or family (Drake, 1996). That is why it is so important for health care providers and family members to overcome this barrier by supporting and respecting the adolescent as a young adult, capable of making their own health decisions (Drake, 1996). However, little is known about the role of social support in the use of prenatal care by Winnipeg inner-city adolescents.

The information gained through this study could give very useful insight into

understanding the unique needs and challenges faced by the inner-city adolescents in Winnipeg. It could also aid in mapping out new ways to overcome barriers and promote facilitators of their prenatal care use.

Purpose

The first purpose of this study was to determine the perceived barriers and facilitators to prenatal care use that differentiate inner-city adolescents in Winnipeg who receive adequate and inadequate prenatal care, and compare differences in their demographic and psychosocial characteristics. The second purpose was to explore the effect of social support on use of prenatal care by pregnant adolescents.

Research Objectives

1. To identify the differences in perceived barriers, facilitators and motivators to prenatal care use between inner-city adolescents in Winnipeg who received adequate prenatal care and those who received inadequate care.
2. To describe the differences in demographic characteristics between adolescents who received adequate and inadequate prenatal care (e.g., age, household income, ethnicity).
3. To describe the differences in psychosocial and behavioural characteristics between adolescents who received adequate and inadequate prenatal care (e.g., social support, perceived stress, self-esteem, drug use, physical abuse).
4. To examine how pregnant adolescents who reside in inner-city Winnipeg define social support during their pregnancy.
5. To explore how social support influences the use of prenatal care by inner-city adolescents in Winnipeg.

Definition of Terms

Prenatal Care:

A prenatal care visit was considered any visit to a family physician, nurse practitioner, midwife, obstetrician/gynaecologist, or any other health care professional where care for the recent pregnancy was given. Visits not considered as a prenatal care visit were: those to confirm a diagnosis of pregnancy, and laboratory or fetal assessment tests where no health care professional was consulted (adapted from Delvau, Buekens, Godin & Boutsen, 2001).

Adequate Prenatal Care:

Controls were women who received adequate prenatal care. This was defined as women having their initial visit in the first trimester and 4 or more visits if she delivers at 22-25 weeks gestation; 5 or more visits at 26-29 weeks; 6 or more visits at 30-31 weeks, 7 or more visits at 32-33 weeks; 8 or more visits at 34-35 weeks; 9 or more visits at 36 + weeks (Heaman et al., 2006).

Inadequate Prenatal Care:

Cases were women who received inadequate prenatal care. This was defined as either no prenatal care or care that began in the third trimester, or care beginning in the first or second trimester with 1 visit for those delivering at ≤ 29 weeks gestation, 1-2 visits at 30-31 weeks, 1-3 visits at 32-33 weeks, and 1-4 visits at 34+ weeks (Heaman et al., 2006).

Barriers:

Barriers were defined as “any state, condition or event that made it difficult or prevented a woman from successfully obtaining PNC” (Johnson et al., 2003, p. 104).

Facilitators:

Facilitators were defined as external factors that make accessing prenatal care easier.

Motivators:

Motivators were those internal factors that make accessing prenatal care easier, or factors that stimulated a woman to start or continue PNC (Johnson et al., 2003).

Social Support:

For the purposes of the quantitative component, social support is comprised of several types of support: tangible support (instrumental aid); appraisal support (perceived availability of someone to talk to about one's problems); self-esteem support (perceived availability of a positive comparison when comparing with others); belonging support (perceived availability of people one can do things with) (Cohen, Mermelstein, Kamarck & Hoberman, 1985, pp.74-75.). For the qualitative section, social support was defined as being comprised of material support (practical help, e.g. meals, money, help with tasks); emotional support (encouragement, affection, approval, feelings of togetherness); and informational support (e.g. telling people things they need to know and helping them to solve problems by sharing information or finding information) (Logsdon & Usui, 2006).

Significance of the Study

The information gathered in this study will help inform health care professionals about barriers and facilitators, and the significance of social support during adolescent pregnancy. The information can be used to inform policy makers in their decisions to implement strategies and interventions to reduce barriers to prenatal care and increase social support resources specific to adolescents. Pregnant adolescents are at higher risk

for multiple negative prenatal outcomes for themselves and their babies (Grady & Bloom, 2004; Ordolis, 2007). As the health problems and health risks involved with adolescent pregnancy rise, so will the detrimental effects to their babies. This will in turn increase costs to the healthcare system and society as a whole. While there are no Canadian or Manitoba statistics available on the actual cost incurred by adolescent pregnancy, a report from the United States revealed the annual cost of teen pregnancy was \$9 billion per year (Hoffman, 2006). Pregnant adolescents have unique needs and require specialized prenatal care. To date there is no specialized "gold standard" for their care. Any interventions found useful in improving the health of these adolescents and their babies are worthwhile. The benefits for mother and baby with regard to prenatal care have long been documented. As researchers we have a duty to add to the pool of knowledge and deliver the best in evidence-based care, especially to vulnerable groups such as pregnant adolescents and their babies.

Chapter 2: Literature Review

This literature review has been organized into the following sections: use of prenatal care by adolescents, Aboriginal people in inner-city Winnipeg, barriers, facilitators and motivators to prenatal care use among adolescents, sources of social support and its significance to adolescents, and other unique characteristics and challenges to pregnant adolescents.

Use of Prenatal Care by Adolescents

Adolescents often suffer from not receiving adequate prenatal care (Tilghman & Lovette, 2008). The Canadian Maternity Experiences Survey found that pregnant women aged 15-19 were more likely to start care after the first trimester compared to older women in the sample (PHAC, 2009). A U.S. study, Healthy People 2010, stated that in 1998 only 64% of adolescents received early and adequate prenatal care (U.S. Department of Health and Human Services, 2000). In the U.S. between 2002-2004, only 65.4% of women less than 18 years old received prenatal care in the first trimester (CDC, 2005). Well-known demographic factors associated with inadequate or late initiation of prenatal care are maternal age under 20 years, less than high school education, low income, high parity (>4), unmarried and unemployed (Johnson, Khorazaty, Hatcher, Wingrove, Milligan & Harris et al., 2003; Delvaux, Buekens, Godin & Boutsen, 2001; Lia-Hoagberg et al., 1990; Melnikow & Alemagno, 1993; Nothnagle, Marchi, Egerter & Bravemen, 2000; Elam-Evans, Adams, Garguillo & Kiely, 1995). A population based study on determinants of prenatal care utilization in Manitoba found that individual predictors of those likely to have inadequate prenatal care were among women who were teenagers, had high parity (>4) and who were First Nations (Heaman, Newburn-Cook,

Green, Elliot & Helewa, 2005c). Neighborhood risk factors predicting inadequate care were women living in Winnipeg's lowest tertile of average family income, highest tertile of unemployment rate, and highest tertiles reporting Aboriginal status, education less than Grade 9 and single parent families (Heaman et al., 2005c). Many of these are characteristics often found in the adolescent population.

Barriers to Adolescents' Use of Prenatal Care

Adolescents are usually ill prepared for the demands of pregnancy and impending parenthood, perceive few resources, and are stressed (Clemmens, 2003; Rentschler, 2003; Somner et al., 1993). Lodgson et al (2005) conducted a qualitative study with pregnant adolescents and found their biggest challenges included lack of sleep, juggling multiple roles, and changing relationships. A study assessing the risk factors of late entry to prenatal care among adolescents found being unemployed, and loss of communication with the father to be significant predictors (Wiemann, et al., 1997). The financial strain among pregnant adolescents is further shown to be a significant factor in the National Center for Health Statistics (NCHS) report in 2002, stating the government paid for two-thirds of all adolescent births, compared to 14% of those paid for among women >30 years of age (NCHS, 2002). A qualitative study to identify psychosocial determinants of late entry to prenatal care among adolescents with low socioeconomic status, found that late initiators of care often perceived clinical staff to be 'insensitive', or not culturally competent (Daniels, Noe & Mayberry, 2006). Loveland Cook, Selig, Wedge & Gohn-Baube (1999) conducted a study evaluating access barriers to prenatal care among low income inner-city women (N=115). Data were collected on the postpartum ward of a large U.S. urban university affiliated hospital. The researchers found the biggest barriers

to be the following: feeling depressed about the pregnancy, living in neighborhoods associated with poverty, lack of money for basic needs, inadequate housing, dissatisfaction with care, stressful life events and limited support from others. The authors further discussed environmental barriers to access of prenatal care which included long clinical wait times, no child care at the clinic, no weekend or evening hours at the clinic, and not wanting to disclose substance abuse. The access barrier that put women at most risk for inadequate prenatal care was among those trying to conceal their pregnancy from their friends or family (Loveland Cook et al., 1999). Although the mean age of subjects in this study was young (M 23.9 years, SD 5.3), no specific analysis of adolescent results was conducted. Other researchers have agreed that fear of disclosing, and attempts to conceal a teenage pregnancy from parents may delay prenatal care (Young et al., 1989; Wiemann, Berenson, Garcia-del Pino & McCombs, 1997). In Lloyd's (2004) study, she found that poor communication or relationships with the mother and father prior to and during pregnancy led to difficulty communicating about the pregnancy. Haeri, Guichard & Saddlemire (2009) have also suggested that the psychosocial state of the very young adolescent (≤ 15 years old) could keep them from revealing their pregnancy.

It has been proposed that the adolescent may also not disclose important information to their health care provider due to fear of a break in confidentiality (Cook, Erdman & Dickens, 2007; Hobcraft & Baker, 2006). Health care providers are in a very influential position as to the information they give, how it is given, and assessing how it is perceived. If not done in a youth friendly way due to personal biases, poorly equipped clinical environment, and lack of personal expertise in adolescent health, the adolescent

could avoid seeking care, leading to negative health consequences (Hobcraft & Baker, 2006). Such things as appointments not being after school hours, long travel time, and unanticipated costs for travel or treatments can also deter youth from seeking care (Hobcraft & Baker, 2006).

Motivators and Facilitators for Pregnant Adolescents

Motivation for adolescents to use prenatal care has been noted as having “concern over the health of their baby” as a primary factor, and also concern over health for themselves (Teagle & Brindis, 1998). Family members or close friends have been noted as people who strongly urged adolescents to seek prenatal care (Teagle & Brindis, 1998). Having the same provider at each visit has made some adolescents feel more comfortable and cared for; as well has having comprehensive multidisciplinary care in one setting (Tilghman & Lovette, 2008). Grady & Bloom (2004) evaluated perceptions of benefits to group prenatal care, using the model called CenteringPregnancy (Centering Healthcare Institute, Cheshire, CT) among adolescents. They found that prenatal care, the educational component, and peer-support to be important to the young women. The adolescents made specific comments regarding the positive effect prenatal care had on their self-esteem, personal courage, and emotional support through peer-validation and advice (Grady & Bloom, 2004). A couple of studies have shown how teen-focused care resulted in better prenatal care compliance than other models, and how their intervention came at no added cost (Grady & Bloom, 2004; Bensussen-Walls & Saewyc, 2001). Teen-focused care means having an interdisciplinary team of professionals trained in the challenges specific to teens. It also means having it delivered in a teen-friendly environment, and catering only to teens (Bensussen-Walls & Saewyc, 2001; Drake,

1996). It has been suggested that if adolescents perceive prenatal care as important, based on parental and peer influence, it could increase their use of prenatal care (Tilgham & Lovette, 2008). By including the adolescent as an active member in her health care decision, the health care provider is supporting her use of prenatal care (Drake, 1996; Tilgham & Lovette, 2008).

Sources of Social Support Among Adolescents

Pregnant adolescents and their families are likely to have less resources and support compared to the average pregnant woman (Tilghman & Lovette, 2008). Support from parents, provide the needed security to create a new relationship (Collins & Laursen, 2004). Rubin et al. (2006) found that as the adolescent develops, parents become a less important source of support, and peers become more important. Logsdon et al (2005) found pregnant adolescents' main sources of support to be provided by family, and sometimes partners and peers. Mothers have been named as the primary person to consult for sex related issues (Lloyd, 2004). Lloyd (2004) conducted a qualitative study examining communication among 30 adolescents in California, prior to and during pregnancy. Sources of social support were named as parents, mother-in-law, boyfriend, sister, little brother, boyfriend's cousin, aunt, other friends, and siblings. Burke & Liston (1994) found social support was most often provided to pregnant adolescents by their mothers and their babies' fathers. The adolescent's relationship with the baby's father may be important to her, and therefore influence her use of prenatal care (Drake, 1996). However, relationships with these individuals often result in conflict (Barnet, Joffe, Duggan, Wilson, & Repke, 1996). Social support has been found to range widely amongst the fathers (Logsdon et al., 2005). Logsdon et al. (2005) found mothers of

pregnant adolescents to be more consistent than the fathers or boyfriends. They also found the mothers of the boyfriend to be emotionally supportive, and often offered transportation to prenatal care visits (Logsdon et al., 2005). Typically the parents of pregnant adolescents are divorced or never married; with little support provided by the adolescent's father (Logsdon & Gennaro, 2005).

Significance of Social Support Among Adolescents

Social support has been identified as helpful by pregnant adolescents. Grady and Bloom (2004) conducted a study evaluating the prenatal care use, perinatal outcomes, and level of satisfaction with a teen-focused group prenatal care model called CenteringPregnancy (Centering Healthcare Institute, Cheshire, CT), at a large U.S. hospital. They recruited 124 adolescents. The results showed high rates of prenatal care use than compared to a control group of adolescents who delivered at the same hospital in a different year. There was a higher 8 week postpartum follow-up attendance, lower rates of low birth weight and preterm births, and higher satisfaction ratings (Grady & Bloom, 2004). The researchers attributed the positive results to the high support and education components of the program (Grady & Bloom, 2004). The CenteringPregnancy (Centering Healthcare Institute, Cheshire, CT) model has also been tested among a group of pregnant women aged 14-25 (N=1,047) in a U.S. randomized controlled trial (Ickovics, Kershaw, Westdahl, Magriples, Massey et al., 2007). The researchers compared the group prenatal care to standard care at two university affiliated hospitals. They found that those in group care were less likely to have inadequate prenatal care, had better prenatal knowledge, felt more prepared for labour and delivery and expressed greater satisfaction with the care they received (Ickovics et al., 2007).

Rothenberg and Weissman (2002) developed a teen-focused program that dealt with pregnant and parenting adolescents. The authors stated that although enrollment was initially slow, once the adolescents made the initial attendance, they were highly motivated to continue participation. Their program was so successful it expanded to incorporate care and education of the teen-mother's children, aiding the adolescent mothers in achieving gainful employment, preventing early repeat pregnancies, and decreasing the number of mothers dependent on social assistance. Rothenberg and Weissman (2002) attributed their successes to the high levels of on-going support to the teens during pregnancy on through parenthood. A case management intervention study in North Carolina compared 1260 adolescents who received an intervention called Adolescent Parenting Program (APP), a program for pregnant and parenting teens, to a control group of 1260 pregnant and parenting teens who did not attend APP (Sangalang, Barth & Painter, 2006). After analysis it was found that the groups had similar use of prenatal care, however the birth outcomes were more positive with the APP group in terms of higher gestational age, birth weight, and longer time delay of second pregnancy (Sangalang et al., 2006). The study implies that direct care from social workers and other health care providers led to the positive birth outcomes (Sangalang et al., 2006). A pilot study was conducted by Logsdon et al (2005) with 30 pregnant adolescents, in an alternative school for pregnant and parenting adolescents in an urban area of the Southern United States. It found adolescents' biggest social support needs to be the need for consistent emotional support (support that is always present but allows independence), money, housing, and transportation. Pregnant adolescents usually have the fewest resources because of lack of education and experience needed to be self-supporting

(Tilghman & Lovette, 2008). Pregnant adolescents are at higher risk of being socially stigmatized, which can lead to depression, low self-esteem, social isolation and poor academic performance (Wiemann, Rickerts, Berenson & Volk, 2005). Risk factors of experiencing stigma are not being legally/common-law married or engaged to the baby's father, feeling socially isolated, being verbally abused, fear of physical harm by other teens, and a criticizing family (Wiemann, Rickerts, Berenson & Volk, 2005).

Previous research has demonstrated the benefits of social support in decreasing stress and improving outcomes in pregnant and parenting adolescents (Gallagher, 1999; Logsdon, Birkimer, Ratterman, Cahill, & Cahill, 2002). However, few studies have been qualitative, and there is a need to give voice to the adolescent's perspective concerning the issues surrounding social support. Logsdon et al. (2005) found that social support needs were often financial. Receiving adequate social support has been associated with positive outcomes for the pregnant adolescent and her baby (Logsdon et al., 2005). These outcomes include improvement in the adolescent's health, fewer pregnancy complications (Henley, 1997; May, 1992; Renker, 1999), and improvements in her life satisfaction and school performance (Stevenson, Maton, & Teti, 1999). Other consequences of social support have been noted to be such things as improvements in mental health (Finfgeld-Coneet, 2005), and a buffer to and preventer of stress and illness (Gonzalez, Goepinger & Lorig, 1990; Caplan, 1974; Berkman & Syme, 1979). On the other hand inadequate social support during pregnancy is often associated with negative outcomes such as depression (Miller, 1998). Reviews examining the relationship between social support and prevention of preterm birth and low birth weight have shown inconclusive results (Hodnett & Fredericks, 2006; Orr, 2004). Further research is

therefore needed, especially for the marginalized group of pregnant adolescents.

Several studies have found positive correlations between parental support and peer support (Burke & Liston, 1994; De Goede, Banje, Delsing & Meeses, 2009; Logsdon et al., 2005; Loyd, 2004). De Goede, Banje, Delsing & Meeses (2009) found that adolescents model their relationships with their parents to understand and form relationships with friends.

Dr. Nola Pender has been involved in conducting several studies involving the analysis of social support and its relationship to health promoting behaviour. A study examining the relationship between social support and a health promoting behaviour (physical activity) in adolescents, found peers to have a significant direct effect on physical activity (Wu & Pender, 2002). Another study among adolescents found that the target health promoting behaviour (physical activity) was indirectly influenced by social support through self-efficacy and perceived benefits to action (Wu & Pender, 2005). Ability to be influenced depends on developmental stage, especially evident in adolescence (Pender, Murdaugh & Parsons, 2006). A study by Poole et al (1982) showed that 32% of mothers of adolescent mothers and sisters of adolescent mothers had experienced a pregnancy before 17 years of age. This finding builds on previous statements regarding the strong influence family members have on adolescents.

Characteristics and Unique Challenges Faced by Pregnant Adolescents

Self-Esteem

Self-esteem has been found to be at its lowest between the ages of 13-18; with girls being twice as low as boys (Santrock, 2001). Teenagers need good self-esteem and self concept to become independent. Therefore it is important for adolescent girls to have

ample opportunity to develop their self-esteem (Powell, 2004). The psychosocial risks incurred by being a pregnant teenager can lead to feelings of low self-esteem and depression (Santrock, 2001; Powell, 2004).

Physical and Sexual Abuse

Sexual and physical abuse have been strongly linked with adolescent pregnancy (Boyer & Fine, 1992; Stevens-Simon & McAnarney, 1994). Logsdon et al. (2005) found the teens in their study experienced fear of violence against them in their neighbourhood and from the father of the baby. Adolescent females also have a high rate of nonconsensual sex, even when non-violent (Jejeebhoy, Shah & Thapa, 2005). Heaman (2005) conducted a study examining the relationship between physical abuse during pregnancy, and risk factors for preterm birth among 680 Manitoba women. Of the sample, 74 were <20 years old. Abused women had a significantly younger mean age, less years of education, and fewer prenatal care visits compared to non-abused women (Heaman, 2005). Abused women experienced higher mean scores for perceived stress and life event stress and had lower scores for support from their partner and other people, compared to the non-abused women. The abused women also had lower self-esteem scores than the non-abused women (Heaman, 2005).

Sexually Transmitted Infections (STI's) Among Adolescents

Rates of STI's are high in this group. In Manitoba from January to April of 2009, there were over 2600 reported cases of Chlamydia and Gonorrhoea, with 60% of those being from Winnipeg (Gay, Lesbian, Bisexual, Transgendered, Transexual (GLBTT), 2009). The group at highest risk are those between the ages of 15-24, making up 40-50% of those reportable STI's (GLBTT, 2009). Overall STI rates among adolescents have

varied in Manitoba, in 2001-17.1; 2002-18.3; 2003-20.5; 2004-22.4; 2005-18.8 and 2006-21.1 (all per 1000) (Healthy Child Manitoba, 2009). It is thought that by increasing STI campaigns more youth will be accessing teen health services, thereby increasing testing/diagnosing and the reported number of STI's temporarily (Healthy Child Manitoba, 2009).

Cognitive Developmental Stage

Adolescents have unique needs, challenges and transitions during this phase of life. They are going through a range of emotional, biological and psycho-social conflicts (Powell, 2004). Santrock (2001) (as cited in Powell, 2004, p. 80) "They are trying to find out, (1) who they are, separating from their families; (2) what they are about, their interest and personalities; and (3) where they are going, in order to discover their place in adult life". Pregnancy can have adverse affects on the developmental changes the adolescent normally experiences (Drake, 1996). Early, middle and late adolescents have their own individually unique characteristics regarding cognitive and psychosocial development (Drake, 1996). Early adolescents (11-15 years old) have a stronger reliance and influence on their family and parents regarding health care decisions (Drake, 1996). Middle adolescents (14-18 years old) are developing abstract thinking, and can realize consequences to their actions regarding fetal health (Drake, 1996). Middle adolescents often experience conflict with their parents regarding things like behaviour or choice of boyfriend, which can result in rebellion if not managed properly (Drake, 1996). The late adolescent (17-20 years old) has mastered abstract thinking, fully realizes consequences to her actions regarding fetal health and is able to be an equal partner in her health care decisions (Drake, 1996).

Other Disadvantages

Today's pregnant adolescents are much more likely to be unmarried and therefore have a greater likelihood of being on welfare support than in past years. (Heavey, Kristen, Moysich, Hyland, Druschel & Sill, 2008). A study conducted by Heavey et al (2008) found in a chart analysis of 335 pregnant adolescents at a New York state-funded family planning clinic, that 32% were no longer in school, over half were on public assistance and the majority were from a racial minority group. It has been well documented that social and economic disadvantage are associated with adolescent pregnancy (Lu & Halfon, 2003; Jewell, Tacchi & Donovan, 2000; Zabin, Astone & Emerson, 1993; SmithBattle, 2000; Duncan & Hoffman, 1990; Brewster, Bill & Grady, 1993; Cherlin, Kiernan & Chase-Lansdale, 1995). A study by Brownell (2007) examined socioeconomic status (SES) among Manitoba children. Higher rates of teenage births were found in low SES areas in and outside Winnipeg. Teen birth rates in Winnipeg were 2.5 times higher in low SES areas compared with low to mid SES areas. This rate was over 13.5 times higher in low SES areas compared with high SES areas (Brownell, 2007).

Summary

Prenatal care use among adolescents is often inadequate. Some general characteristics common to pregnant adolescents have been found to be risk factors for the inadequate use of prenatal care, such as being under the age of 20, having less than high school education, having low income, and being unmarried and unemployed. Adequate social support has been linked in previous research as aiding in positive outcomes for the adolescent mother and baby. More research is necessary to determine the relationship

between social support during pregnancy and prenatal care use among adolescents. The cost to the adolescent, the baby and society in general is high. The objectives of this study were to: (1) identify differences in perceived barriers, facilitators and motivators to use of prenatal care among pregnant adolescents who received adequate and inadequate prenatal care; (2) describe differences in demographic characteristics between cases and; (3) describe differences in psychosocial and behavioural characteristics between cases and controls; (4) examine how pregnant adolescents who reside in inner-city Winnipeg define social support as it relates to their prenatal care use; (5) to explore how social support influences the use of prenatal care by inner-city adolescents in Winnipeg. This study may provide important information to aid in designing programs tailored to the needs of these inner-city pregnant adolescents.

Chapter 3: Conceptual Framework

The Health Promotion Model (HPM) designed by Dr. Nola Pender was used as the guiding framework for this study (Pender et al., 2006) (See Figure 1). It is a mid-range theory that places value on the belief that preventing illness through health promoting behaviours is valuable. To date, research with populations such as adolescents supports the constructs of the HPM in predicting health-promoting behaviour (Srof & Velsor-Friedrich, 2006). Some studies have used the HPM as one component of a conceptual framework in their study, while others have used health promotion as an outcome (McEwan & Wills, 2007). It is considered to be one of the leading theories in adolescent health-promotion research that has resulted in practice guidelines (Montgomery, 2002). A CINAHL search done in 2004 created a list of 148 English-language articles that reported the use or application of the HPM in the previous 10 years (McEwan & Wills, 2007). This model has worth and importance in creating healthier communities through the promotion of prenatal care use as a health promoting behaviour.

Theory Description

Purpose

The HPM is proposed as a holistic predictive model of health-promoting behaviour for use in research and practice. The HPM is an attempt to depict the multidimensional nature of persons interacting within the interpersonal and physical environments as they pursue health (Pender et al., 2006). The HPM describes the potential of eleven cognitive-perceptual factors to explain and predict health behaviour (Pender et al., 2006, pp. 50). This model has applicability to any individual, across the life span, to any health behaviour that doesn't propose *threat* as a major source of motivation for behaviour

(Pender et al., 2006). The end point of the theory is when the individual has attained health through their behaviour change. Dr. Pender distinguishes her HPM from others by stating there is no *threat* involved with motivation (Pender et al., 2006).

For the purposes of this study a modified version of Dr. Pender's model was used examining key concepts of the model relevant to this study (See Figure 2). The concepts to be examined as independent variables are demographic characteristics (such as age, ethnicity, income), psychosocial characteristics (such as self-esteem and stress), perceived barriers to action, perceived benefits to action, and interpersonal influence (such as social support, and family hardiness), as they relate to the health promotion behaviour of seeking prenatal care.

Theoretical Propositions

The HPM is based on theoretical propositions that provide the basis for investigative work on health behaviour (Pender et al., 2002):

- 1) Prior behaviour and inherited and acquired characteristics influence beliefs, affect and enactment of health-promoting behaviour.
- 2) Persons commit to engaging in behaviours from which they anticipate deriving personally valued benefits.
- 3) Perceived barriers can constrain commitment to action, a mediator of behaviour, as well as actual behaviour.
- 4) Perceived competence or self-efficacy to execute a given behaviour increases the likelihood of commitment to action and actual performance of the behaviour.
- 5) Greater perceived self-efficacy results in fewer perceived barriers to specific health behaviours.
- 6) Positive affect toward a behaviour results in greater perceived self-efficacy, which can, in turn, result in increased positive affect.
- 7) When positive emotions or affect are associated with a behaviour, the probability of commitment and action are increased.
- 8)

Persons are more likely to commit to and engage in health-promoting behaviours when significant others model the behaviour, expect the behaviour to occur, and provide assistance and support to enable the behaviour. 9) Families, peers, and health care providers are important sources of interpersonal influence that can increase or decrease commitment to and engagement in health-promoting behaviour. 10) Situational influences in the external environment can increase or decrease commitment to or participation in health-promoting behaviour. 11) The greater the commitment to a specific plan of action, the more likely health-promoting behaviours are to be maintained over time. 12) Commitment to a plan of action is less likely to result in the desired behaviour when competing demands over which persons have little control require immediate attention 13) Commitment to a plan of action is less likely to result in the desired behaviour when other actions are more attractive and thus preferred over the target behaviour. 14) Persons can modify cognitions, affect, and the interpersonal and physical environments to create incentives for health actions.

HPM Assumptions

The HPM is based on these assumptions that reflect nursing and behavioural science perspectives (Pender et al., 2002):

- 1) Persons seek to create conditions of living through which they can express their unique human health potential.
- 2) Persons have the capacity for reflective self-awareness, including assessment of their own competencies.
- 3) Persons value growth in directions viewed as positive and attempt to achieve a personally acceptable balance between change and stability.
- 4) Individuals seek to actively regulate their own behaviour.
- 5) Individuals in all their biopsychosocial complexity interact with the environment,

progressively transforming the environment and being transformed over time. 6) Health professionals constitute a part of the interpersonal environment, which exerts influence on persons throughout their lifespan. 7) Self-initiated reconfiguration of person-environment interactive patterns is essential to behaviour change.

Conceptual and Operational Definitions

This study proposes to uncover factors related to the prenatal care (the health promoting behaviour) among inner-city adolescents. The results from this study will identify the demographic, psychosocial and behaviour-specific cognition factors that are related to the adequate and inadequate use of prenatal care. The conceptual and operational definitions will be explained in the following section, using a modified HPM (Figure 2).

Individual Characteristics and Experiences

Individual characteristics and experiences is a major category that states each person has unique personal characteristics and experiences that affect their future action. The importance of their effect depends on the target behaviour. Characteristics or past experiences give flexibility within the HPM to study variables that might be relevant to only specific health promoting behaviours, or specific target populations (like pregnant adolescents) (Pender et al., 2006).

Personal Factors

Personal factors are the predictive factors shaped by the health promoting behaviour being considered. They are categorized as biologic, psychological and sociocultural. Biologic factors can include age, body mass index, pubertal status, menopausal status, aerobic capacity, strength, agility or balance. Psychological factors

include concepts of self-esteem, self-motivation, and perceived health status. Sociocultural factors include race, ethnicity, acculturation, education and socioeconomic status. Personal factors should be limited to those relevant to explain or predict the target behaviour (Pender et al., 2006). Research has shown that variables such as age, marital status, education level, household income, and race/ethnicity have been linked to predicting prenatal care use. Therefore these variables will be examined in this study.

Psychological Factors

Self-Esteem

Adolescents struggle with establishing an identity, accepting physical changes, learning skills for a healthy lifestyle and separating from their family (Susman, Dorn & Shiefelbeing, 2003). Therefore, it is important for them to develop good self-esteem and the ability to care for themselves (Anderson & Olnhausen, 1999). Self-esteem has well-known consequences not only on current physical and mental health and health-related behaviour, but also on future health and health-related behaviour during adulthood (Mann, Hosman, Schaalma, 2004). Self-esteem also plays an important role in what are currently the most frequently used cognitive models of health behaviour (Veselska, Geckova, Gajdosova, Orosova & van Dijk et al., 2009).

Rosenberg's 10-item Self-Esteem Scale (Rosenberg, 1965) was used to measure overall self esteem. The scale consists of 10 statements related to overall feelings of self worth or self-acceptance. It is defined as "a favourable or unfavourable attitude towards oneself" (Rosenberg, 1965, pp.15). The items are answered on a 4 point scale ranging from 'strongly agree' to 'strongly disagree'. The responses for the 10 items are scored, with 5 of the questions reverse scored. The higher the score of the participant is related to

a higher self-esteem. This scale has been proven as an effective tool with proven reliability and validity, and has shown strong internal consistency with a Cronbach's alpha of 0.78 (Rosenberg, 1965).

Stress

Stress is not part of the original HPM, however it has been incorporated in the modified HPM used to guide this study. Perceived health status was replaced with measuring perceived stress. Stress was measured using the 4-item version of the Perceived Stress Scale (PSS), designed by Cohen; and used in the original study by Heaman et al. (2006) (Appendix B). The PSS is an instrument that, "measures the degree to which situations in one's life are appraised as stressful" (Cohen, Kamarck, Mermelstein, 1983b, pp.385). The items and response options are easy to understand (Cohen, Kamarck, Mermelstein, 1983b). Participants are asked to think back to when they were pregnant, before answering the four questions. The four questions assess how uncontrollable, unpredictable and overloaded their lives were during pregnancy. Total scores are summed from the 5 point Likert-scale, with two items being reverse scored. The original testing of reliability and validity of the PSS, showed reliability with a coefficient alpha ranging from .84-.86, and had a test-retest (2-day interval) correlation of .85 (Cohen et al., 1983b). The PSS has been determined as having adequate internal and test-retest reliability; along with high correlation with symptomatological measures. The PSS showed validity in being unaffected by sex or age (Cohen et al., 1983b).

Abuse

Abuse is an issue faced by pregnant adolescents (Boyer & Fine, 1992; PHAC, 2009; Heaman, 2005; Stevens-Simon & McAnarney, 1994). Abuse during pregnancy was

evaluated. The variable was dichotomized as being present or not present. Abuse was measured using the abuse assessment screen (McFarlane, Parke, Soeken & Bullock, 1992), and considered present by a woman answering 'yes' to any questions from 139-141 in Heaman et al.'s (2006) study (See Appendix B).

Sociocultural Factors

Data were collected on race/ethnicity. There is a high concentration of Aboriginal peoples in inner-city Winnipeg. It was estimated that in Winnipeg, there were 68,380 Aboriginal peoples, or 10% of the city's population in 2006. This is the largest Aboriginal population in any of the 33 census metropolitan areas in Canada (Statistics Canada, 2008). Also in 2006, 48.8% of Winnipeg's Aboriginal population were youth aged 24 years and younger (Statistics Canada, 2008). Many Aboriginals have a unique set of problems related to culture shock and an adjustment phase after arriving from northern communities (Carter, 2004). Nation-wide Aboriginal health is poorer than other Canadians, and therefore plays a significant role in this community's health (CNA, 2005b). Differences in culture can cause isolation, unemployment, and poverty, especially with Aboriginal people (Carter, 2004). Carter (2004) states that a lack of proper sex education has resulted in the high rates of Aboriginal teen pregnancy; which has then lead to high rates of babies being born with health problems and entering foster care. A special report on the sexual health of urban Aboriginal youth found that Aboriginal teen pregnancy in British Columbia, Alberta, Saskatchewan, Manitoba and the Atlantic provinces had as much as four times higher rates than the national average (Anderson, 2002). For women less than 15 years of age, the rate is almost 18 times higher than the general teenage population.

Facilitators

Behaviour-Specific Cognitions and Affect is a major concept heading, considered to contain the main motivational variables for behaviour change. These are the variables that can be modified by nurse intervention (Pender et al., 2006). They must be measured to determine if changing them was caused by an actual nurse intervention, and if that resulted in the target health promoting behaviour.

Facilitators and Motivators, or *Perceived Benefits of Action* as it is labelled in the HPM, is defined as the individual's expectations of the anticipated benefit from engaging in the health promoting behaviour (Pender et al., 2006). Perceived benefits or motivators, can be intrinsic or extrinsic; while facilitators are assumed to directly affect the health promoting behaviour. An example of intrinsic benefit is increased knowledge, while extrinsic is money reward or social interaction. Extrinsic benefits initially cause significant motivation, but intrinsic benefits maybe cause significant continual motivation. The degree of the perceived benefit and temporality of the perceived benefit affect its ability to cause a behaviour. The individual's expectations of the anticipated benefits are assumed to directly motivate behaviour. This portion of the model incorporates the Expectancy-Value Theory (EVT). The EVT believes that the subjective value of change (or perceived benefits to action) is based on the assumption that the more a person is dissatisfied with her or his present situation in a particular domain, the greater the benefits associated with favourable change are viewed. The EVT itself has assumptions from the expectancy-value model of human motivation, described by Feather (1982). The subjective value of change is comparable to the HPM's *perceived benefits of action*. EVT also believes that *subjective expectancy of successfully obtaining*

the change is based on prior knowledge of personal successes, or successes of others achieving change, and ones' personal confidence in their ability to change (Klar, Nader & Mallor, 1992). Perceived benefit has generally been found to be necessary, but not sufficient in causing a health promoting behaviour (Pender et al, 2006). Facilitators are defined as external factors that make accessing prenatal care easier. Motivators are those internal factors that make accessing prenatal care easier. In Heaman's study (2006), items capturing facilitators and motivators of prenatal care were developed and adapted from a study by Johnson et al. (2003).

Barriers

Perceived Barriers to Action, is a variable that has been found to be significant in affecting an individual's engagement in a target behaviour. Looking at previous studies, perceived barriers have been found to be significant (Pender et al., 2006). Barriers can be real or imagined, and are comprised of beliefs involving unavailability, inconvenience, expense, difficulty or time-consumption of a target behaviour (Pender et al., 2006). Barriers are often viewed as hurdles, mental blocks, or personal cost of engaging in a health promoting behaviour. Barriers have been defined as blocks or hindrances by adolescents (Wu, Pender & Nouredine, 2003). An example of loss of satisfaction with cessation of eating high-fat foods or smoking to take on health promoting behaviour can be considered barriers. Barriers usually cause avoidance in a target behaviour, or in this case inadequate prenatal care. When motivation is low and barriers are high, action is unlikely. Alternately when motivation is high and barriers are low the action is more likely. Barriers to an experienced behaviour are stored in memory as "hurdles" that need to be overcome for success (Bandura, 1985). The nurse must help clients shape a positive

image by focusing on benefits, overcoming hurdles and engaging clients in successful behaviours while giving positive feedback (Pender et al., 2006). In the original study by Heaman et al. (2006), barriers are defined as factors (perceived and unperceived), which make accessing prenatal care difficult or impossible. Items capturing barriers were developed and adapted from a study by Johnson et al. (2003).

Social Support

Interpersonal Influences are defined as cognitions concerning behaviours, beliefs or attitude of others, that may or may not relate to reality (Pender et al., 2006). The main sources of interpersonal influence on target health promoting behaviour are family (parents or siblings), peers and health care providers. Included are norms (expectations of significant others), social support (instrumental and emotional encouragement), and models (vicarious learning from observing others engage in a target behaviour). These three affect one's decision to engage in a target behaviour. Social norms are standards that one may accept or reject. Social support aids an individual in engaging in a behaviour. Modeling is important for behaviour change in Social Cognitive Theory and is a sequence component in the HPM. This concept directly and indirectly affects health promoting behaviour through social pressure or encouragement to a plan of action. Individual's sensitivity to praise, examples and wishes of others varies. However people will be more likely to engage in a behaviour if there is enough motivation consistent with interpersonal influences, that will result in social reinforcement and admiration. For influences to cause change, individuals must recognize the behaviours, wishes and inputs of others, understand them, and integrate them into cognitions related to the behaviour (Pender et al., 2006). Ability to be influenced depends on developmental stage, especially

evident in adolescence (Pender et al., 2006). Different cultures can place more emphasis on interpersonal influences than others. In two studies involving adolescents, this construct was defined as instrumental and emotional encouragement offered by others that acts as a sustaining resource for physical activity (Garcia, Norton Broda, Frenn, Coviak, Pender et al., 1995; Wu & Pender, 2002).

The measurement tool used to measure the teen's social support was the Interpersonal Support Evaluation List (ISEL) by Cohen and Hoberman (1983a). The original ISEL tool consists of a list of 48 statements regarding the perceived availability of social support resources. This study used a shortened version with 15 items, measuring social support in three subscales; tangible, appraisal and belonging support. Tangible resources are also considered the perceived availability of material aids, appraisal support measures the perceived ability to talk about one's own problems, and belonging measures perceived availability of other people to do things with (Cohen & Hoberman, 1983a). The items are counterbalanced for desirability, or half of the statements are positive statements about social support resources, while the other half are negative statements about social support resources. Respondents are asked to indicate whether the statements are "probably true" or "probably false about themselves" on a 4-point scale. (Cohen & Hoberman, 1983a, pp.103). This tool is considered to be a reliable measure of social support with a Cronbach's alpha of .77 for the entire scale. A confirmatory factor analysis of the ISEL was conducted by Brookings and Bolton (1988) and was found to be a good measure of a general social support construct.

Family Hardiness

The Family Hardiness Index was used to measure the inner strength of the family

and its durability as a unit. It is a 20 item instrument with four subscales. These subscales are co-ordinated commitment, confidence, challenge and control. The co-ordinated commitment subscale measures the family's internal strengths, ability to work together and dependability (McCubbin, McCubbin & Thompson, 1986, pp.125). Confidence measures the family's ability to plan ahead, endure hardships, experience life with interest and meaningfulness, and being appreciated for their efforts (McCubbin et al., 1986, pp. 125). The challenge subscale measures the family's efforts in being innovative, active, experience new things and to learn (McCubbin et al., 1986, pp. 125). Control measures the family's perception of internal control over family life (McCubbin et al., 1986). *Hardiness* is defined as: the family's internal strengths and durability characterized by an ability to work together to find solutions to difficulties, viewing change as positive and growth producing rather than threatening, an active (versus a passive) way to managing stressful situations, and a sense of control over life event outcomes (McCubbin, McCubbin & Thompson, 1986). The instrument was found to have internal reliability, shown by a Cronbach's alpha of .82 (McCubbin, McCubbin & Thompson, 1986).

Health Promoting Behaviour (Prenatal Care Use)

Health-Promoting Behaviour is the endpoint or action outcome aimed at *attaining positive health out-comes* for the individual (Pender et al., 2006). When health-promoting behaviours are adapted into all aspects of a healthy lifestyle, the result is improved health, improved functional ability and improved quality of life at all stages of development (Pender et al., 2006). This end point or dependent variable in this study is use of pregnant care, categorized as adequate or inadequate prenatal care.

Relationships and Structure

Although the arrow is drawn in the model in one direction, it is recognized in the literature by Pender et al (2006) that this is a reciprocal relationship. A study by Wu & Pender (2002) and another study by Garcia et al (1995), (both involving adolescents) show conflicting evidence with the HPM's direct relationship between interpersonal influences and health-promoting behaviour. Both studies suggest this is an indirect, mediated relationship, rather than the direct one depicted in the model. Garcia et al (1995) suggests that the direct relationship of self-efficacy causing an effect on health-promoting behaviour is not direct as the HPM suggests, but rather indirect.

Chapter 4: Study Design

This study employed a mixed methods design, including both a quantitative component (secondary analysis of a case-control study) and a qualitative component (open-ended interviews). The quantitative component of this study was used to answer the first three objectives while the qualitative component was used to answer objectives four and five. The primary focus is the secondary data analysis, and the qualitative component helped to further explain the findings from the quantitative component. This is therefore a sequential explanatory design (Creswell, Plano Clark, Gutman & Hanson, 2003), where one method is used first (quantitative), followed by the other (qualitative).

Mixed methods research has been defined as the combining of “elements of quantitative and qualitative research approaches (e.g., use of qualitative and quantitative viewpoints, data collection, analysis, inference techniques) for the broad purposes of breadth and depth of understanding and corroboration” (Johnson, Onwuegbuzie, & Turner 2007, pp.123). It involves “...the collection or analysis of both quantitative and/or qualitative data in a single study in which the data are collected concurrently or sequentially, are given a priority, and involve integration of the data at one or more stages in the process of research.” (Creswell, et al., 2003, pp. 212). The rationale behind combining qualitative and quantitative techniques is to elaborate, enhance, illustrate and clarify results from one method with the results from the other (Flemming, Adamson & Atkin, 2008). It is believed that this method aids in answering questions that cannot be answered by either approach alone (Creswell & Plano Clark, 2007). Mixed methods encourages use of multiple world views rather than views traditionally paired with quantitative and qualitative (Creswell & Plano Clark, 2007). This method is seen as

practical in that it allows researchers to use all methods necessary to answer a research question, by combining observation with inductive and deductive thinking (Creswell & Plano Clark, 2007). Using mixed methods can decrease some of the common limitations that each individual study method has (Creswell et al., 2003).

Of the six major types of mixed methods designs, sequential explanatory design is the most straightforward (Creswell et al., 2003). It first collects and analyzes quantitative data, while collection and analysis of qualitative data follows. Priority is usually given to the quantitative data, with the two methods integrated during interpretation (Creswell et al., 2003). It's typical purpose is to use qualitative results to help explain and interpret findings from the quantitative study. In the case of unanticipated results the qualitative data can be useful in examining those results more in depth (Creswell et al., 2003). The main strength of this design has been noted as its straightforwardness, ease to describe and report, and ability to be divided into two separate phases (Creswell et al., 2003).

Quantitative Component

Design

The quantitative component of this study consisted of a secondary analysis of a data set from a case-control study conducted by the Principal Investigator Dr. Maureen Heaman (Heaman, Moffat, Sword, Helewa & Elliott, 2006). The study examined the factors associated with inadequate prenatal care use among inner-city Winnipeg women. Polit & Beck (2008) define a case-control study as “a nonexperimental research design involving the comparison of a ‘case’ (i.e., a person with the condition under scrutiny) and a matched control (a similar person without the condition).” (pp. 748). The case group is considered those adolescents’ who reported inadequate prenatal care use, while controls

are those who reported adequate prenatal care use. The dependent variable was use of prenatal care among adolescents, while the independent variables were demographic characteristics, self-esteem, perceived stress, perceived barriers and motivators, and the interpersonal influences of social support and family hardiness.

Setting and Subject Selection

Dr. Heaman's study was conducted at two locations, the Women's Hospital at the Health Science Centre and St. Boniface General Hospital in Winnipeg, Manitoba. Subjects were recruited from the Labour, Delivery, Recovery and Postpartum units (LDRP) and Postpartum wards. Inclusion criteria for participants included women who have given birth to a live infant at St. Boniface General Hospital and the Women's Hospital at the Health Sciences Centre. Participants were from one of the eight inner-city areas of Winnipeg known to have higher risk of low access of prenatal care services as found by a previous study (Heaman, Green, Newburn-Cook, Elliott, & Helewa, 2007). A prenatal care visit was considered any visit to a family physician, nurse practitioner, midwife, obstetrician/gynaecologist, or any other health care professional where care for the recent pregnancy was given. Visits not considered as a prenatal care visit were: those to confirm a diagnosis of pregnancy, and laboratory or fetal assessment tests where no health care professional was consulted (adapted from Delvau, Buekens, Godin & Boutsen, 2001). Controls were women who received adequate prenatal care. This was defined as women having their initial visit in the first trimester and 4 or more visits if she delivers at 22-25 weeks gestation; 5 or more visits at 26-29 weeks; 6 or more visits at 30-31 weeks, 7 or more visits at 32-33 weeks; 8 or more visits at 34-35 weeks; 9 or more visits at 36 + weeks (Heaman et al., 2006). Cases were women who received inadequate

prenatal care. This was defined as either no prenatal care or care that began in the third trimester, or care beginning in the first or second trimester with 1 visit for those delivering at ≤ 29 weeks gestation, 1-2 visits at 30-31 weeks, 1-3 visits at 32-33 weeks, and 1-4 visits at 34+ weeks (Heaman et al., 2006).

In order to gain a broader perspective, adolescents with a singleton or multiple birth, and adolescents whose infants were placed in the care of Child and Family Services were included. Exclusion criteria included women with a severe psychiatric condition that prevented their capacity to participate in the interview questionnaire, and women who suffered an early neonatal death, as approaching these women during a time of grieving would be unethical.

Data Collection

In Heaman et al.'s (2006) study, the women were screened for inclusion criteria by the research nurse, using postal codes to see if the woman lived in one of the eight inner-city Winnipeg neighbourhoods. After being identified as a potential participant, a hospital staff member (usually the primary care nurse) was asked to approach the woman. The nurse then asked her permission to be seen by the research nurse, to have the study explained to her. If the woman agreed to be seen by the research nurse, the research nurse explained the details of the study to the potential participant. The women were given a written copy of the study details and pertinent information, with time to ask any questions. After this was done, the women were given the option to participate in the interview questionnaire. If she agreed to participate she signed a consent form that stated her agreement to participate in the study, and gave permission to access her medical records for further information. The face-to-face interview with the structured

questionnaire averaged 45 minutes to complete. The research nurse asked each question, and recorded participant responses. Data collection began January 2007 and was completed in January 2010. The total sample size for Heaman et al.'s (2006) study was 620 women (202 cases and 418 controls); of these, 92 were adolescents.

Measurement Instruments:

Appendix B contains the complete questionnaire used in Heaman et al.'s (2006) study. The questionnaire includes a number of questions about demographic, psychosocial and behavioural factors, as well as barriers, motivators and facilitators to prenatal care. The questions were close-ended and pertained to factors related to prenatal care use, from previous studies. Several instruments were incorporated to further delve into factors related to prenatal care use. These instruments were described in the previous chapter.

Data Analysis:

A secondary analysis of Heaman et al.'s (2006) dataset, was conducted using the data from the adolescent participants (age 19 years or less). The sample consisted of 92 adolescents, 50 of whom were cases and 42 who were controls. Data were analyzed with the use of the Predictive Analytic Software (PASW) for Windows Version 17. A statistician was consulted for the data analysis and interpretation of the results.

Initially, data were summarized using descriptive statistics. Frequencies were calculated for categorical variables, and means and distributions were calculated for continuous variables. The *t*-test was used to compare case-control differences for continuous independent variables (age, social support, stress, family hardiness, self esteem). The prevalence of barriers, facilitators and motivators were examined and

compared between cases (adolescents with inadequate prenatal care) and controls (adolescents with adequate prenatal care), using data from questions 21 to 26 from the questionnaire in Appendix B. The Chi-square test was used to test for significant differences in proportions between the two groups. “The Chi-square statistic is computed by summarizing differences between observed and expected frequencies for each cell” (Polit & Beck, p. 2008, 600).

A bivariate analysis was then conducted to explore the association between a variety of independent variables and the dependent variable of use of prenatal care. Variables were dichotomized to perform the bivariate analyses. To create dichotomous variables for the instrument scores, the upper or lower quartile was used as the cut-off, as appropriate for the measure. High perceived stress was determined by the proportion of cases and controls with scores in the upper quartile, while low interpersonal support, low self-esteem, and low family hardiness were determined by the proportion of cases and controls with scores in the lower quartile. For the bivariate analyses, Fisher's exact test and Pearson Chi-square test were used as appropriate, to determine the statistical associations between case-control status and categorical variables (income, marital status, ethnicity, education, health behaviours, psychosocial variables). Where any cells had an expected value of less than 5, the Fisher's Exact Test was reported.

Chi-square analysis was used to obtain crude odds ratios and 95% confidence intervals for each of the associations. Odds are defined as the probability of an event occurring (i.e. inadequate prenatal care) to the probability of it not occurring (i.e. adequate prenatal care) (Polit, 1996). The odds ratio is the ratio of two such odds. After the bivariate analysis, variables with significant associations with inadequate prenatal

care were entered as predictors in a multivariate logistical regression model, using a forward entry stepwise approach. Adjusted odds ratios and 95% confidence intervals were reported. Adjusted odds ratios take into account the effects of all other variables included in the model. The independent predictors of inadequate prenatal care were obtained from the final model of the multivariate logistical regression analysis.

Ethical Considerations (for the Quantitative Component)

Ethics approval from the ENREB at the University of Manitoba was obtained for the secondary analysis of the quantitative data set from Heaman et al.'s (2006) study. The researcher was given an anonymized version of the dataset from Heaman et al.'s (2006) study, containing only data on the adolescent subjects. The dataset along with the analyzed data was kept in a locked cabinet, in a locked research office in the Faculty of Nursing, at the University of Manitoba. Secondary analysis data will be stored for 5 years, after which time it will be destroyed. All information was kept strictly confidential and no participants are identifiable through descriptive data, reports or articles produced from the study.

Qualitative Component

Design

Qualitative research is used when a problem or issue needs to be explored that cannot be answered with quantitative methods alone (Creswell, 2007). It is used when researchers need a complex, detailed understanding of the issue; and when researchers want to understand the context of the situation in which the participants live (Creswell, 2007). Qualitative research is important for providing necessary understanding in the use of findings from quantitative research (Grypdonck, 2006). The purpose of qualitative

research is not to generalize the information, but to elucidate the specific (Pinnegar & Daynes, 2006). Qualitative description will be used as the methodological design to guide the qualitative component of this study. It was chosen as it has been stated the method of choice when straight forward descriptions of phenomena are desired (Sandelowski, 2000). Qualitative description is not highly interpretive and involves the presentation of facts of a phenomenon in everyday language (Sandelowski, 2000). Researchers conducting qualitative description seek descriptive validity, or an accurate account of the phenomena that most study participants (including researchers) would agree upon (Maxwell, 1992). Researchers in this type of study also seek interpretive validity, or an accurate accounting of meaning attached to the events being studied that participants agree upon (Maxwell, 1992). The purpose of the qualitative component of this study was to describe the inner-city adolescent's view of social support and examine its relationship to prenatal care use.

Sample and Setting

This study aimed to answer the question of the importance of social support and its relationship to prenatal care use among adolescents in inner-city Winnipeg. Due to the specific target group, purposive sampling was used. Purposive sampling is typically used in qualitative research. The researcher chooses individuals and sites for study because they can purposefully give information and understanding to the central research problem (Creswell, 2007). Purposive sampling aims to obtain cases that are seen as being information-rich for the study's purpose (Sandelowski, 2000). Purposive sampling has been an effective method of recruitment when looking at social support among pregnant adolescents in other studies (Logsdon et al., 2005; Gallagher, 1999). The sample size in

qualitative content analysis has been historically dependent on data saturation as determined by the researcher (Creswell, 2007). Data saturation is defined as the point in analysis where no new themes or categories are emerging despite new data coming in (Speziale & Carpenter, 2007; Creswell, 2007). A total of 10 adolescents were interviewed in order to reach data saturation.

The criteria for participation in the qualitative component of this study included pregnant adolescents less than or equal to 19 years of age, English speaking, and living in one of the 8 inner-city neighbourhoods of Winnipeg, Manitoba. Adolescents were interviewed in the later phase of the third trimester (> 35 weeks gestation). Adolescents who received either adequate or inadequate prenatal care were approached. Participants were recruited from an adolescent pregnancy clinic at the Health Sciences Centre, located in inner-city Winnipeg.

Data Collection

Ethical approval was obtained from the Education/Nursing Research Ethics Board (ENREB) at the University of Manitoba and from the research review board at Health Sciences Center. Once these two review boards granted approval, the researcher notified the nursing staff about the new study being conducted, in a one page summary. The researcher went to the Health Sciences Centre site on clinical days (Tuesday mornings and Wednesday afternoons). Staff were asked to approach all eligible participants to determine their interest in learning more about the study. A script was provided to staff, asking the adolescents about their interest to participate (Appendix D). Upon receiving permission from the teen the researcher approached the teen with an explanation about the study, and provided an opportunity for the potential participant to ask any questions.

(Script for researcher is in Appendix E). If the adolescent agreed to participate, she was asked to sign the consent form (See Appendix C). The consent form described the data collection methods, participant rights, the researcher's contact information, and details pertaining to the \$10 honorarium.

Data collection consisted of an open-ended interview that was audio-tape recorded. A mutually agreeable time and place was established to conduct the interviews. Interviews took place in a quiet location free from distraction, as this is more conducive to open honest dialogue, and offered better audio-recording (Creswell, 2007). During these interviews probing techniques that extracted further explanation and depth of meaning to statements were done (Creswell, 2007). To stay on task and focused, the researcher used a semi-structured interview guide while conducting the interviews (See Appendix G). The interview ended after the participant was offered time to make final statements, ask questions or express concerns (Creswell, 2007). Following the interview, the participant was asked to complete a short demographic questionnaire to collect data on age, education level, income level, family situation, and racial/ethnic background (See Appendix F). Immediately following the interview, field notes were taken to capture pertinent information that was not captured by the audio-tape recording. The audiotapes were transcribed verbatim by the researcher, and checked for accuracy.

Data Analysis

Qualitative content analysis in nursing research has been applied to many different types of data, and to different depths of interpretation (Graneheim & Lundman, 2004). According to Graneheim & Lundman (2004), content analysis of interviews involves the reading through of the interview transcript several times to obtain a sense of

the whole. The next step is to extract pieces of the text that pertain to the question, to form the unit of analysis (Graneheim & Lundman, 2004). Knowledge generated from the content analysis is based on participants' unique perspectives and grounded in the actual data (Hsieh & Shannon, 2005). The analysis techniques are structured to capture the complexity of the participants' experiences (Hsieh & Shannon, 2005). The advantage of the conventional approach to content analysis is gaining direct information from study participants without imposing preconceived categories or theoretical perspectives (Hsieh & Shannon, 2005). With a conventional approach to content analysis, relevant theories or other research findings are addressed in the discussion section of the study (Hsieh & Shannon, 2005). The text is then divided into meaning units that are condensed, and the condensed meaning units are abstracted and labeled with a code (Graneheim & Lundman, 2004). The whole context is considered when condensing and labeling the codes. The codes are then compared based on differences and similarities, and possibly further broken down into categories and sub-categories if needed for better organization (Graneheim & Lundman, 2004). Finally an underlying meaning that is labeled as the *theme* is stated (Graneheim & Lundman, 2004). To prepare for reporting the findings, exemplars for each code and category are identified from the data. Identification of the relationships between categories and subcategories that are discovered are stated (Hsieh & Shannon, 2005). The researcher is considered the tool in the data analysis stage (Creswell, 2007), and having one person responsible for the data analysis increases the study's internal consistency (Speziale & Carpenter, 2007). Member checking was done throughout the interview by asking the participant to elaborate or clarify information to increase understanding. This is seen as a way to verify or confirm the reality that was

interpreted is along the same lines as their own (Graneheim & Lundman, 2004; Sandelowski, 1993, 1998). The computer software package NVivo (Copyright QSR International Pty Ltd) was used to manage the data. Descriptive statistics were used to summarize demographic information.

Trustworthiness

Trustworthiness is what every researcher is aiming to attain in their study, through specific measures. Credibility and dependability have been used to describe certain aspects of trustworthiness in qualitative description (Graneheim & Lundman, 2004). Credibility is found in the focus of the study and pertains to the choice of participants, selecting an appropriate research method, and collecting enough data to answer the research question (Graneheim & Lundman, 2004). Participants for the qualitative study were from an appropriate neighbourhood postal code and age category. The goal was to achieve a mix of interviews from teens who received adequate and inadequate prenatal care by using purposive sampling. However only teens who received adequate prenatal care were recruited. Data collection ceased at 10 interviews.

Credibility is also defined as: making sure the participant's voice is heard, the participants feel free to speak, and the participant's views were accurately presented (Milne & Oberle, 2005). This was checked throughout the open-ended interviews. Participants were reminded throughout the interview that information shared was confidential and to speak freely; as well as reiterating key points made for clarity and accuracy of their comments. Another important procedure in keeping the data participant driven, was keeping the interview guide flexible (Milen & Obele, 2005). This allowed the participants to decide what was important to them, as well as allowing them to share their

stories in a comfortable way. This creates trust between the interviewer and interviewee; and is especially important when discussing sensitive issues (Milne & Oberle, 2005).

Probing is another important strategy that was used to increase the trustworthiness. Probing is a method to gain more understanding and depth regarding the concept of interest. It is done by paying close attention to cues from the participant that she might have something further to share or say (Milne & Oberle, 2005).

Validity was enhanced by word-for-word transcription of taped interviews, done by the researcher. These transcriptions were later checked for accuracy by listening to the transcript and ensuring transcription was verbatim. This is also considered a method of ethical integrity (Milne & Oberle, 2005). Nonverbal communication was noted by taking field notes immediately after the interviews.

Content analysis is the most common form of analysis in qualitative description (Sandelowski, 2000), and was used in this study. Codes are defined by meaning units, which are derived from the data. An illustration of how meaning units were defined, coded, condensed and interpreted; otherwise known as a decision audit trail, can increase the credibility of the study (Graneheim & Lundman, 2004). This was included as part of the methods section of the qualitative component.

Ethical Considerations (for the Qualitative Component)

Ethics approval was obtained from the ENREB at the University of Manitoba. Ethical considerations included voluntary participation; if adolescents choose not to participate, their care was not affected in any way. A clear description of the nature of the study and estimated length of time to participate was provided, and time to ask any questions pertaining to the study was given. Potential subjects were not coerced to

participate, and they were made aware of their rights as a participant, such as the right to voluntarily withdraw from the study at any time, without penalty.

Confidentiality was protected by not placing any names on the interview transcripts or demographic questionnaires. Only the primary investigator and her thesis advisor had access to the demographic information. Participants were informed that all information shared would be kept confidential with the exception of reporting child abuse or neglect, which is mandatory in accordance with Manitoba law. All participants were offered a summary of the study findings once available.

Participants were assigned a numeric code with corresponding names kept in a list stored in a locked file cabinet. This list was only accessible to the researcher and her thesis advisor. Participants under 18 years old were assessed to determine if they are an emancipated minor, at the discretion of the researcher. The researcher determined this based on whether the adolescent had in fact been making her own legal decisions. If it had been determined that a parent or guardian had been involved in all other decision making then the parent or guardian would have been asked to sign the consent form, and assent obtained from the minor, as stated in the Tri-Council Policy Statement (1998). The interviews did not take place until informed consent was obtained.

Once the interview was completed a \$10 honorarium was given to the participant. This honorarium was not to be used as a method of coercion; but rather as a way of showing appreciation for their participation in the study.

Chapter 5: Results

This chapter will present the results from both the quantitative and qualitative component of the study. The quantitative component includes descriptive analysis of demographic characteristics and instrument scores for the study subjects, and an analysis of differences in motivators, facilitators and barriers to PNC use among cases and controls. In addition, a bivariate logistic regression analysis of factors associated with inadequate PNC is presented using crude odds ratios, followed by a multivariate logistic regression analysis to obtain a final model with adjusted odds ratios. The qualitative data describes demographic characteristics of the participants, as well as themes and categories arising from content analysis of the interview transcripts.

Quantitative Component

Demographic Characteristics

Demographic characteristics of the study subjects are shown in Table 1. The larger dataset of 620 women contained 92 adolescents which comprised the subjects for this secondary analysis. Of the 92 adolescents, 50 received adequate PNC and were designated as controls, while 42 received inadequate PNC and were designated as cases. The majority of adolescents (76.8%) delivered at Health Sciences Centre, while the remainder delivered at St. Boniface General Hospital. The majority of controls and cases were 16 years of age and older, with the largest age category of controls (40.4%) and cases (41.9%) being 19 years old. The majority of the sample (92%) came from 5 of the 8 inner-city neighbourhoods, Inkster B (n=10), Point Douglas A (n=17), Point Douglas B (n=26), Downtown A (n=15), and Downtown B (n=17).

More cases (69.05%) than controls (46.0%) reported being “single-never married”

as opposed to being “married/common-law” ($\chi^2=4.934$, $p=.026$). When asked which race/ethnicity the teen belonged to, 59.6% of controls and 88.4% of cases identified themselves as Aboriginal ($\chi^2=9.519$, $p=.002$), while 25% of controls and 9.3% of cases described themselves as White. Only 2 controls and 0 cases reported being born outside Canada and 11.5% of controls reported belonging to a minority. All participants were English speaking. The majority of the sample came from 5 of the 8 inner-city neighbourhoods, Inkster B (10), Point Douglas A (17), Point Douglas B (26), Downtown A (15), and Downtown B (17). More controls than cases were primipara (98.0% vs 52.4%, $\chi^2=26.966$, $p<.001$).

More than a third of controls (36.5%) and cases (37.2%) lived in houses, while 30.8% of controls and 18.6% of cases lived in apartments. Many controls (34.6%) and cases (55.8%) rented their own dwelling while 42.3% of controls and 2.3% of cases were living with friends or family. There was no significant difference in the proportion of controls and cases with less than high school ($\chi^2=3.110$, $p=.078$). When asked about combined annual household income (before taxes and deductions), significantly more cases (91.2%) than controls (67.5%) reported an income of less than \$30,000 ($\chi^2=6.079$, $p=.014$).

Table 1. Demographic characteristics of cases and controls

Characteristic	Controls n=50 n (%)	Cases n=42 n (%)
Age Group		
14 years	0 (0.0)	1 (2.4)
15 years	3 (6.0)	1 (2.4)
16 years	10 (20.0)	5 (11.9)
17 years	10 (20.0)	7 (16.7)
18 years	6 (12.0)	10 (23.8)
19 years	21 (42.0)	18 (41.9)

Education		
≤ 9 years	16 (32.0)	20 (47.6)
10 years	9 (18.0)	12 (28.6)
11 years	15 (30.0)	4 (9.5)
12 years	7 (14.0)	5 (11.9)
≥ 13 years	3 (6.0)	1 (2.4)
Race/Ethnicity		
White	13 (26.0)	4 (9.52)
Filipino	1 (2.0)	0 (.0)
SouthAsia (EastIndia, Pakistani, Punjabi,Sri Lanka)	1 (2.0)	0 (.0)
South East Asia (Cambodia, Indonesia, Laotian, Vietnamese	1 (2.0)	0 (.0)
Aboriginal (Inuit,Metis, North American Indian)	31 (62.0)	38 (90.5)
Other	3 (6.0)	0 (.0)
Marital Status		
Married	1 (1.9)	1 (2.3)
Common-law	26 (50.0)	21 (27.9)
Single-never married	23 (44.2)	29 (67.4)
Divorced/Separated	0	0
Neighbourhood		
River East A	2 (3.8)	2 (4.7)
Seven Oaks A	1 (1.9)	3 (7.0)
Inkster B	6 (11.5)	4 (9.3)
Point Douglas A	10 (19.2)	7 (16.3)
Point Douglas B	16 (30.8)	10 (23.3)
Downtown A	6 (11.5)	9 (20.9)
Downtown B	9 (17.3)	8 (18.6)
River Heights B	2 (3.8)	0 (0.0)
Annual Household Income		
Under \$10,000	19 (47.5)	23 (67.64)
\$10-19,999	4 (10.0)	5 (14.70)
\$20-29,999	4 (10.0)	3 (8.82)
>\$30,000	13 (32.5)	3 (8.82)

Comparisons of interval level demographic variables for cases and controls are shown in Table 2. Over half of the controls (65.3%) and almost three-quarters of the

cases (72.1%) had moved at least once during the last year. However this was not a significant difference between the two groups. About the same number of controls (65.4%) and cases (62.8%) had an incomplete high school education, however the total years of formal education was significantly different, with controls having completed more education. Mean gestational age at birth was not significantly different between controls and cases (39.38 vs. 40.24 wks). The mean maternal age was roughly the same for controls and cases (17.64 years vs. 17.86 years). The mean gestational age at the first visit for controls was 9.79 weeks, while the mean for cases was 19.79, according to maternal report.

Table 2.
Comparison of Interval Level Demographic Variables Between Cases and Controls

Variable	Controls Mean (SD)	Cases Mean (SD)	t-test	P
Birth weight (grams)	3490.14 (489.83)	3392.05 (486.45)	.960	.340
Gestational age at birth	39.38 (1.45)	40.24 (1.19)	-.712	.480
Gestational age at first visit according to health record	10.34 (3.71)	22.94 (6.94)	-9.45	<.001
Gestational age at first visit according to maternal report	9.79 (2.98)	19.79 (8.36)	-6.67	<.001
Maternal age	17.64 (1.37)	17.86 (1.30)	-.78	.480
Years of formal education	10.40 (1.38)	9.69 (1.42)	2.41	.018
Total number of PNC visits	10.84 (3.66)	2.71 (1.29)	14.44	<.001
Moves within the last 5 years	4.02 (4.78)	3.63 (3.09)	.462	.645

Pregnancy and Birth Outcomes

Pregnancy and birth outcomes are shown in Table 3. Slightly more cases (93%) than controls (80.8%) had a spontaneous vaginal delivery. More controls (65.4%) than cases (41.9%) were primiparas. There were only 2 assisted vaginal deliveries among the controls and 3 among the cases. Only 2 controls had cesarean sections. Medical history prior to pregnancy, 8 controls and 1 case had a mental health issue. Of the 8 controls, 7 had depression with 1 attempted suicide, and the 1 case was also an attempted suicide.

Table 3. Pregnancy and Birth Outcomes

Health Record Data	Controls n=50 n (%)	Cases n=42 n (%)
Type of Delivery:	42 (80.8)	40 (93.0)
Spontaneous vaginal delivery		
Assisted vaginal delivery-forceps	1 (1.9)	1 (2.3)
Assisted vaginal delivery-vacuum	1 (1.9)	2 (4.7)
Elective cesarean section	1 (1.9)	0 (0.0)
Emergency cesarean section	1 (1.9)	0 (0.0)
Gravida (post delivery):		
1	34 (65.4)	18 (41.9)
2	14 (26.9)	19 (44.2)
3	1 (1.9)	5 (11.6)
4	2 (3.8)	1 (2.3)
5	1 (1.9)	0 (0.0)
Para (post delivery):		
1	49 (94.2)	22 (51.2)
2	1 (1.9)	16 (37.2)
3	0 (0.0)	5 (11.6)
4	1 (1.9)	0 (0.0)
Previous miscarriages:		
1	6 (11.5)	5 (11.6)
4	1 (1.9)	0 (0.0)
Therapeutic abortions:		

1	10 (9.2)	1 (2.3)
2	1 (1.9)	0 (0.0)
Stillbirths	0 (0.0)	1 (2.3)
History prior to pregnancy:		
Diabetes	1 (1.9)	0 (0.0)
Kidney disease	1 (1.9)	1 (2.3)
Asthma	11 (21.2)	5 (11.6)
Thyroid condition	3 (5.8)	0 (0.0)
Mental health condition	8 (15.4)	1 (2.3)
Depression	7 (13.5)	0 (0.0)
Suicide attempt	1 (1.9)	1 (2.3)

Prenatal Care

Of the 42 cases, 7 reported no PNC at all, while the remainder had at least some PNC. All of the controls received PNC, consistent with the definition of adequate PNC. Fewer controls than cases reported difficulty arranging their first PNC visit (10.2% vs. 28.6%, $\chi^2 = 4.696$, $p = .030$). When teens were asked how many days it was between the day they called to make their appointment until the day of their actual appointment, 74% of controls and 64.5% of cases received their first visit within two weeks time. The majority of subjects (88.5% of controls and 67.4% of cases) received PNC from an obstetrician/gynaecologist, while 36.5% of the controls and 18.7% of cases saw a family physician at some point during their pregnancy; only a few adolescents reported receiving PNC from a midwife or nurse practitioner. Controls were primarily seen at a private physician's office or outpatient department of a hospital for their care. Six controls reported attending Mount Carmel Clinic, and one reported attending Klinik (both are inner-city community health centres). Cases primarily went to a private physician's office as well as the outpatient department of a hospital. Two cases reported attending Mount

Carmel Clinic and another two reported attending the Hope Clinic. More controls (76.9%) than cases (37.2%) reported being 'very satisfied' with the care they received. No controls reported being 'dissatisfied' with their PNC, compared to 9.3% of cases. When asked, 'did you visit an emergency room or obstetrical triage department during your pregnancy for a problem related to your pregnancy?', 64.0% of controls and 38.1% of cases said 'yes'. More controls than cases took part in a Healthy Baby program (60.0% vs 23.8%). More controls (36.0%) than cases (7%) attended childbirth education/prenatal classes during their pregnancy. When asked if they had a regular health care provider the year prior to getting pregnant, 46.2% of controls and 34.9% of cases said 'yes'. Of those who reported 'yes', family physicians were the most commonly reported regular health care provider. Participants were asked 'thinking back just before you got pregnant, how did you feel about becoming pregnant?', 36.4% of controls and 27.9% of cases wanted to become pregnant sooner or right then. About the same percentage of controls (19.2%) and cases (20.9%) were trying to get pregnant when they became pregnant. More cases (74.4%) than controls (44.2%) felt unhappy or unsure when they found out they were pregnant.

More controls (90.4%) than cases (74.4%) reported being encouraged to attend PNC. The majority of controls reported that either their boyfriend/husband (30.8%) or mother/father (28.8%) were the most encouraging person for them to attend PNC. Cases also reported that their mother/father (41.9%) and boyfriend/husband (14%) were the most encouraging. Neither cases nor controls had a preference for the race of their PNC provider; however half of controls (54.0%) and cases (50.0%) preferred a female provider.

Psychosocial Variables

Mean scores for cases and controls on a variety of psychosocial instruments were compared using a t-test for independent groups. The results are summarized in Table 4. Due to an uneven distribution of scores (i.e. the scores were skewed), quartiles were identified for all instrument scores, and cut-offs were selected for high and low scores as appropriate to the measure. The proportion of cases and controls falling into the upper quartile (for perceived stress) or lower quartile (for self-esteem, interpersonal support, and family hardiness) was determined.

Cohen's Perceived Stress Scale:

Scores ranged from 0 to 13. There was no significant difference in the perceived stress score between cases and controls (M 5.88 vs 5.44, $t=.688$, $p=.494$). The upper quartile was used as the cut-off to determine a high stress score, defined as ≥ 8 . There was no significant difference in the proportion of cases and controls having a high stress score (33.3% vs 26.0%, $\chi^2 = 0.59$, $p = .442$).

Rosenberg's Self-Esteem Scale:

Scores ranged from 16 to 40. There was no significant difference in self-esteem score between cases and controls (M 30.55 vs 31.14, $t=.55$, $p=.588$). The upper quartile was used as the cut-off to determine a low self-esteem score, defined as ≤ 28.00 . There was no significant difference in the proportion of cases and controls having a low self-esteem score (33.3% vs 26.0%, $\chi^2 = .59$, $p = .442$).

Interpersonal Support Evaluation List:

Scores ranged from 29 to 60. There was no significant difference in interpersonal support scores between cases and controls (M 51.32 vs 53.18, $t=1.44$, $p=1.55$). The upper

quartile was used as the cut-off to determine a low social support score, defined as ≤ 49.00 . There was a significant difference in the proportion of cases and controls having a low social support score (36.6% vs 18.0%, $\chi^2 = 4.01$, $p = .045$).

Social support was further dichotomized into tangible, appraisal and belonging support. A t-test showed no significance between cases and controls with regards to scores within individual subcategories.

Family Hardiness Index:

Scores ranged from 20 to 58. There was no significant difference in family hardiness scores between cases and controls (M 46.19 vs 49.96, $t=.50$, $p=.617$). The upper quartile was used as the cut-off to determine a low family hardiness score, defined as ≤ 42.00 . There was no significant difference in the proportion of cases and controls having a low family hardiness score (31.0% vs 22.0%, $\chi^2 = .95$, $p = .330$).

Abuse:

When teens were asked if they had ever been emotionally or physically abused by their partner or someone important to them, 21.4% of controls and 21.4% of cases said 'yes' ($\chi^2 = .014$, $p=.907$). When asked if they were hit, slapped, kicked or otherwise physically hurt by someone during their pregnancy 14.3% of controls and 11.9% of cases reported 'yes' ($\chi^2 = .112$, $p=.738$). Three controls reported the perpetrator to be their boyfriend, while 4 controls and 5 cases reported the perpetrator to be a stranger or another person.

Table 4. Instrument Scores

Instrument	Controls Mean (SD)	Cases Mean (SD)	t-test	P
Perceived Stress Score	5.44 (2.86)	5.88 (3.22)	-.688	.494
Self-Esteem Score	31.14 (5.45)	30.55 (4.67)	.55	.585
Interpersonal Support Score	53.18 (4.94)	51.32 (6.98)	1.44	.155
Tangible Support Subscale	17.66 (2.90)	16.90 (2.28)	1.40	.166
Appraisal Support Subscale	17.36 (2.43)	17.12 (2.37)	.470	.639
Belonging Support Subscale	18.16 (1.96)	17.21 (3.01)	1.75	.085
Family Hardiness Score	46.96 (6.20)	46.19 (8.48)	.50	.617

Comparison of Barriers, Motivators and Facilitators for Use of Prenatal Care

Chi square tests were conducted to test for significant differences in proportions in the two independent groups for motivators, facilitators and barriers to PNC.

Motivators

Table 5 lists motivators to receiving PNC along with their level of significance. Participants were asked, “Did you get prenatal care....”, followed by nine potential motivators. Significantly more controls than cases were motivated by the following factors to attend PNC: to learn to protect your health (86.0% vs 63.9%, $p=.017$); to talk to someone about your pregnancy (84.0% vs 47.2%, $p<.<001$); to learn better health habits (92.0% vs 69.4%, $p=.009$); to learn about labour and delivery (83.7% vs 55.6%, $p=.004$). There were no significant differences in the remaining motivators. It is worth noting that 100% of controls and 91.7% of cases responded that, ‘to have a healthy baby’ was a

motivator to attend PNC.

Facilitators

Participants were asked, “Was it easier for you to get prenatal care because...”. Differences in response for facilitators and their significance levels are reported in Table 6. A significantly higher proportion of controls than cases identified the following factors as facilitators: “It was easy to get to the appointment using public transportation” (81.8% vs 54.8%, $p=.012$), “The clinic hours were convenient for you”(90.0% vs 66.7%, $p=.008$), and “Flexible work schedule to attend appointments” (80.6% vs 44.4%, $p=.043$).

Barriers

Barriers to PNC were obtained by asking participants, “Did you have difficulties in getting prenatal care because...” Their responses with significance levels are reported in Table 7. Significantly more cases than controls had the following responses, “You could not get an appointment” (30.8% vs 4.0%, $p=.001$), “You had to wait too long to get an appointment” (35.9% vs 12.0%, $p=.007$), “The clinic hours were not convenient for you” (30.8% vs 4.0%, $p=.001$), “You didn’t think you could communicate with the staff” (12.8% vs 0.0%, $p=.014$), and “You had transportation problems” (55.3% vs 10.2%, $p<.001$).

Barriers to PNC were further broken down into ‘personal beliefs’, by asking participants, “Did you avoid going for some of your prenatal care visits or not go for some of your prenatal care visits because...” Differences in responses along with their significance levels are reported in Table 8. Significantly more cases than controls gave the following responses, “You were afraid of or did not like medical tests and examinations” (34.1% vs 2.0%, $p<.001$), “You did not like needles or taking medicine”

(31.7% vs 6.0%, $p=.002$), “You have been dissatisfied with the care you received” (12.2% vs 0.0, $p=.016$), “You go to the emergency room or obstetrical triage unit when there is a problem with your pregnancy” (31.7% vs 10.0%, $p=.010$), “You did not know you were pregnant” (21.4% vs 2.0%, $p=.005$), “You did not think you needed prenatal care” (26.8% vs 2.0%, $p=.001$), “You can take care of yourself during pregnancy” (53.7% vs 12.0%, $p<.001$), “You get advice about pregnancy from family and friends” (63.4% vs 12.0%, $p<.001$), “You did not want to be examined by a man” (35.0% vs 8.0%, $p=.003$), “You did not want people to know you were pregnant” (14.6% vs 2.0%, $p=.043$), “The pregnancy was unplanned” (29.3% vs 12.0%, $p=.040$), “You were thinking of having an abortion” (29.3% vs 4.0%, $p=.001$), “You were worried about the risk of your baby being apprehended by CFS” (24.4% vs 6.0%, $p=.016$).

Information on barriers to PNC in the form of ‘personal issues’ was obtained from participants by asking, “Did you have difficulties in going for prenatal care because...” Differences in responses with their significance levels are reported in Table 9. Significantly more cases than controls gave the following responses, “You did not feel well” (56.1% vs 20.0%, $p<.001$), “Of family problems” (36.6% vs 2.0%, $p<.001$), “You had been under stress” (36.6% vs 4.0%, $p<.001$), “You were depressed” (17.1% vs 2.0%, $p<.021$), “You did not feel good about yourself” (8.80% vs 0.0%, $p=.038$), “Of personal problems” (29.3% vs 4.0%, $p=.001$), “You were not thinking straight” (22.0% vs 0.0%, $p<.001$), “You forgot your appointment” (92.0% vs 56.1%, $p=.001$), “You were moving a lot” (41.5% vs 4.0%, $p<.001$).

Transportation

Of the controls, 96.0% reported they could travel easily to their appointments,

while only 55.3% of cases reported easy travel ($\chi^2=21.165$, $p<.001$). All transportation methods used at least once by controls to attend PNC visits are listed from most to least: bus (65.4%), friend or family members car (40.4%), walked (23.1%), my own car (11.5%), taxi (7.7%). Methods of transportation used by cases are listed from most to least: bus (46.5%), walking (30.2%), friend or family member's car (20.9%), taxi (11.6%), my own car (2.3%).

Table 5. Motivators to Prenatal Care

Did you get prenatal care...

Reason	Controls n=50 n (%)	Cases n=42 n (%)	χ^2	P value
To learn to protect your health	43 (86.0)	23 (63.9)	5.73	.017
Because you were afraid that you would have problems during the pregnancy without prenatal care	32 (64.0)	17 (47.2)	2.40	.121
To talk to someone about your pregnancy	42 (84.0)	17 (47.2)	13.14	<.001
To learn better health habits	46 (92.0)	25 (69.4)		.009*
To learn about labour and delivery	41 (83.7)	20 (55.6)	8.10	.004
To have a healthy baby	50 (100.0)	33 (91.7)		.070*
Because your family wanted you to get prenatal care	17 (34.0)	16 (44.4)	.96	.326
Because your husband or boyfriend wanted you to get prenatal care	23 (46.9)	16 (44.4)	.05	.820
Because your friends wanted you to get prenatal care	8 (16.0)	5 (13.9)	.07	.787

Because your health care provider or social worker wanted you to get prenatal care	13 (26.5)	8 (22.2)	.21	.649
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*Where cells had an expected value <5, Fisher's Exact Test was reported

Table 6. Facilitators to Prenatal Care

Was it easier for you to get prenatal care because...

Reason	Controls n=50 n (%)	Cases n=42 n (%)	χ^2	P value
You got a ride to your appointment	16 (37.2)	12 (36.4)	.00	.940
You got free transportation	10 (22.7)	13 (41.9)	3.16	.076
You got help paying for transportation	11 (25.6)	12 (37.5)	1.23	.268
It was easy to get to the appointment using public transportation	36 (81.8)	17 (54.8)	6.39	.012
A family member or friend provided child care	1 (50.0)	11 (64.7)		1.000*
You got free child care	1 (50.0)	9 (56.3)		1.000*
You got help paying for child care	0 (.0)	1 (6.7)		1.000*
Child care was available near where you had your appointment	0 (.0)	6 (37.5)		.529*
Child care was available at the facility where you had your appointment	0 (.0)	2 (12.5)		1.000*
The clinic hours were convenient for you	45 (90.0)	22 (66.7)	6.95	.008
Flexible work schedule to attend appointments	29 (80.6)	4 (44.4)		.043*

*Where cells had an expected value <5, Fisher's Exact Test was reported

Table 7. Barriers to Prenatal Care

Did you have difficulties in getting prenatal care because...

Reason	Controls n=50 n (%)	Cases n=42 n (%)	χ^2	P value
You did not know where you could get prenatal care	10 (20.4)	14 (35.0)	2.38	.123
You could not get an appointment	2 (4.0)	12 (30.8)		.001*
You had to wait too long to get an appointment	6 (12.0)	14 (35.9)	7.18	.007
Your appointment was cancelled by the clinic	3 (6.0)	4 (10.5)		.459*
You did not like the attitudes of the staff	1 (2.0)	3 (7.7)		.315*
The hours at the clinic were not convenient for you	2 (4.0)	12 (30.8)		.001*
You didn't think you could communicate with the staff	0 (.0)	5 (12.8)		.014*
You had transportation problems	5 (10.2)	21 (55.3)	20.74	<.001
You had childcare problems	0 (.0)	5 (20.8)		.296
You could not get time off from work	4 (12.9)	1 (8.3)		1.00*
You had to wait too long in the waiting room to see your health care provider	11 (22.9)	13 (36.1)	1.75	.185

*Where cells had an expected value <5, Fisher's Exact Test was reported

Table 8. Barriers to Prenatal Care - Personal Beliefs

Did you avoid going for some of your prenatal care visits or not go for some of your prenatal care visits because...

Reason	Controls n=50 n (%)	Cases n=42 n (%)	χ^2	P value
You were afraid of or did not like medical tests and examinations	1 (2.0)	14 (34.1)		<.001*
You did not like needles or taking medicine	3 (6.0)	13 (31.7)		.002*
Generally, you do not like health care workers	1 (2.0)	1 (50.0)		1.000*
You have been dissatisfied with the care you received	0 (.0)	5 (12.2)		.016*
You go to the emergency room or obstetrical triage unit when there is a problem with your pregnancy	5 (10.0)	13 (31.7)	6.69	.010
You did not know you were pregnant	1 (2.0)	9 (21.4)		.005*
You did not think you needed prenatal care	1 (2.0)	11 (26.8)		.001*
You can take care of yourself during pregnancy	6 (12.0)	22 (53.7)	18.35	<.001
You get advice about pregnancy from family and friends	6 (12.0)	26 (63.4)	26.12	<.001
You did not want to be examined by a man	4 (8.0)	14 (35.0)		.003*
You did not want people to know you were pregnant	1 (2.0)	6 (14.6)		.043*
The pregnancy was unplanned	6 (12.0)	12 (29.3)	4.23	.040
You were unhappy about the pregnancy	1 (2.0)	5 (83.3)		.087*
You were thinking of having an abortion	2 (4.0)	12 (29.3)		.001*
You were worried about the risk of your baby being apprehended by CFS	3 (6.0)	10 (24.4)		.016*

*Where cells had an expected value <5, Fisher's Exact Test was reported

Table 9. Barriers to Prenatal Care - Personal Issues

Did you have difficulties in going for prenatal care because...

Reason	Controls n=50 n (%)	Cases n=42 n (%)	χ^2	P value
You did not feel well	10 (20.0)	23 (56.1)	12.70	<.001
Of family problems	2 (2.0)	15 (36.6)		<.001*
Of problems with your husband or boyfriend	1 (2.0)	5 (12.2)		.087*
You got beat up by your husband or boyfriend	0 (.0)	1 (2.4)		.456*
You had been under stress	2 (4.0)	15 (36.6)		<.001*
You were depressed	1 (2.0)	7 (17.1)		.021*
You did not feel good about yourself	0 (.0)	4 (9.8)		.038*
Of personal problems	2 (4.0)	12 (29.3)		.001*
You were not thinking straight	0 (.0)	9 (22.0)		<.001*
You forgot your appointment	11 (22.0)	23 (56.1)	11.19	.001
You were moving a lot	2 (4.0)	17 (41.5)		<.001*
You were/are homeless	0 (.0)	3 (7.3)		.088*
You were afraid of crime near your home or the clinic	1 (2.0)	2 (4.9)		.587*

*Where cells had an expected value <5, Fisher's Exact Test was reported

Bivariate Analysis

A bivariate analysis was conducted to explore the association between a variety of

independent variables and the dependent variable of inadequate prenatal care. The variables were dichotomized as appropriate for analysis (e.g. ‘yes’ versus ‘no’, ‘high score’ versus ‘low score’). See Table 10 for results of the bivariate analysis using logistic regression. The odds of receiving inadequate PNC were highest in those who were multipara (OR=44.55), identify as First Nations ethnicity (OR=4.71), smoked cigarettes during pregnancy (2.73), had an annual household income of <\$29,999 (OR=4.99) or <\$19,999/year (OR=3.45), were single or separated (OR=2.62), and had low interpersonal support (OR=2.62). For the subscales of the interpersonal support scale, only a low score on the Belonging subscale (OR=2.33) had higher odds of receiving inadequate PNC. Smoking during pregnancy also increased the odds of receiving inadequate PNC (OR=2.73).

Table 10. Factors Associated with Inadequate Prenatal Care: Results from the Bivariate Analysis Presenting Odds Ratios (OR) and 95% Confidence Intervals (CI)

Variable	Controls n (%)	Cases n (%)	OR	95% CI
Multipara*	1 (2.0)	20 (47.6)	44.55	5.62-353.16
First Nation ethnicity*	28 (56.0)	36 (85.3)	4.71	1.68-13.19
Smoked cigarettes during pregnancy*	25 (50.0)	30 (73.2)	2.73	1.12-6.61
Alcohol use during pregnancy	6 (12.0)	5 (11.9)	.99	.28-3.51
Paid job during pregnancy	17 (34.0)	8 (32.0)	.46	.17-1.20
Physically abused during the pregnancy	7 (14.3)	5 (11.9)	.81	.24-2.77
Involved in any local volunteer organizations	5 (10.0)	6 (14.3)	1.5	.42-5.31

Attend religious services at least once/month	5 (10.4)	5 (12.2)	1.19	.32-4.45
Annual income <\$29,999*	27 (67.5)	31 (91.2)	4.97	1.28-19.32
Annual income <\$19,999*	23 (57.5)	28 (82.4)	3.45	1.17-10.18
Education < High school	40 (80.0)	39 (92.9)	3.25	.83-12.70
Single*	23 (46.0)	29 (69.0)	2.62	1.11-6.18
No regular health care provider	22 (44.0)	15 (36.6)	1.36	.58-3.17
Unplanned pregnancy	32 (64.0)	31 (73.8)	1.58	.65-3.89
Unhappy about the pregnancy (including "not sure")	23 (46.0)	19 (45.2)	.97	.43-2.21
Low family hardiness score	11 (22.0)	13 (31.0)	1.59	.62-4.05
Low interpersonal score*	9 (18.0)	15 (36.6)	2.63	1.00-6.87
Low tangible support score	9 (39.1)	14 (60.9)	2.28	.87-5.98
Low appraisal support score	16 (48.5)	17 (51.5)	1.50	.64-3.56
Low belonging support*	15 (41.7)	21 (58.3)	2.33	.99-5.49
High perceived stress score	13 (26.0)	14 (33.3)	1.42	.58-3.50
Low self-esteem score	13 (26.0)	14 (33.3)	1.42	.58-3.50

*p<.05

Multivariate Logistic Regression Model

A multivariate logistic regression model was used to identify significant independent predictors of receiving inadequate prenatal care. Variables with evidence of significant associations with inadequate prenatal care from the bivariate analysis were

entered as predictors in a forward stepwise multivariate logistical regression model. Because of the small sample size, only four variables remained in the final model. The low income variable was not included in the final modeling process due to a high proportion of missing values. The final model with adjusted odds ratios and 95% confidence intervals is presented in Table 11.

The final model consists of four significant independent predictors of inadequate prenatal care, after adjusting for other factors in the model: being of First Nations ethnicity, being single, having low interpersonal support, and being multipara. The odds of receiving inadequate prenatal care were 4.15 times higher for First Nations adolescents compared to adolescents of other ethnicities, 4.44 times higher for single teens compared to married/common law teens, 4.47 times higher for teens with low social support scores, and 65.69 times higher for multiparous adolescents compared to those who were primiparous. These odds are adjusted for all other variables in the model. The large odds ratio for the multipara variable is likely due to the small number of multiparous teens in the control group.

Table 11. Factors Associated with Inadequate Prenatal Care: Final Model based on Multivariate Logistic Regression, Presenting Adjusting Odds Ratios (AOR) and 95% Confidence Intervals (CI)

Variables	AOR	95%CI	P value
First Nations Ethnicity	4.15	1.10-15.62	.036
Single	4.45	1.29-15.32	.018
Low Interpersonal Social Support	4.47	1.28-15.64	.019
Multipara	65.67	6.95-621.08	<.001

Summary

The first three research questions can be answered based on the results of the quantitative component of the study as follows:

1. There were several differences in motivators to attending PNC. Significantly more controls than cases reported that the following factors motivated them to get PNC: to protect their health, talk to someone about their pregnancy, learn better health habits and to learn about labour and delivery. Facilitators differed between groups with more controls than cases reporting it was easier to get to their appointment using public transportation, clinic hours were convenient for them, and they had a flexible work schedule to attend appointments. Barriers differed between groups with more cases than controls reporting they could not get an appointment, they had to wait too long to get an appointment, the hours at the clinic were not convenient for them, they did not think they could communicate with staff, and had transportation problems. Under the sub-heading of 'personal beliefs' with regards to barriers, more cases than controls reported missing appointments because they were afraid or did not like medical tests and examinations, did not like needles or taking medicine, had been dissatisfied with the care they received, would go to the emergency room or obstetrical triage unit when there was a problem with their pregnancy, did not know they were pregnant, did not think they needed PNC, felt they could take care of themselves during pregnancy, got advice about pregnancy from family and friends, did not want to be examined by a man, did not want people to know they were pregnant, the pregnancy was unplanned, they were thinking of having an abortion, they were worried about the

risk of their baby being apprehended by CFS. Under the sub-heading of ‘personal issues’ with regards to barriers, more cases than controls reported difficulty attending PNC because they did not feel well, of family problems, had been under stress, were depressed, did not feel good about themselves, of personal problems, were not thinking straight, forgot their appointment and were moving a lot.

2. Some demographic characteristics were associated with inadequate prenatal care. The mean age of the cases and controls did not differ. Controls had more years of formal education than cases; however, no significant difference was noted in the proportion with less than high school education. There were significantly more cases than controls who reported being First Nations. More cases than controls reported having an annual household income of <\$29,999; however low income was not included in the modeling process due to a high proportion of missing values. Significantly more cases than controls reported being single, and being multipara; both these factors remained in the final model.
3. When comparing mean group scores among the psychosocial variables of stress, self-esteem, social support and family hardiness, no significant differences were noted. However, there was a significant difference in proportions of cases and controls with low social support. In the final logistic regression model, low social support remained as a predictor for inadequate prenatal care.

Qualitative Component

This section of the Results chapter presents the findings that emerged from the analysis of the interviews with 10 pregnant adolescents residing in Winnipeg. Recruitment took place between mid May and early September of 2010. The findings are

organized into 4 major themes, each with their own categories. The themes and categories are illustrated using the quotations from the pregnant adolescents. The unique circumstances, experiences and lives of these adolescents are presented and described. Social support is defined and described by each pregnant teen as she experienced it throughout her pregnancy. Social support is an important concept to understand during pregnancy as it links women into crucial resources that are necessary to attain the best possible outcomes for the mother, baby, and society. The objective of the qualitative component of the study was to examine how pregnant adolescents who reside in inner-city Winnipeg define social support during their pregnancy, and to explore how social support influences the use of prenatal care by inner-city adolescents in Winnipeg. Questions were also asked about barriers, motivators and facilitators to PNC, to elaborate on the responses obtained in the quantitative section, in keeping with the mixed methods design.

Demographic Characteristics

Ten pregnant teenagers were recruited through a Teen Pregnancy Clinic in the Women's outpatient department, at the Health Sciences Centre. The women ranged in age from 14-18 years, with a mean age of 16 years (See Table 12 for age of participants).

Table 12. Age of Participants

Age	Frequency
18	1
17	3
16	2
15	3
14	1

Only one teen was a multipara; the rest had no previous children. Three teens

were Gravida 2, Para 0, while the remainder were Gravida 1 Para 0. None were married or living common-law. Education levels varied, as well as enrolment in an age appropriate grade. Highest grades attained varied from grade 8-10, with seven teens not enrolled in an age appropriate grade. All teens were either enrolled in school at the time of the interview or were on summer holidays with plans to return to school in the coming Fall. Please see Table 13.

Table 13. Education Level of Participants with Age Appropriateness

Highest Grade Completed	Enrolled in Grade...	Age Appropriate Level
10	11	Yes
10	11	No
8	9	No
9	10	Yes
8	9 for the Fall	No
8	9 for the Fall	No
8	9 for the Fall	Yes
8	9 for the Fall	No
8	9 for the Fall	No
10	11 for the Fall	No

All the teens were living in inner-city neighbourhoods except one during their pregnancy. This was due to a period of slow recruitment. Please see Table 14 for neighbourhood breakdown.

Table 14. Neighbourhood Breakdown

Neighbourhood	Frequency
Downtown A	4
River East A	2
St. James/Assiniboia	1
Point Douglas A	1
Point Douglas B	2

Race/ethnicity varied among the teens. Only one teen had immigrated to Canada from Africa at a young age. All spoke and read English. (See Table 15).

Table 15. Race/ethnicity of Participants

Race	Frequency
Aboriginal-First Nations	3
Aboriginal-Metis	4
Caucasian	2
African	1

All participants were interviewed at 35 weeks gestation or older. The gestational age ranged from 35 to 41 weeks, with a mean gestational age of 36.5 weeks. All participants received adequate prenatal care. Gestational age at the first visit ranged from 5-13 weeks, with a mean gestational age of 10.3 weeks. The number of PNC visits at the time of the interview ranged from 8 to 14 visits, with a mean of 10.2 visits.

All the teens were seen by an obstetrician at some point during the pregnancy. Three teens reported receiving some of their PNC from a family physician, and two teens reported having a doula. None of the teens were working in any part-time jobs, nor could they accurately estimate annual household income. However, it was apparent in the interviews that low financial resources were an issue for all the teens.

Life Circumstances of Participants

All the teens spoke of a chaotic life before becoming pregnant. This was defined as living in unstable environments, being in and out of foster care, being raised in low income single parent homes, suffering physical or emotional abuse, and substance abuse among the teens. Of all the teens, eight reported alcohol and/or substance abuse prior to becoming pregnant. Of those eight, two reported parents who abused alcohol themselves.

Living situations were unstable or unusual during the pregnancy. None of the teens were living in a conventional nuclear family unit. The parents were either living in separate dwellings or very little was known about them at all. None of the teens had the same living situations. One was previously living with her parents until she became pregnant and then was placed in foster care. Another was living with her dad and brother. Another was living in her own apartment, arranged through Child and Family Services. One was living mainly at Villa Rosa (a group home for pregnant teens), and near the end of her pregnancy was moved to foster care. Another girl was living with her mother and grandmother. One teen was living with her mom and sister, along with her mom's friend and son. Another was living with her grandma, grandpa and three cousins; while one was living in foster care and then moved into Villa Rosa. The final teen had been living with her chronically ill aunt. Once the teen became pregnant, she was moved in with her aunt's friend, husband and son. Some teens shared stories of physical or emotional abuse. Seven of the teens spoke of having poor or distant relationships with a parent prior to becoming pregnant. This was defined as either 'not getting along,' or not being involved in the teen's life.

All the teens went through some kind of lifestyle change once discovering they were pregnant. This was mainly defined as a refocusing of priorities. It included quitting drugs and alcohol, taking responsibility and focusing on the future of being a parent or single parent. All the teens who reported using alcohol and/or drugs prior to becoming pregnant had all quit either just prior to discovering they were pregnant, or immediately following discovery of their pregnancy.

Themes

Data were analyzed to discover themes and categories that revealed the social situations of the ten pregnant teens, living primarily in inner-city Winnipeg. Interviews were transcribed and analyzed for reappearing codes. Codes with similar meanings were grouped into categories, and categories were subsequently grouped into final themes. The transcripts were analysed by looking for four different forms of social support; material, emotional, informational and comparison.

Themes

I. Material Support: Meeting Daily Needs

“Mom”

Child and Family Services

Friends

II. Emotional Support: Overcoming the Fear

“Mom”

Baby’s Father

Friends

Child and Family Services

Obstetrician

III. Informational Support: Knowledge is Power

PNC Appointments

“Mom”

Child and Family Services

IV. Unsupportive Behaviour

Baby's Dad

Child and Family Services

Health Care Providers

"Mom"

Material Support: Meeting Daily Needs

All the teens had daily needs. None of them worked and all were dependents of someone else. All the teens described receiving material support in the form of tangible items, transportation to PNC visits, facilitating PNC appointments and facilitation of academic attainment. Tangible items were primarily defined as money for the needs of the teen and unborn baby (accommodation, food, diapers, formula, baby stroller, crib etc.) or the actual items themselves.

R: *So tell me how your mom has been supportive with you throughout the pregnancy?*

P6: *Well pretty much she got everything for me and like second hand that helped out a lot like um Kijiji, it's a used site where people sell stuff, that's helped out a lot because like you know you get things like brand new pretty much just a little bit used for like real cheap, so like she's pretty much got everything you know.*

Half the teens used financial support from the Healthy Baby Prenatal Benefit Program offered to expectant mothers with low income. This was a maximum allowance of \$81.41/month offered through Healthy Child Manitoba under the provincial government. Its intended use is for the purchase of healthy food during pregnancy which is what the teens reported using it for.

P8: *But like now since I get my monthly cheques from Healthy Baby and then I usually spend it on food, that's what we need here, is like what my vegetables my fruits and all that. Like anything I need like my little munchies I need...I'll get either a jug of milk for the family or anything and all that. Like I'll help out with them too. I spent most of my money on groceries with them.*

Eight teens mentioned receiving assistance with transportation to their PNC visits.

This was defined as reimbursement for bus passes, paying for bus passes or receiving rides to their appointment.

P9: Um my boyfriend buys me bus passes monthly and I get the receipt and give it to my social worker outside of Villa Rosa [group home for pregnant teens] and she reimburses the money.

Seven teens mentioned how someone facilitated their PNC appointments for them. This was defined by booking the appointments, encouraging attendance, setting up the first appointments, or rebooking missed appointments.

P10: Oh yeah my auntie (laughs). Like when I miss an appointment she's like they call and she's like 'did you miss an appointment today?!' and 'oh yeah I guess so' cause I was sleeping and she's like 'Why danananananana! You should be going to your appointments!' (laughs). And it's like 'oh ok'. And then they just call or I call or she gets me to call and make a different appointment. But usually they call and say can she come in. Um when I miss my appointment they give me appointments in the morning and I hate waking up in the morning but I have to go cause my auntie wakes me up. Yeah.

The next most frequently mentioned form of material support was through facilitation of academic attainment. This was mentioned by seven of the teens. It was defined by either setting up off-campus programs or offering other forms of alternative education with flexible schedules that accommodated the pregnant teen.

P2: Ah I'm in something called the recovery program at [High school]. It's um my teacher's very very flexible and then I pretty much go, he just pretty much gives me the work and I go there if I have any questions or anything like that I head back to school. But pretty much I can just do it here at my house.

“Mom”:

The most frequently mentioned providers of material support were the teen's mother or maternal figure in the teen's life. Seven participants made references to this source. “Mom” could be biological, a long-term foster mother, grandmother or long-term family friend who has taken on the guardian role. Material support in the form of

facilitating PNC appointments, supplying material needs for the teen and unborn baby, as well as transportation to PNC appointments were the main forms mentioned.

P8: She helped me a lot. She got like this bassinet for me, she got the crib for me from the next door neighbours. She got a bunch of clothes from the next door neighbours for me cause I was so scared to even ask them. She got a tub, she got toys mostly a lot of stuff or cause she had the guts to even ask for them. And like I'll be like just there all scared and all that I wouldn't wanna like don't know who to ask and like don't know anything and all that.

Child and Family Services:

Although all pregnant teens must be contacted by Child and Family Services at some point during their pregnancy, they were only mentioned as a significant source of material support by 5 of the teens. This was described as financial support for the needs of the teen and unborn baby, being linked with valuable resources during pregnancy, being provided with safe accommodation and facilitating PNC appointments.

The teens were linked with resources such as a doula, a support worker, PNC classes, Villa Rosa and information on schools with daycares.

P3: So I guess CFS kinda helped me in a way, cause they made sure I went to all my appointments, like helped me make all my appointments and once they thought that they didn't have to call anymore to arrange them they made me call and me being shy I kinda like I still didn't know what to say to them even now when I make my appointments I get shy (laughs). I've been doing it for like a few months.

P9: ...and finally my social worker was like no we have to move you there [Villa Rosa], I think it's the best thing to do and you'll get lots of help and you need all the information and I was like 'Kay whatever I'll just go just to make you happy' (laughs).

Four teens reported receiving safe accommodation during the pregnancy from an agency, rather than family.

P3: So after I ended up in Marymound (resource for Child and Family Services involved youth) again, I ended up in a shelter after that, and I pushed and pushed my worker to like help me find me find a new place instead of like living in shelters cause I realised that living in shelters like I just felt like I could do

whatever I want, and then when I got my own place I felt like I guess independent that well I can't do whatever I want anymore, I'm pregnant. I guess they didn't have to worry about me running away or anything like that cause when they found out I was pregnant I quit drinking I quit smoking I quit doing drugs and they were really surprised how quick I quit.

Friends:

Friends were mentioned by 6 of the teens as a source of material support. This was mainly in the form of tangible items for mom and the unborn baby, as well as transportation to PNC visits.

P8: And like they'll be there for me they'll if I didn't have like money to buy lunch or if I didn't make lunch then they'll like either buy me a lunch and all that stuff. They'll do a lot for me.

Although the above three categories were the main sources of support, it is worth mentioning that the baby's dad, the baby's dad's mother, school staff and sisters were also mentioned as sources of support by a few of the teens.

Emotional Support: Overcoming the Fear

Upon discovering the teens were pregnant, they all mentioned one of their initial emotions was fear. The fear was somewhat defused by actions and comments made by people in the teens lives. Encouraging words and behaviour meant a lot to the teens. This consisted of defined by showing interest or concern over the pregnancy with questions about the pregnancy and PNC visits, showing excitement over the pregnancy, and attending PNC visits and prenatal classes with the teen.

P1: They [mom and sister] wanna make sure that baby's ok and I'm ok and just make sure everything's ok and what not.

P6: Um probably my mom like I'm really close to her she you know we talk about everything she's really supportive you know so, probably my mom. And I think she, yeah she came with me, so she comes with me every appointment so. It's good to have her around.

P7: *They (teachers) were good. If I needed, it was basically mostly the same with them, like if I needed someone to talk to I would talk to them, and they just all wanted to make sure I was doing the right thing. Not getting into trouble and they just wanted to make sure I was ok.*

R: *What do you mean doing the right thing?*

P7: *Like, like doing what I see was best I guess for the baby and myself. And not like doing drugs and drinking alcohol while being pregnant. And then they'd always ask me if everything was ok at home. Un hun.*

Reassuring words and behaviour were equally important to all the teens. This consisted of sympathetic or empathetic words, showing understanding and acceptance, comforting comments about the current situation and future, listening, and having someone to talk to about their concerns and problems.

P2: *Well he (teen's dad) said that he was like, 'don't worry, if you need anything at all I'll help you out so you can stay here as long as you like, don't worry about a thing', and he said, 'I'm not mad at you', he said, 'things happen' and yeah he's just been there financially and emotionally and you know, it's been very good.*

P1: *Ah he (teen's father) reacted ok I guess, with my first pregnancy he didn't talk to me for a week, but he was just ok with it he just kinda said you know 'whatever this is what you want it's up to you,' so he was fine with it, made me feel better.*

P3: *Well I didn't want my worker knowing, I was too scared. Scared that she was going to take it[baby] away and say I'm not mature enough, and my worker told me that I've matured since like I've been pregnant.....it felt nice to hear that.*

“Mom”:

Mom was mentioned by seven of the teens. Mom was the most frequently mentioned source of emotional support, and provided reassuring comments and behaviour.

R: *Right. And then what about your biological mom?*

P9: *Um basically the same thing, well she basically accepted it from the beginning and cause she's had lots of children, she's had like 12 or 13. I have 12 or 13 siblings and so (laughs), she's accepted it and um when I was telling her my sister and my mom [foster mom] were telling me to get an abortion she was upset about that.*

- P6: *Um I was just like 'mom you know like I think I'm pregnant I haven't got my period and I just feel weird.' And she's ["mom"] like 'well we should make an appointment.' It wasn't really like anything. Like I mean like she's not like 'oh my god!' you know. But she wasn't like happy about it's just she's accepting it because it's like already done you know, nothing she can do about it once it's already done (laughs) so.*
- P7: *It was after I was doing everything good and I met this one guy around my area and he was the first person that I've ever had sex with and we were dating for like 4 or 5 months before I even got pregnant. And I found out and, I told my mom over facebook (laughs). And she's, I was expecting her to be really mad and like not really hate me but just be really angry and not wanna talk to me for a while and stuff like that. But she was really understanding and actually like understood what I wasshe was there for me I don't know.*

Encouraging behaviour and comments were the next most mentioned form of emotional support from “mom”.

- R: *Is there anything that she says to make you feel better?*
 P5: *Ah not really, I feel better once I get a hug.*
- R: *And do any of your friend or family ask you about how the appointment went?*
 P10: *Yeah my auntie every single day. Or not every single day, every single time I come home from the appointment. 'What did the Dr. say? Is the baby growing? Is it like normal size blah blah blah. How much weight did you gain?', like, 'how much do you weigh now?' And stuff.*
- R: *And did anyone go with you to the Teen Clinic (community health centre), or did you go by yourself?*
 P7: *I went with my mom actually.*
 R: *With your mom?*
 P7: *Yeah because I told her that I thought that I was, not that I was for sure, so I asked her to come with me.*
 R: *How did you feel about her coming?*
 P7: *I felt better that she was there. I would've felt really scared if I went by myself.*

Baby's Father:

The baby's father was mentioned by 6 of the teens. Emotional support was shown by making reassuring and encouraging comments and behaviours. Reassuring comments and behaviours consisted of the baby's dad accepting the pregnancy and imminent parenthood, having the baby's dad to talk to and making comforting comments.

P2: *He took it really well. He said, 'whatever you wanna do I'll support you with it and I'm not gonna tell you to do anything, it's your body,' so yeah. He's very supportive.*

P7: *Um he was when I told him he was crying but not like sad crying. He was I don't know he was just so happy (laughs)...*

P4: *Ummmm listen, I guess that's all I ask him to do is listen. I don't really need cheering up I just need someone to talk to sometimes.*

Encouraging behaviour consisted of attending the PNC visits, and showing excitement and interest in the pregnancy.

P9: *Yeah from the beginning he's been going. Even if he's like worked cause he works midnight s now and even if he's worked and he'd get off work at 8 in the morning he comes all the way downtown, come pick me up and then we'd go to the Dr.'s appointments and so if he was tired he would still go, if he hasn't slept in a couple days he'll still go so he's very supportive.*

P5: *No. But he comes he comes with me when he listens to the baby's heart and stuff. He has a big smile on his face when he hears the baby's heart. Yep (smiling).*

Friends:

Friends provided encouraging and reassuring words and behaviour, consisting of showing concern or interest in the pregnancy, attending PNC visits and encouraging the teen to make healthy lifestyle choices.

P7: *But they like know like when I go out with them they don't do stuff (drugs) in front of me cause they know that obviously I can't do it and ah I don't wanna tolerate any of it anymore, so they have respect for that.*

P1: *My friend has come with me to a couple (PNC visits) and at the school and um none of my family has actually.....*

Reassuring words and behaviour consisted of having someone to talk to, comforting words about the situation, and accepting the pregnancy.

P1: *Ah she said to me she's like 'well you better keep it', and I started laughing and she said, 'no just kidding' (laughs). But we just talked about um just like ah I guess the situation and the scenario of what can happen and so, she also came with me to one of my counselling meetings as well so.*

P10: No like we go out to eat yeah (laughs). Yeah um no there's not much they can really do cause they're all still young and they don't really like know what to do but be supportive and there for you and give me advice when I need it like when I'm down. Yeah so. Yeah.

P3: There was a lot of emotions I was shocked and scared and happy and excited and she said that was normal, she went through the same thing.

Child and Family Services:

Child and Family Services social workers were mentioned by 4 of the teens as providing emotional support. This was shown by encouraging behaviour and comments, as well as reassuring behaviour and comments. Encouraging behaviour and comments consisted of showing interest or concern over the pregnancy with questions about the pregnancy and PNC visits, showing excitement over the pregnancy, and attending PNC visits and prenatal classes with the teen.

R: Who would you say was your biggest supporter for coming to prenatal care visit?

P3: My support workers.....They'd always encourage me to go when I was like, 'No I don't wanna go,' and, 'I think you should go.'

R: Yeah how did, how has the CFS worker been throughout your whole pregnancy?

P7: She was there a lot at first, just making sure everything was ok and what I was gonna do.

Reassuring comments and behaviour consisted of sympathetic or empathetic words, showing understanding and acceptance, comforting comments about the current situation and future, listening, and having someone to talk to about their concerns and problems.

R: What did she [CFS worker] do when she found out that you were pregnant?

P9: Just asked me like what I'm gonna do and if I planned anything out yet and how I feel. She didn't like say get an abortion, get an abortion she wasn't that type. She was more like she listened.

P4: It was fine, I just asked her if CFS had any plans to take my baby and she said no.

R: And that was the end of the conversation?

P4: *Un hun.*

R: *Did she give you any tips on things you could do to make sure that stayed the way it was?*

P4: *She said that I was I had how to put it she said, it was weird cause she said she was proud of me and that I was doing everything that I was supposed to do so I shouldn't worry.*

Obstetrician:

Six teens mentioned emotional support provided by their obstetrician. This was described as the comfort level the teens had with their obstetrician. It was defined as having a friendly attitude, the ability to easily approach the doctor with questions or concerns, feeling as though the obstetrician was taking time with them, and trusting their obstetrician.

P2: *Um I don't know I just find her very helpful and she ah any questions I have she answers them very thoroughly. She goes through everything with me and um yeah she doesn't skip a beat and I find her very friendly too.*

P3: *I like how she's really friendly. I like how she takes the time to explain things.*

P8: *Oh man when I first see her I end up having a smile. Cause I know like she's a doctor I could trust.*

The teen's father, school staff and grandmother were also mentioned by one or two of the teens. Their support was offered through encouraging and reassuring comments.

Informational Support: Knowledge is Power

Every teen mentioned receiving some form of informational support throughout the pregnancy. It was in the form of having questions or concerns related to the pregnancy, labour and delivery and the postpartum period answered. Pregnancy related information consisted of learning healthy behaviour during pregnancy, having the health of the teen and unborn baby assessed, learning about the health status of the teen and

unborn baby, and being connected to other informational resources such as Villa Rosa, a dietitian, public health nurse and prenatal classes.

- P8: Hmm I really don't know. I know I love to get checked. Like for the baby. Like even if the baby stops moving around a bit that's when I get nervous and all that stuff. And I'm like what am I supposed to do what am I supposed to do. And when I asked her (Obstetrician) she told me to at least get a little bit of sugar, then that's gets the baby moving. Yeah.*
- P6: Um....well I asked today like why I haven't been gaining weight if you know if that is a problem but she said that it's not because like you've like gained all the baby weight so like. Like here and there I have a couple questions, not really often cause like I ah I just basically go to my mom.*
- P1: Just to take it [prenatal care appointments]. It's fun you learn things about yourself and your child and so and it's safe and I guess comfortable just the fact that you know you're ok and your baby's growing and what your baby's up to and just interesting things.*

Information related to labour and delivery and the postpartum period consisted of information on signs of early contractions, receiving information on schools with daycares and alternative school programming, being linked with family resources for after the baby is born, breastfeeding information, parenting practicum and information on raising a baby.

- P9: And the stuff that I learnt here it'd be like about more about budgeting and nutrition, managing your money, cause I'm really bad with my money, and um different techniques to know your baby's language, I didn't know about that. It's the only thing I didn't really know and I thought it was just like you would know automatically kind of that. And I don't know they teach you different signs for your baby like if it's hungry, if it's bored, if it's happy, if it wants to play it teaches you like all of their emotions and all that so that's what I thought that was pretty cool (laughs). And they have a PCC room which is like the mothers here they would bring their babies there which is downstairs and the girls who are pregnant they go to the PCC room once a week and take, wash the babies or hold the babies put them to sleep and just learn. And then yeah I went there a couple times. I didn't like at first I didn't like it cause I was like I don't wanna hold someone else's baby.*

P4: There is a breast feeding lady her name was X and she teaches classes on breastfeeding which I thought was very helpful because later on in my pregnancy I found that a lot of people have all these myths about breastfeeding. She really helped clear things up about them.

PNC Appointments:

All of the teens commented on receiving informational support through attending their PNC appointments. Getting questions and concerns related to the pregnancy and labour and delivery answered included receiving information on healthy lifestyles during pregnancy, receiving information on the health status of the teen and her unborn baby, information on what to expect during labour and delivery, and being linked with other informational resources.

P8: The most important thing is like, well they help you out a lot. They tell you a lot of labour and like contractions a lot. They tell you so much that once you get into them you won't be so much you won't be that scared.

P9: Like what do you mean learn anything? I learn that more about my baby. Cause like you hear the heart beat and it's just a really good thing to hear. Cause it's the thing that I look forward to is hearing the heart beat. Um yeah just like hearing the heart beat I look forward to hearing that cause I know everything's fine and 100% sure. And they I don't know it's weird how like not it feels like they grow super fast inside you. It's weird like every single time you go it's different each time.

P7: Yeah I think they're [PNC appointment] important. Cause they make sure everything's ok. Like make sure you don't have like STI's I guess they're called now. Stuff like that. And like GBS and make sure you're clean (laughs).

P10: Yeah. In the hospital at Women's they were telling me about it [prenatal classes] and they were asking me like they gave me a list of one's that are close to my area and stuff and they gave me all the information.

“Mom”:

Seven of the teens mentioned “Mom” as a source of informational support. This was mainly described as having questions and concerns related to the pregnancy answered. It was consisted of having questions about complications or unfamiliar feelings

during pregnancy answered, questions surrounding weight gain, information on the importance of PNC visits, and information on healthy lifestyles during pregnancy.

P10: Um like letting me know what to expect and stuff and I don't know I can talk to her about anything I guess... Yeah, just yeah she's helping me a lot.

R: Right. And how did you even know to come to prenatal classes, or appointments?

P7: My mom.

R: Ok, what did she tell you about them?

P7: She said, 'they're Dr.'s appointments to make sure everything's ok and this and that.'

P6: If I need to talk to her about mmm like discomforts or like weird feelings she's been through it you know so she's really supportive like that.

Some teens commented on information they received from their mother regarding the postpartum period. This included information on breastfeeding and parenting.

R: How do you feel about breastfeeding?

P5: Ok, my mom told me to breastfeed so I'm gonna breastfeed.

R: What kinds of questions do you ask your mom?

P7: Just little questions um like how I was when I was a baby and how she tolerated and stuff like that. Cause my mom was a young mom too so. She kinda know what I'm going through.

Child and Family Services:

Child and Family Services was mentioned by seven of the teens. They primarily offered informational support related to the postpartum period. This consisted of linking the teen to other informational resources surrounding the postpartum period like Villa Rosa, Public Health, prenatal classes and alternative schools.

P4: The best thing about Villa Rosa was being able to wake up and walk to class instead of get up, get ready, hop on the bus, go to school. And I don't know meeting different people, learning things that you probably wouldn't have ever known.

P3: Because like before I thought she [CFS worker] wouldn't try to help me but now it feels like she's trying to help me cause like she got me another social worker and I asked her why and she said, 'this social worker will help you keep your kid,

she'll give you advice', and all this other stuff and so. So far it's going good, she is giving me advice.

R: And what have those (prenatal) classes been like?

P5: Ok, like teachin' us to how breastfeed like how to hold, the way (mimicking how to hold a breastfeeding baby) babies, and how to breastfeed them and we watched a video how to breastfeed 'em.

Prenatal classes were recommended as an important resource to use by 5 of the teens, with 3 giving specific reference to Villa Rosa.

P8: Yeah that's (prenatal classes) a really good one. Like they teach a lot and they give school credits that's why it's good. Like you need your school credits even get like might as well put school in there too. Don't drop out if you're pregnant, don't drop out of school because it's gonna affect you and all that stuff.

While they were not considered significant sources of support, school staff, friends and sisters were each mentioned as other sources of informational support by three teens. Sisters and friends mainly gave information on pregnancy concerns, and labour and delivery. School staff gave information on healthy lifestyles during pregnancy, and linked them to other resources of informational support.

Unsupportive Behaviour

All the teens encountered unsupportive behaviour at some point during the pregnancy. It was described as lack of involvement with the pregnancy, discouraging behaviour and comments, lack or refusal of resources, lack of information, unavailability of resources and feeling uncomfortable with certain health care professionals.

Baby's Father:

Eight teens commented on the unsupportive behaviour displayed by their baby's dad. This was mainly in the form of lack of involvement and discouraging comments and behaviour. Lack of involvement was defined as the baby's dad not being involved due to a restraining order, being unaware of the pregnancy, and refusing responsibility or

ownership of the pregnancy.

P1: No he was encouraging me to go get an abortion and what not and so , then I told him oh like when what happens if I go through with it and I need him to watch (their other son) because I can't watch him while I'm going through that and I wanted him there as well just for that and I was like 'if you want this then this is what you have to do,' and he's like, 'I'm not doing anything', so I said I'm gonna make up my own mind then so I made up my own mind.

P10: I can't like contact him. Well we're trying to get a hold of him but I can't get a hold of him. Like I don't know where he is. He doesn't I heard he moved from Winnipeg so. I don't know.

P3: He just kinda like laughed and 'yeah right, it's not my kid I know it's not.' I know it is.(more dialogue)

R: So how did that make you feel when he said I don't believe you?

P3: I was freaked out, just like thinking that I was going to have the baby and raise it on my own.

Discouraging behaviours and comments were defined as encouraging the teen to get an abortion, lack of communication, showing such emotions as shock and/or anger over the pregnancy, not wanting to attend PNC visits or prenatal classes, and being untrustworthy.

P7: Because um (baby's dad) he came with me once and he was 'oh that's so boring blah blah blah', and I was like well don't come if it's so boring then (laughs). So then I don't know I just don't like it.

P8: But then this whole summer I never seen him cause like what's the point he's just gonna, like even if we do get back with each other when the baby comes I doubt much I'm gonna trust him. Cause he lost his trust. He lost it big time and I told him he has to gain it back for me to even like have respect or trust for him again. He lost that.

P5: I know I just he was mad so I just went to my mom's place and he cooled off and came back and talked to him again.

R: So how long did it take him to cool off?

P5: A couple weeks, three weeks.

P9: ...like a father's class too but they have that here like if you want if your, the baby's dad wants father's class he can come here but they've talked about that to my boyfriend a couple times and he just doesn't say anything and he doesn't say if he wants to go or not so.

R: *Does he tell you?*

P9: *No he just talks about other things and leaves that out. So I don't think he wants to go (laughs).*

Child and Family Services:

Unsupportive behaviour by Child and Family Services was commented on by 7 of the teens. This was in the form of unavailability of resources, lack or refusal of resources, discouraging behaviour and comments. Unavailability of resources consisted of being very difficult to contact or unable to contact for an extended period of time, poor communication with the teen, and being unreliable.

P2: *I'm with a different branch of CFS called [agency name], it's a northern agency and um I've only met with my worker once and when I do actually call her for questions or something like that she hasn't ever called me back or anything like that so I don't really know what's going on with that.*

P7: *Yeah and the prenatal worker and nothing really happened. Like she (CFS worker) came last time and ah what's it called last time I seen her she brought over the paper for me to sign to get the prenatal worker and everything I mean she hasn't said anything back since then.*

R: *And you're 35 weeks.*

P7: *Yeah so I don't know what's going on with her. I just basically said, 'screw her. I'm just gonna do it the way that I'm gonna do it then.'*

Lack or refusal of resources was defined as not providing enough financial resources to meet the teen's needs, and linking teens with inadequate resources.

P9: *Un hun cause she's supposed to supply me those bus passes but she said we have to buy them first and then give her the receipts. We (teen and baby's father) gave her the receipts so she has the receipts they were the original ones and she hasn't given the money yet.*

P1: *Um I don't know like I try and ask them (foster parents) for things or they'll try to ask me for things, it's like if I need anything and when we get to the store they expect me to pay for it and I'm like so that's why I don't even bother asking anymore for anything.*

R: *Ok, cause you don't have money for the groceries?*

P1: *I don't have money for things like that so and plus they are supposed to get money for me for basic needs and food and transportation and what not so it's a little hectic sometimes and I'm like 'oh I don't even wanna bother with it.' Like it just*

gets me really frustrated and mad.

P4: Nothing. I wasn't asking them [CFS] for anything just the finance, the money wasn't enough to always get what I needed and start getting ready for the baby. Sometimes I'd have to wait a month or two for thing but I guess that's what happens when you decide to be a mother (laughs).

Discouraging behaviour and comments consisted of sharing minimal information, making comments that belittled the teens and being too authoritative.

P9: She [CFS social worker] doesn't like return my calls she doesn't give me answers to anything. Cause right now I'm at the point where I'm gonna have my baby in 4 weeks and I don't know where I'm gonna be living after this and cause I have to be gone out [of Villa Rosa] by 3 to 4 weeks after the baby's born so end of October beginning of November I have to be out and she hasn't given me answers of where I'm gonna live, what my budget is, how I'm gonna get my furniture and all that. And she just keeps on putting it off putting it off. And that's been for 3 months now and she still doesn't know. Like she still hasn't given me an answer so it's just kinda frustrating. And that's what's getting me mad (laughs).

P3: She said she wasn't surprised (laughs), and then I took it the wrong way, but at the same time when I thought about it I wouldn't have been surprised either (laughs).

R: Surprised as in knowing that you were pregnant? (participant nods 'yes'). Ok, so how did you mean by took it the wrong way?

P3: It felt like it felt like she I don't know was kinda putting me down. Is what it felt like for me.

P9: Um the social worker like my social worker now like it switched to the girl and um she kept on telling me her supervisor is trying to get her to get me to go into Villa Rosa for sure. I didn't wanna go but I got forced to go and then so I came here not like coming in with a good impression and not a good head so yeah.

Health Care Providers:

Health care provider's unsupportive behaviour was mentioned by 5 teens. This was described as feeling uncomfortable with certain health care professionals and lack of information or misinformation. Feeling uncomfortable with some health care professionals was defined as not wanting to be examined by a male or medical student, and judgemental comments.

- P3: *I like how she's friendly. I like how she takes the time to explain things. But the thing I don't like to be honest is when like the student doctors come in and then like they'll push on my stomach too hard and then I'll be like (winces), and then I'll be frustrated andthere was a student doctor before he to me it seems like he had no clue what he was doing. But I didn't say anything, I just wanted to get out.*
- P4: *Um I don't like when she brings in students and she doesn't ask me if they can be in, so by the time I already have something to say about them they're already doing what they're, what they were told to do I guess.*
- R: *Ok, does that happen a lot?*
- P4: *It's happened 3 or 4 times.*
- R: *And each time how do you feel about it?*
- P4: *Um I don't really like it. Especially because it's been a male student twice.*

Lack of information consisted of omitting information about the option of using other health care professionals during the pregnancy, misinformation and not giving full disclosure of such information as test results.

- P4: *And there was a lady (health care professional) there who told me about it (Villa Rosa program) and then she said that they only took women in 18 and UP so I kinda couldn't keep going with the pregnancy cause I needed a place to live and then she phoned me back after and after I had terminated the pregnancy and told me that I could move in so (laughs). So I heard about Villa Rosa from her and then when I got pregnant this time I thought that I should probably.*
- P9: *Um just I think it'd be like more better if they would tell you everything that they know. Cause ah they did my pap smear or whatever and they didn't tell me anything was wrong um. I had that done in April and I found out last month that I had HPV but it wasn't serious it was like the really low kind the lowest of whatever and ah so she's like don't even worry about she's like it's like probably just because you're pregnant like most girls get it because they're pregnant and I was like oh ok I thought it was some big deal I was like ready to cry (laughs). But I found I didn't find that out by [obstetrician], I found that out by one of her student and ah long time away from like when it happened from when they found it out a month after it. But I assumed everything was fine cause they never said nothing was wrong.*
- P6: *Just like the attitude she [clinic nurse] had towards like I guess because the second time (second pregnancy) you know like she thought I did it on purpose and she like yeah just her attitude like wasn't like the greatest. Like everyone else here is just so nice and bubbly and then she just I guess she was having a grumpy day or something (laughs). She was like she's like even towards my mom she had attitude. So just her attitude I guess (laughs).*

“Mom”:

“Mom’s” unsupportive behaviour was mentioned by 4 teens. This was in the form of discouraging comments and behaviour. It consisted of refusing accommodation, refusing help, and having a poor or no relationship with the teen.

P1: Um just because my mom didn’t want me living with her and she didn’t want to have to deal with ah trying to raise like another baby and what not so (muffled) she couldn’t handle me living at the house so.

P3: I don’t really want my kid around my mom unless she’s sober. But I don’t want her around the kid at ALL cause I know exactly how she is. One week she’ll be like, ‘oh my grandchild’, and then the next week she’ll ignore her grandchild, she’ll ignore me and if I say something wrong to her like she’ll tell me to shut-up or something. She’ll make up a lie and call CFS. And me and my worker already talked about that. And like, ‘you know how my mom is’, she said, ‘yeah I know exactly how she is.’ My workers prepared for that and I’m prepared for that.

P8: Well I got mad at her because she’s back with a criminal. And I don’t like it, I don’t like him he beats on her. And that’s why I got mad at her. But now we’re getting its and bits trying to connect again. Like I talk to her like maybe once in a while on facebook and all that. We don’t talk for either like 5 minutes, and then she’ll like log off.

Barriers, Motivators and Facilitators to PNC Visits

In order to elaborate on the quantitative results, adolescents were also asked about their perception of barriers, motivators and facilitators to PNC visits.

Barriers

Barriers to attending PNC visits are discussed under two subheadings, personal and external. Personal barriers were discussed by 6 of the teens. Some PNC appointments were missed because they slept in or were feeling too tired, as well as forgetting their appointment. Some teens were very apprehensive about attending PNC because they were afraid of the unknown and medical procedures. They also did not like being examined by a stranger, especially a male.

- P10: *Oh I forgot like cause like I actually would forget that I had an appointment and if it was in the morning that I had one which has happened once, I just like I don't wake up and my auntie woke me up but then she left to go to her appointment and then I just fell back asleep (laughs). So yeah. I only missed my appointment I think I only missed three. But then I like they would book re-book me for my other appointments so yeah.*
- P3: *Because I was scared I was scared like whenever she'd check the baby's heart beat if it wasn't beating the way it's supposed to be or if I wasn't growing right or I was scared that I was gaining too much weight, which I think has happened (laughs), but they said that the baby's growing good so to me right now the only thing that matters is the baby.*
- P7: *I've missed some yeah that's from like either cause I slept in or I just didn't write it down on the calendar so it slipped my mind.*
- P9: *She's not there at all my Dr. appointments cause she's has other things to do so I've met different students I think they were and that are learning and they just do my thing. So sometimes it's like, 'like oh I don't want another new person touching me' (laughs). Cause yeah and lots of time I don't know I feel weird if it's like a guy, cause I don't know I feel more comfortable if girls handle that stuff. But if it's a guy it's just like it feels weird cause they have to touch you more close down there and I don't like that (laughs). So at least I have my boyfriend there.*

External barriers included having difficulty accessing the clinic staff, inconvenient hours of operation, wait times being too long and transportation issues.

- P1: *Ah alright it's kinda hard to actually get a hold of the office though. I find you gotta call there a few times cause if you call there and it'll just go to the answering machine saying that there's nobody there, and they are there, but you gotta call there a few times and then usually when I call there I get put on hold right away for about 5 or 10 minutes. It's kinda frustrating but I do get through.*
- P10: *I try to request ones [appointments] in the afternoon but they always try to give me a morning one.*
- P6: *And yeah a long wait, yeah like one time we were here two hours just in the waiting room (laughs). I think cause she's such a recommended doctor that like lots of people see her so it's a long wait (laughs).*
- P3: *I'd either be too tired to go or no way to get here, like I'd lose my bus pass, or wasn't feeling good.*

Motivators

Every teen commented on motivators to attend the PNC visits. These included learning about the health of the teen and her unborn baby as well as having a safe pregnancy, concern for the health of the baby, concern for the health of the teen, keeping the baby from being apprehended from Child and Family Services, and tapping into other resources.

P1: Just to take it it's fun you learn things about yourself and your child and so and it's safe and I guess comfortable just the fact that you know you're ok and your baby's growing and what your baby's up to and just interesting things.

P2: Ah I's been going along pretty smoothly actually. No health concerns what so ever, baby's good, healthy kicking so, that's all that really matters to me, is that she's healthy.

P9: You get everything checked out and like it's see if your blood pressure's good if you like, if you're like diabetic or not cause I wish I wasn't like I'm not but I was hoping I wasn't (laughs). Cause I didn't know and I get sick when I eat lots of sugar so I didn't know if that was bad or not. But I'm not so. But yeah you learn like different things like that and just I don't know (laughs).

P10: Because Women's is good like place to get all your stuff and they give you all the information on like school and nutr like your nutrition and how to eat properly. They do all the blood works there all your appointments are there and like I don't know it's just a big like it's a good place to be and yeah (laughs). I don't know (laughs). That's what I would tell them.

Facilitators

Six teens mentioned factors that facilitated their attendance to PNC appointments. This consisted of appointments being easy to make and rebook, short wait times for morning appointments, short examination times, friendly staff that was easy to communicate with and the clinic being in close geographical proximity to the teen.

P10: And then they just call or I call or she gets me to call and make a different appointment. But usually they call and say can she come in.

- P5: We book the earliest ones all the time, 9:15 and stuff. We only have to wait not even 10 minutes and then they call. Yeah.*
- P10: Umm they're (examinations) like most of them don't take me long so I'm happy like I go in and I come out so yeah.*
- P6: Yeah she's really like nice like she's um ah I know someone else that had her and she she said ah she said she's like such a nice funny doctor she's easy to go to and stuff, yeah.*
- P9: Um from here it's easy cause it's just like oh yeah I catch the bus two streets away from here so and it goes like pretty close to there anyways I just have to walk like a couple minutes. And yeah so it was pretty easy to take a bus.*

Future Plans

When the teens were asked about their future plans, they were all able to share something. Some plans were more elaborate and well thought out, while others were more vague and short term. Although each plan was unique to the teen's situation, they all included information on where they planned on living after the baby was born. Eight teens intended to continue living in their current location; seven of these teens were staying with a parent or parental figure. The remaining two teens planned on leaving their current dwelling as soon as the baby was born for independent living.

- P2: So I'll see how long that (Manitoba Housing) takes me cause I've heard up to a year or more so but my dad said I could stay here as long as I like and yeah I'll just stay here with my daughter until I find a place of my own and I'm gonna start saving up money so when I actually do I'll be able to buy some furniture and stuff like that.*
- P9: So yeah my options are to go next door to post natal house and or go on foster family another foster family, or go on independent living and I want independent living. Cause like if I go on independent living I'm thinking like they pay for my apartment till I'm 18, they get me like my furniture what I need out of my life my budget and stuff and when I turn 18 if like I like that apartment I can stay in it and pay for it myself and it wouldn't be too much.*

All the teens were asked, 'Who is going to help you look after the baby once the baby comes?' The teens were all expecting someone to help out with the care of the baby.

This was primarily defined as watching the baby while the teen was at school, or watching the baby for respite. Eight teens mentioned “Mom” as a primary source, while other sources also mentioned the baby’s father, the mother of the baby’s father and new foster parents.

P7: Cause since my mom does have MS [multiple sclerosis]she’s not, she can’t take care of a baby for me while I’m at school and doing everything and I was talking to (baby’s dad’s mom) about that and she said that if I wanted to the baby could always stay stay there with them for the first little while. So she offered it to me. And I talked it over with my mom and (baby’s dad) and his mom and yeah we worked it out for that.

Continuing their education in some form was mentioned by all the teens. This consisted of continuing school immediately following the delivery, taking time off initially and returning later on, and attending alternative school programming part-time. Some would elaborate further into the future talking about university and potential careers.

P1: Um hmm I don’t know I don’t think much has really changed really um just the last while I’ve been focusing on school more now that I know I’m gonna have two kids to look after and I don’t wanna sit on welfare and I don’t wanna have a cheap McDonald’s job or something, it’s not where I see myself and so I’ve just been focusing more on school and um being more active with him (son) so.

P2: Um I’ve heard that ah I just heard good thing, my teachers told me a lot of girls in my situation that have been students of his before, he said that when the girls go there that they recommended it highly. You’re allowed to bring your baby there and if your baby’s hungry they’ll take you out of class and you feed your baby and I know a couple people who have been there too so I’ve just heard good things about it.

When the teens were asked about who was going to provide them with financial support in the postpartum period, usually a couple of different sources were mentioned. Combinations included money from “Mom”, the baby’s father, Father/Step-father, the teen’s future part-time jobs, Child and Family Services, Child Tax, Employment

Insurance Assistance and grandmother.

Recommendations

All the teens shared recommendations regarding their PNC visits. Every teen recommended attending PNC, with a couple recommending their specific obstetrician. It was recommended to attend PNC to have a safe and healthy pregnancy, receive many resources under one roof and to learn interesting things about their body and baby.

P10: Because [name of hospital] is a good like place to get all your stuff and they give you all the information on like school and like your nutrition and how to eat properly. They do all the blood works there, all your appointments are there and like I don't know it's just a big like it's a good place to be and yeah (laughs). That's what I would tell them.

Three teens recommended choosing a clinic or hospital that is in close geographic proximity to them for convenience sake.

P1: Um things maybe like the some ah with me like the... Teen clinic in my school that was really helpful for me cause it was there when I needed it and it was just more convenient and now that I'm 30 weeks and so it was just a lot easier that way. The first while you don't get to see well you don't get to really see or do anything basically you just go every 4 weeks or every 3 weeks and then once you're 30 weeks it's every 2 weeks and it's just a lot easier.

Two teens recommended their health care provider to be easier to access for questions related to the pregnancy, as well as being more thorough with regards to sharing information on test results and assessment findings.

P9: Um just I think it'd be like more better if they would tell you everything that they know. Cause ah they did my pap smear or whatever and they didn't tell me anything was wrong um. I had that done in April and I found out last month that I had HPV but it wasn't serious it was like the really low kind the lowest of whatever. And ah so she's like don't even worry about, she's like it's like probably just because you're pregnant like most girls get it because they're pregnant and I was like oh ok I thought it was some big deal I was like ready to cry (laughs). But I found I didn't find that out by [Obstetrician], I found that out by one of her students and ah long time away from like when it happened from when they found it out a month after it. But I assumed everything was fine cause they never said nothing was wrong. And my boyfriend they gave me a pamphlet

and I was looking at it, what the name of it was, and I read it and it was fine so I was like ok. That's the only thing like if like they know something that's wrong with you and they don't tell you like if it's wrong I think that's not a good thing to do. Like they should tell you right away. So you don't have whatever just in case like it is bad. But I think if it was bad they would've told me right away but this is just low priority that doesn't even matter so yeah. I think that's the only thing that I would want is more information about everything (laughs). Cause they just ask you what your questions are and if you have any questions actually and they like you see them writing down things all the time but you don't know what they're writing down. So it's just like what are you writing down that I don't know (laughs). So that's basically all that I have to say is that.

Two teens commented on wishing their Child and Family Services worker was easier to access, and provided more informational and material support.

P7: Ah....just with the CF just with my social worker for being so unreliable. And I wish she would've been around more in this last little while cause this is where I need it the most and just like the whole planning and everything and making sure everything's good to go. And she wasn't there so that's the only basically the only thing that I would've wanted.

Summary

Social support was determined to be a significant factor in the use of PNC among the teens. Social support came in several different forms, uniquely defined from different sources.

Material support:

Material support was a frequently mentioned form of social support. “Mom” was most often the provider of material support. This type of support included facilitating PNC appointments, supplying items and needs for the teen and unborn baby, transportation to PNC appointments and facilitation of academic attainment. Child and Family Services was the next most frequently mentioned source of material support. This consisted of financial support for needs of the teen and unborn baby, being linked with valuable resources during pregnancy, being provided with safe accommodation and

facilitating PNC appointments. Friends were the next most frequently mentioned source of material support. This was mainly in the form of tangible items for mom and the unborn baby, as well as transportation to PNC visits.

Emotional Support:

This was another important form of support described by the teens. Encouraging words and behaviour, as well as reassuring words and behaviour meant a lot to the teens. Mom was the most frequently mentioned source of emotional support. Reassuring behaviour and comments were the most frequently mentioned. This consisted of sympathetic or empathetic words, showing understanding and acceptance, comforting comments about the current situation and future, listening, and having someone to talk to about their concerns and problems. “Mom” also provided encouraging comments and behaviour. This consisted of showing interest or concern over the pregnancy with questions about the pregnancy and PNC visits, showing excitement over the pregnancy, and attending PNC visits and prenatal classes with the teen.

The baby’s dad was the next most frequently mentioned source of emotional support. This was included encouraging behaviour and comments, which was defined as attending the PNC visits, and showing excitement and interest in the pregnancy. Reassuring behaviour and comments consisted of the baby’s dad accepting the pregnancy and imminent parenthood, having the baby’s dad to talk to and making comforting comments.

Friends provided encouraging and reassuring words and behaviour. Encouraging words and behaviour included showing concern or interest in the pregnancy, attending PNC visits and encouraging the teen to make healthy lifestyle choices.

Child and Family Services were mentioned by 4 of the teens as providing emotional support. Reassuring behaviour and comments consisted of sympathetic or empathetic words, showing understanding and acceptance, comforting comments about the current situation and future, listening, and having someone to talk to about their concerns and problems. Encouraging comments and behaviour consisted of showing interest or concern over the pregnancy with questions about the pregnancy and PNC visits, showing excitement over the pregnancy, and attending PNC visits and prenatal classes with the teen.

Informational Support:

This presented as having questions or concerns related to the pregnancy, labour and delivery and the postpartum period answered. Pregnancy related information consisted of learning healthy behaviour during pregnancy, having the health of the teen and unborn baby assessed, learning about the health status of the teen and unborn baby, and being connected to other informational resources such as Villa Rosa, a dietitian, public health nurse and prenatal classes.

Information related to labour and delivery and the postpartum period consisted of information on signs of early contractions, receiving information on schools with daycares and alternative school programming, being linked with family resources for after the baby is born, breastfeeding information, parenting practicum and information on raising a baby. PNC appointments were the primary source of informational support. This consisted of getting questions and concerns related to the pregnancy answered, information on healthy lifestyles during pregnancy, receiving information on the health status of the teen and her unborn baby, information on labour and delivery, and being

linked with other informational resources. “Mom” was the next most frequently mentioned source of informational support. This consisted of having questions and concerns related to the pregnancy answered. It consisted of having questions about complications or unfamiliar feelings during pregnancy answered, questions surrounding weight gain, information on the importance of PNC visits, and information on healthy lifestyles during pregnancy. Information regarding the postpartum period was defined as information on breastfeeding and parenting.

Child and Family Services also provided informational support. They primarily offered support related to the postpartum period. This consisted of linking the teen to other informational resources surrounding the postpartum period like Villa Rosa, public health services, prenatal classes and alternative schools.

Unsupportive Behaviour:

All the teens encountered unsupportive behaviour during their pregnancy described as lack of involvement with the pregnancy. This consisted of discouraging behaviour and comments, lack or refusal of resources, lack of information, unavailability of resources and feeling uncomfortable with certain health care professionals.

The baby’s dad was frequently mentioned as showing lack of involvement and discouraging comments and behaviour. Lack of involvement consisted of the baby’s dad not being involved due to a restraining order, being unaware of the pregnancy, and refusing responsibility or ownership of the pregnancy. Discouraging behaviour and comments consisted of encouraging the teen to get an abortion, lack of communication, showing such emotions as shock or anger over the pregnancy, not wanting to attend PNC visits or prenatal classes, and being untrustworthy.

Child and Family Services showed unsupportive behaviour in the form of unavailability of resources, lack or refusal of resources, discouraging behaviour and comments. Unavailability of resources mainly consisted of being very difficult to contact or unavailable to contact for an extended period of time, poor communication with the teen, and being unreliable. Lack or refusal of resources consisted of not providing enough financial resources to meet the teen's needs and linking the teens with resources that were not fully meeting the teen's needs. Discouraging behaviour and comments were in the form of lack of information, making comments that belittled the teens and being too authoritative.

Unsupportive behaviour on behalf of health care professionals consisted of feeling uncomfortable with certain health care professionals' and lack of information or misinformation. Feeling uncomfortable with some health care professionals' consisted of not wanting to be examined by a male or medical student, and judgemental comments. Lack of information consisted of omitting information about the option of using other health care professionals during their pregnancy, misinformation and not giving full disclosure of such information as test results.

"Mom's" unsupportive behaviour included discouraging comments and behaviour. This consisted of refusing accommodation, refusing help, and having a poor or no relationship with the teen.

Chapter 6: Discussion

Introduction

This chapter discusses the findings of both the quantitative and qualitative components of the study. Methodological strengths and weaknesses of the study are discussed, as well as recommendations for practice, policy, and future research.

Major Factors Associated With Inadequate Prenatal Care

The major factors associated with inadequate prenatal care among the adolescents in this study were First Nations ethnicity, being single, having low social support, and being multiparous.

First Nations Ethnicity

First Nations adolescents were 4.147 times more likely to receive inadequate PNC than non-First Nations adolescents. The higher rates of pregnancy in First Nations adolescents may provide a partial explanation for this finding. Rotermann (2007) states that, unlike the rest of the Canadian population, Aboriginal peoples have not experienced the same delay to their first pregnancy. In 1999, more than one in five First Nations babies were born to mothers aged 15 to 19, compared to the national ratio of one in 20 (Rotermann, 2007). Fertility rates for Aboriginal peoples in Canada remain much higher compared to the non-Aboriginal population, especially among young women (O'Donnell, 2006). Teen pregnancies are four times higher among First Nations, 12 times higher in Inuit communities, and 18 times higher on reserves, compared to the rest of the Canadian population (Ordolis, 2007). In 2005, Manitoba had 1,810 pregnancies among women under 20 years of age, resulting in 1,219 live births, 18 of which were to teens under the age of 15 (Statistics Canada, 2005). "While it is difficult to determine what proportion of

these pregnancies and live births were to Aboriginal teens, it has been established that Aboriginal youth are more likely to become pregnant than non-Aboriginal youth” (Murdoch, 2009, p. 3).

Researchers from the Prairie Women’s Health Centre for Excellence created a report on the health indicators for women in Manitoba. Their research showed that First Nations women tended to be younger than non-First Nations women at the time of their first pregnancies (Donner, Isfeld, Haworth-Brockman & Forsey, 2008). This helps explain the finding that there were high percentages of First Nations adolescents in both the control (59.6%) and case (88.4%) groups for this study. During the period from April 2001 to March 2004, the Manitoba rate of first pregnancies among First Nations women under the age of 18 was 96.8/100,000. The rate for non-First Nations women was 18.6/100,000 (Donner et al., 2008).

The higher odds of receiving inadequate PNC among First Nations teens in this study is consistent with the results of a previous population based study in Manitoba in which Aboriginal women were found to have a higher risk of receiving inadequate PNC compared to non-Aboriginal women (Heaman, Newburn-Cook, Green, Elliott & Helewa, 2005c). Sokoloski (1995) conducted a qualitative study to explore why Canadian First Nations women do not access PNC. She conducted 7 key informant interviews with English speaking First Nations women, who had previously lived on-reserve but were now in an urban setting. She found that First Nations women viewed birth as a natural, normal process that did not need all the ‘western medicine’ interventions that are often imposed on them (Sokoloski, 1995). She also found that barriers to attending PNC were often due to problems with childcare and the belief that PNC is only needed as issues

arise or if there were past pregnancy complications. Women also expressed that they did not like peri-vaginal exams (Sokoloski, 1995). Some of these reasons may also apply to the adolescents in this study. A Canadian report by Lalonde, Butt & Bucio (2009) stated that Aboriginal women living in urban areas may face discrimination in the form of cultural insensitivity. This may contribute to a reluctance in their use of health care services. Although Lalonde et al. (2009) was talking about Aboriginal women as a whole and not specifically adolescents, this statement could easily apply to the First Nations adolescent population. Lalonde et al. (2009) recommended that a better understanding of aboriginal traditions, beliefs, and health risks could help health care providers be more understanding and supportive to these women seeking health care.

Multipara

Multiparous adolescents were much more likely to received inadequate PNC. Heaman et al. (2005c) found that high parity was one of several individual predictors of inadequate PNC among use Manitoba women. Delvaux et al. (2001) also found this in a European case control study. A U.S. study linked birth data from 1993-2002 among Milwaukee teens on their first and second births. Results showed that inadequate PNC increased between first and second births (Partington et al., 2009). This finding was congruent with a previous study by Hueston, Geesey & Diaz (2008) that used birth data from the National Center for Health Statistics at six different time periods over a 25 year span. The study described initiation into PNC among adolescents in the U.S. Their findings showed that teens who had a previous birth were more likely to have delayed or no PNC (Hueston et al., (2008).The authors hypothesized that this was due to the likelihood that all teens are fearful at this stage and age to reveal a pregnancy. They felt

this was supported through the observation of teens who had a previous birth (despite knowing where and when to go for PNC) being at higher risk of delaying PNC. Although the reasons why multiparous adolescents are more likely to receive inadequate care are not fully known, it may also be due to the belief that they feel they know all they need to know from their first birth experience.

Single Marital Status

Results from the multivariate logistic regression model show that single teens from our sample had higher odds of receiving inadequate PNC compared to those who were married or living common-law. Hohmann-Marriott (2009) analyzed a 2001 U.S. Early Childhood Longitudinal Study-Birth Cohort survey and found that unmarried women and women who delayed telling the baby's father about the pregnancy were less likely to receive adequate PNC. Partington et al. (2009) found that second births to teen mothers who had not yet established paternity or were unmarried were more likely to have preterm or low birth weight babies. They also associated an increase in inadequate PNC prior to the second birth. The authors stated, "Marriage or established paternity may serve as a proxy for increased family income, as well as increased psychosocial support during pregnancy, and may thereby contribute to improved outcomes." (Partington et al., 2009, p. 6.). A U.S. study analyzing data over a 25 year period on PNC initiation by teens found that among other things, being unmarried was related to delayed PNC (Huetson et al., 2008). The finding of being single as a risk factor to inadequate PNC use supports these studies' findings.

Low Interpersonal Support

The odds of receiving inadequate PNC were 4.5 times higher for teens with low

interpersonal support scores. Social support has been shown in many studies to offset the difficulties associated with adolescent pregnancy (Collins & Laursen, 2004; Grady & Bloom, 2004; Logsdon et al., 2005; Perrin & McDermott, 1997). These findings are consistent with a study conducted by Grady and Bloom (2004). They conducted an intervention study in the U.S. with a CenteringPregnancy (Centering Healthcare Institute, Cheshire, CT) model of prenatal care which involved high support and educational components. The results showed higher rates of prenatal care use among the intervention group compared to the control group of adolescents who delivered at the same hospital in a different year. A U.S. study by Bensussen-Walls et al. (2001) attributed the success of their teen-focused prenatal care versus regular prenatal care results, to their comprehensive psychosocial assessment and links to community social support resources such as prenatal classes. Teens in the teen-focused care group had fewer missed appointments, were more likely to return for follow-up care and be followed longer in the postpartum period compared to teens in the regular prenatal care group. The authors also attributed this success to the continuity of care and encouragement provided by having the same antepartum and postpartum nurse (Bensussen-Walls, 2001). Social support plays an important role in the use of PNC among adolescents. The findings from the qualitative study support this. Interviewed teens spoke of material, emotional and informational support that was essential to their initiation and continuation of PNC visits. From this it can be hypothesized that if a concept (like social support) which is so important to PNC use is removed, then PNC use would decrease with it.

Factors Not Associated With Inadequate Use of Prenatal Care By Adolescents

Interestingly, several psychosocial variables did not differ significantly between

the cases and controls in this study. Factors such as high perceived stress and low self esteem have been found to be significant predictors of inadequate prenatal care in other studies (Heaman et al., 2005b; Johnson, Hatcher, El-Khorazaty, Milligan, Bhaskar, Rodan, Richards, Wingrove & Laryea, 2007; Loveland Cook et al., 1999), but these studies did not focus exclusively on adolescents. Reasons why these factors did not differ between adolescent cases and controls are discussed below.

Stress

There was no significant difference between cases and controls in levels of perceived stress. This may be due to the fact that most teenagers experience higher levels of stress and depressive symptoms during this phase of life (Adkins, Wang, Dupre, van den Oord Elder, 2009; Brooks-Gunn, 1991; Ge, Lorenz, Conger, Elder & Simons, 1994; Lau, 2002). Stress in teens has been associated with a variety of high-risk behaviours, including participating in high risk sexual behaviours (Finkelstein, Kubzansky, Capitman, & Goodman, 2007; Finkelstein, Kubansky, & Goodman, 2006; Goodman, McEwan, Dolan, Schafer-Kalkhoff, & Adler, 2005); something all the participants engaged in. An analysis of a large nationally representative longitudinal adolescent study in the U.S. called Add Health was conducted. Their results showed that stressful life events increased in frequency across adolescence and then declined in young adulthood (Adkins et al., 2009). It also found that females had greater sensitivity to stressful life events compared to males.

Spear (2000) hypothesized that teens respond differently to stress in that they experience stress more intensely and need a longer recovery time after stressful events, than adults. There is also the fact that teenagers are not usually prepared for pregnancy or

parenthood, and are stressed during this time (Clemmens, 2003; Ordolis, 2007; Rentschler, 2003).

Self-esteem

No significant difference was shown between cases and controls in this study, with over one-quarter of both groups having low self-esteem scores. The concept of self-esteem has been studied among adolescents since the 1960's in North America. Psychologists have stated that adolescence is a time of "Personal Fable" and "Imaginary Audience". Personal fable or feeling unique and invulnerable, is also known as egocentrism. Imaginary audience is the misbelief that others are constantly paying attention, watching and or criticizing them. It has been noted that higher scores on egocentrism were associated with greater depression and loneliness (Goossens, Beyers, Emmen, van Aken 2002), while Ryan & Kuczkowski (1994) found this to be linked to lower self-esteem. Higher scores on egocentrism have been found to show an increase in high risk behavior (e.g. unprotected sex) (Alberts, Elkind & Ginsberg, 2007). A meta-analysis of over 400 studies in the US using the Tennessee Self-Concept Scale (Fitts, 1965), found a trend showing high school samples to have below average scores, college students and adults having average scores and the elderly having above average scores (Thompson, 1972). Rosenberg (1986) states that self-esteem fluctuates during adolescents, depending on the situation and nature of the relationships. Self-esteem has been found to be at its lowest in teenagers between the ages of 13-18 (Santrock, 2001). Harter's (1989) research found that females tended to rate lower self-esteem on physical appearance, but higher on close friendships. A US study by Dusek & McIntyre (2003) noted a drop in self-esteem among teens during the transitioning from Jr. High to High

school.

The proposed natural increase in stress, and hypothesized drop in self-esteem during adolescence could explain why both cases and controls experienced no significant difference on these two measurement scores.

Family Hardiness

The proportion of low scores on the Family Hardiness Index were not significantly different between groups. Common tasks during adolescence are gaining more autonomy, and separation and independence from parents (Darling, Cumsille & Pena-Alampay, 2005; Herrman, 2010). Adolescent-parent conflict is commonly due to the teen's attempts for autonomy and challenging boundaries with parental control (Smetana, 1988, 1995). Although mothers have been noted as the most frequent providers of support by pregnant teens (Burke & Liston, 1994), they are also often in conflict with one another (Barnet, Joffe, Duggan, Wilson & Repke, 1996). An American qualitative study involving 30 teens (mainly Hispanic), examined parental communication prior to and during pregnancy, from the teen's perspective (Lloyd, 2004). A theme of "unstable family relationships effected communication" came forward. This was defined as growing up in an unstable environment, immediate family members not living together on a regular basis, living with extended family members and others, and violence leading to poor adolescent-parent relationships (Lloyd, 2004). This poor relationship carried on into the pregnancy, causing difficulty communicating about the pregnancy. "Lack of communication with fathers" was another theme that emerged. This lack of communication was due to things like not knowing their father or being afraid of him. Regardless of receiving adequate or inadequate PNC, these research findings may attempt

to explain why both groups had generally low family hardiness scores.

Barriers, Motivators and Facilitators to PNC Use

Barriers

Barriers to PNC differed between groups with more cases than controls reporting they could not get an appointment, they had to wait too long to get an appointment, the hours at the clinic were not convenient for them, they did not think they could communicate with staff, and had transportation problems. A qualitative study examining late entry to prenatal care among adolescents found that late initiators often perceived clinic staff to be 'insensitive', or not culturally competent (Daniels, Noe & Mayberry, 2006). Loveland Cook et al (1999) also found that access barriers to PNC among inner-city women were long clinical wait times, and no weekend or evening hours at the clinic. Qualitative findings support some of these results. Interviewed teens, who all received adequate PNC, found booking an appointment relatively easy. However, they also reported barriers to PNC such as inconvenient clinic hours (disliked morning appointments), difficulty accessing clinic staff and transportation issues. A focus group that included 5 First Nations health care providers from Winnipeg, Manitoba, found that transportation issues were a major barrier to attending PNC among First Nations women, and recommended increased use of community outreach services to provide PNC (Heaman et al., 2005a). In terms of 'personal beliefs' that created barriers to PNC, more cases than controls reported missing appointments because they were afraid of or did not like medical tests and examinations, did not like needles or taking medicine. Interviewed teens also commented on these barriers. More cases reported that they felt they could take care of themselves during pregnancy, got advice about pregnancy from family and

friends, and did not want to be examined by a man. Interviewed teens felt strongly about not wanting to be examined by a man. Solokoski (1995) also reported that Canadian First Nations women preferred to receive advice about pregnancy from family, and that PNC was viewed as something a woman only needed in the presence of an issue or previous pregnancy complication. More cases than controls did not want people to know they were pregnant, stated the pregnancy was unplanned, were thinking of having an abortion, and were worried about the risk of their baby being apprehended by Child and Family Services. Loveland Cook et al. (1999) also found access barriers to PNC to be being dissatisfied with care received and not wanting people to know they were pregnant. Some of these findings are supported by the qualitative results. Interviewed teens were also worried about their child being apprehended by CFS. Other researchers have agreed that fear of disclosing, and attempts to conceal a teenage pregnancy from parents may delay PNC (Young et al., 1989; Wiemann, Berenson, Garcia-del Pino & McCombs, 1997). The contemplation of having an abortion has been linked to inadequate PNC in a previous US study, however adolescents were not specifically analyzed (Johnson et al., 2003). The authors hypothesized that ambivalence towards the pregnancy created the premise for late initiation of PNC. The authors also recommended that women showing ambivalence towards their pregnancy be identified early and offered options and counseling. Under the sub-heading of 'personal issues' with regards to barriers, more cases than controls reported difficulty attending PNC because they did not feel well, had been under stress, they were depressed, did not feel good about themselves, of personal problems, and forgot their appointment. Interviewed teens also missed appointments due to forgetting their appointment and feeling too tired. Adult women have also stated barriers to PNC

include long wait times, inconvenient hours at the clinic, feeling depressed about the pregnancy, living in poverty, dissatisfaction with care, and limited support from others (Loveland Cook et al., 1999). Feeling depressed and being under stress have also been reported as access barriers to PNC (Loveland Cook, et al., 1999). Although there was no significant difference between groups on the perceived stress score; with both groups having high stress scores, more cases than controls reported that a barrier to attend PNC was being under stress. It could be that cases perceive stress more intensely than controls, or that their coping skills or resources were fewer than controls. Of note, interviewed teens did not report difficulty in attending PNC due to family problems, being depressed, or not thinking straight.

Motivators

More controls than cases attended PNC to protect their health, to talk to someone about their pregnancy, to learn better health habits and to learn about labour and delivery. The qualitative results supported these findings. Interviewed teens were motivated to attend PNC to learn about the health of themselves and their unborn baby. As well they were motivated to attend PNC to have a safe pregnancy, and also for concern over the health of themselves and the baby. Interviewed teens also mentioned motivation to attend PNC came from wanting to keep the baby from being apprehended by CFS, and accessing other resources (i.e. dietitian, PNC classes). The motivation for adolescents to use prenatal care based on concern over the health of their baby and their own health has been noted in previous studies (Cox, Bevill, Forsyth, Missal, Sherry & Woods, 2005; Teagle & Brindis, 1998). Cox et al. (2005) conducted a qualitative focus group study involving adolescents who were enrolled in a prenatal and postnatal program. Teens were

asked what motivated them to attend, and what they expected from a prenatal program. Teens stated not only was the health of their unborn baby/baby important to them, they wanted comprehensive care (several services under one roof), and the same provider, as this made them feel cared about. Prenatal teens wanted physicians to be up-front and honest about all medical tests, treatments and risks (Cox et al., 2005).

Facilitators

Facilitators differed between groups with more controls than cases reporting it was easier to get to their appointment using public transportation, stating clinic hours were convenient for them, and that they had a flexible work schedule to attend appointments. Interviewed teens also reported their attendance at PNC appointments was facilitated by short wait times, short examination times, and the clinic being in close geographic proximity. Interviewed teens reported that staff were friendly and easy to communicate with, and that their appointments were easy to make and rebook. Flexible work schedules could not be compared as none of the interviewed teens had jobs during their pregnancy.

Importance of Social Support for Pregnant Adolescents

The qualitative findings support the idea that social support is an important concept during adolescent pregnancy. Devereux, Weigel, Ballard-Reisch, Leigh & Cahoon (2009) examined the association between stress and social support for pregnant adolescents in the prenatal and postpartum period. They found that high measures of social supports in the prenatal period were similar at the 2 and 6 month postpartum period. They also found that social support was negatively related to stress when measured in the prenatal and postpartum period. The authors encouraged health care

providers to help teens set up their support systems prior to the baby being born, and teach them how to enlist their supports during times of stress (Devereux et al., 2009).

Material Support

Our qualitative findings revealed that material support is important to adolescents in the prenatal period. “Mom” was the most frequently mentioned provider of material support, followed by Child and Family Services and friends. Material support was defined as receiving tangible items (i.e. money, needs for the baby), transportation and facilitating PNC appointments and academic attainment. Logsdon et al (2005) also found adolescents’ main social support needs to be the need for money, housing, and transportation.

Emotional Support

The qualitative findings revealed “mom” as being the most important provider of emotional support during pregnancy. The baby’s father was the second most important provider of emotional support. Qualitative findings also found that friends and the Child and Family Service’s social workers were important providers of emotional support. This is supported by Devereux et al. (2009), who found that teens reported the most important providers of support during the prenatal and postpartum period were their mother and the baby’s father. In the qualitative results, emotional support was defined as encouraging and reassuring words and behaviours. Encouragement was demonstrated by showing interest or concern towards the pregnancy, and attending PNC appointments and classes with the teen. Reassurance was defined as empathetic or sympathetic words, showing understanding and acceptance, comforting comments regarding the situation and future, listening, and having someone to talk to about their concerns and problems. A U.S. study

by Logsdon et al. (2005) involving pregnant adolescents at an alternative school for pregnant and parenting adolescents, found one of their biggest social support needs to be consistent emotional support (support that is always present but allows independence).

Informational Support

Informational support was primarily provided through PNC appointments, followed by “mom” and Child and Family Services. Adolescents appreciated receiving answers to their questions about pregnancy, labour and delivery and the postpartum period. Informational support also included learning healthy behaviour during pregnancy, having the health of the teen and unborn baby assessed, learning about the health status of the teen and unborn baby, and being connected to other informational resources such as Villa Rosa, a dietitian, public health nurse and prenatal classes. A previous intervention study involving pregnant adolescents in the U.S. attributed the educational component to be associated with high PNC attendance (Grady & Blood, 2004).

Comparison support was not included in the findings as this was not mentioned by many of the teens. This may be due to the fact that much of comparison support also falls under the category of informational support. The overlap was difficult to separate and very few teens made references that were specifically related to receiving information based on their previous experience.

Unsupportive Behaviour

The adolescents in this study experienced a variety of unsupportive behaviour, including family members’ lack of involvement with the pregnancy, discouraging behaviour and comments, lack or refusal of resources, lack of information, unavailability

of resources and feeling uncomfortable with certain health care providers. The most frequently mentioned person regarding unsupportive behaviour was the baby's father. This was mainly stated as lack of involvement, and discouraging comments and behaviour. Wiemann et al. (1997) found loss of communication with the father to be a significant predictor in late entry to PNC. The lack of involvement by the baby's father could possibly be explained by our society's view on prenatal care, and how it lacks prenatal care resources that actively include teen fathers.

Conceptual Framework

This study was guided by a modified version of the health promotion model designed by Dr. Nola Pender (Pender et al., 2006). In the conceptual model it was thought that under the major heading of individual characteristics, the items all have an indirect affect on prenatal care use. These were personal factors such as age, income and marital status. Age will not be discussed as a contributor to prenatal care use as this study did not compare prenatal care use between adolescents and older women. However in the bivariate analysis, low income and single marital status were significantly higher in the inadequate prenatal care group. Under the same major heading, psychological factors examined were self-esteem and stress. The instrument scores between groups showed no significant differences among these variables. Sociocultural factors (also under the same major heading) such as ethnicity did prove to be a significant predictor of inadequate prenatal care use.

Under the major heading of behaviour specific cognitions and affect, perceived benefits or motivators to prenatal care use are shown to have a direct affect on prenatal care use. Motivators that were found to be significantly higher among controls compared

to cases were; 'to talk to someone about the pregnancy', 'learn better health habits', 'learn about labour and delivery' and 'learn to protect your health'. Under the same major heading is perceived barriers to prenatal care use. It also is shown to have a direct affect on prenatal care use and a reciprocal relationship with motivators. Dr. Pender describes this relationship as going back and forth with benefits and barriers 'fighting' to see which one outweighs the other to execute the health promoting behaviour of prenatal care use. There were several significant barriers to prenatal care use among cases compared to controls. To list a few, some of the barriers were: 'did not feel well', 'family problems', 'forgot the appointment', 'were afraid of or did not like medical tests and examinations' and 'you can take care of yourself during pregnancy'. Interpersonal factors measured were social support and family hardiness. These were expected to have a direct effect on prenatal care use. Family hardiness scores were not significantly different between groups with both having low scores. However 'family problems' was listed as a significant barrier to prenatal care use among the cases compared to controls. There was a significant difference on the measurement of social support with cases having a higher incidence of low social support scores compared to controls. After the logistic regression model low social support remained as a predictor of inadequate prenatal care use.

The health promotion model was a good fit for this study. Interesting findings were that self-esteem, stress, and family hardiness did not react quite as predicted. The researcher thought that there would be a more distinct, clear link that low self-esteem, high stress, and low family hardiness would predict inadequate prenatal care use and that the opposite, high self-esteem, low stress and high family hardiness would have been strong predictors of prenatal care use

Limitations

The quantitative component has potential for recall bias due to the interviews being conducted in the postpartum period. Perceptions of the women may have changed after the delivery, influencing responses to instrument items and leading to possible inaccuracy of the data. The sample size of 92 adolescents may not have been sufficient to reveal statistically significant findings. Other notable limitations are convenience sampling and potential for self-selection of the women. Women choosing to participate in the study may differ from those who chose not to participate; for example, women whose babies were apprehended by Child and Family Services after birth often declined to participate.

The sample for the qualitative component only included teens who received adequate prenatal care. The lack of participants who received inadequate prenatal care was likely due to the site used for recruitment. Although transferability was not the aim of this study, the homogeneity of the participants may limit generalizability of the qualitative results to other pregnant teenage populations in Canadian cities. If the participants were concerned about the interviewer sharing information with their care provider or family members; they may not have provided completely honest answers. Interviewing the adolescents in their third trimester may have helped to overcome recall bias related to their prenatal care experiences. Due to the timing of data collection, no information on the outcome of the pregnancies was obtained. There is always a risk for researcher's preconceptions to unconsciously bias the data. Regular discussions with the thesis advisor and other appropriate members of the research team helped to alleviate this.

Implications for Practice and Policy

Health Care Providers and Educators

Motivators to PNC found in this study need to be incorporated into future care of pregnant adolescents. This includes focusing on their desire to learn better health habits and to learn about labour and delivery. More time needs to be spent on the teen's learning needs and expectations. PNC providers need to educate teens on how to have a safe pregnancy, and place emphasis on the health of the teen and unborn baby. Supporting the teen to keep the baby from being apprehended by CFS, and referring the teen to other resources (i.e. dietitian, prenatal classes) are other important interventions that can be implemented by the health care provider. Health care providers need to ask the teens about their perceived barriers to care and work with the teen to problem solve and overcome those barriers. Whether the solutions are as simple as providing a bus pass due to transportation problems, or assisting them in finding a female PNC provider due to not wanting a male provider; the health care provider must feel a sense of responsibility in aiding the teen to overcome those barriers to PNC use.

If hours are reported as being inconvenient, the clinic should consider changing their hours to later in the evening. If the teen reports being afraid of medical tests, taking medicine and receiving needles, the health care provider should take the time to explain all the procedures, calm the teen down and provide reassurance that it is for the safety of the teen and unborn baby. Health care providers can assess the need for more social support among pregnant teens and ensure that they are linked with the proper resources whether it be having a parent or social worker become more involved in their care. In schools that are reporting high rates of teen pregnancy (especially First Nations), a teen

clinic should be opened at the school offering family planning services and initial PNC .

Teens who have had a previous birth were found to be at higher risk of inadequate PNC. This finding suggests that continued follow-up of pregnant teens would be useful to educate them on future pregnancy planning and provide individualized prenatal care that has early discussions about overcoming such obstacles as child care or transportation in possible future pregnancies.

Teens should not be passive recipients of information. Kuhn (2009) and Nucci (2001) recommended that they should be made partners in their life decisions. This is a time when teens are gaining more control over their lives. Therefore educators need to focus on helping teens find purpose in their ambitions, as this has the most consequence on which life path the teen chooses (Kuhn, 2009).

Some research has shown that supportive, high quality teaching can enhance self-esteem among those teens who had initial low self-esteem issues (Smith & Smoll, 1990; Stefanich, Wills, & Buss, 1991). Nurses and teachers can encourage all teens dealing with stress to talk to their parents or other trusted parental figures. Based on teen's reports of how important social support from their parental/maternal figure and the baby's father are, health care providers need to actively engage these people in the teen's care.

Parents

Interviewed teens reported that "Mom" was the most frequent provider of material and emotional support. This relationship needs to be nurtured by both teachers and health care providers. An authoritative parenting style combined with acceptance and warmth by other family members has been associated with increased self-esteem among teens (Dusek & McIntyre, 2003; Luster & McAdoo, 1995). Explaining situations to the

teen using adult rationale rather than the 'Because I said so,' can turn an argument into a learning experience (Herrman, 2005). Several studies have found that parental monitoring of their teenagers was the most important predictor to avoid contracting STD's/HIV (DiClemente, Crosby & Wingood, 2002), avoid pregnancy (Crosby, DiClemente, Wingood, Harrington, Davies et al., 2002) and other high risk behaviour (DiClemente, Wingood, Crosby, Sinean, Cook, et al., 2001). If health care providers are approached by parents asking for suggestions on dealing with their pregnant teen, the above recommendations can be shared.

Baby's Father

The baby's father was the most frequently mentioned person regarding unsupportive behaviour among interviewed teens. Based on findings from a U.S. study examining what factors influenced young fathers' involvement with their infants, the authors concluded that efforts to increase the fathers' involvement should be done by helping young parents separate the father-child relationship from the romantic mother-father relationship, nurture the roles played by maternal grandmothers, help fathers complete their education, and obtain and keep jobs (Gavin, Black, Minors, Abel, Papas & Bentley, 2002).

Recommendations for Future Research

This case control study focused on inner-city adolescents. Further research is needed to determine if factors associated with inadequate PNC use differ from adolescents living in suburban areas or in rural/northern areas. The qualitative study only included perceptions of teens who received adequate PNC. Those teens who receive inadequate PNC need to share their views on social support and its relationship to PNC.

An intervention study that focuses on increasing and enhancing social support for inner-city pregnant adolescents would be warranted based on the results of this study. CenteringPregnancy (Centering Healthcare Institute, Cheshire, CT) (group PNC) is one example of an enhanced PNC intervention that can be used specifically for adolescents. An intervention study by Grady & Bloom (2004) had positive feedback from the teens who participated in the CenteringPregnancy group. CenteringPregnancy is group PNC that involves small groups (8-10) of about the same maternal and gestational age. It has a strong educational component and also encourages participants to engage as much as possible with the routine procedures done at all appointments such as weights, blood pressures, blood glucose and urine checks. Positive influences were noted as increased PNC use, increased self-esteem and emotional support (Grady & Bloom, 2004).

Another intervention study done in the U.S. by Flynn, Budd & Modelski (2008), analysed 83 low-income pregnant adolescents in an intervention group, and compared them to 216 in the control group (usual care). Each month the intervention group received one home visit from a public health nurse and one visit from a social worker. The visits focused on assistance with accessing community resources, selecting a PNC provider, as well as making and scheduling appointments. Education and transportation to appointments was also offered to the teens. Findings showed a significant increase in community resource and PNC use compared to the control group (Flynn, Budd & Modelski, 2008). Replication of this approach in a Canadian setting may be warranted.

A U.S. retrospective cohort study (N=431) examined effects of a school based PNC program. During the school year teens who were enrolled in the program missed 12 less days of school and had half the dropout rate of teens in the non-school based

program (Barnet, Arroyo, Devoe & Duggan, 2004). Perhaps the Winnipeg School Division, Women's Hospital Teen Pregnancy Clinic and the Winnipeg Regional Health Authority could collaborate to fund and monitor a pilot project such as this to decrease the low educational attainment of pregnant and parenting teens that lead to other detrimental effects such as poverty.

Dissemination Plan

Knowledge translation is knowledge into action. It is the process by which knowledge or research findings are applied (Graham & Logan, 2004). It is combined with the need to simultaneously target multiple sectors, settings, agencies and providers (Graham & Logan, 2004). Upon completion of the study, an article will be submitted for publication to a journal such as the *Journal of Adolescent Health*. Study findings will be shared at conferences such as the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). The quantitative component of the study findings were shared in an oral presentation at the October 2010 AWHONN conference in Montreal. A report will be prepared upon completion of the study and shared with key stakeholders and policy makers. Members of the Winnipeg Regional Health Authority and the director of the Public Health Department will be presented with a report to influence policy changes. Health care professionals at Manitoba Health, the Adolescent Pregnancy Centre, and Adolescent Parent Interagency Network will also be made aware of the study findings. Disseminating findings to these various stakeholders may promote program development and policy change for the care of this adolescent population. In addition, study participants who requested will be provided with a summary of the results.

Conclusion

The results of this study show that teens who have higher levels of social support, (i.e. material, emotional, informational) mainly from a maternal figure are more likely to access and feel motivated to use prenatal care. The baby's father, social workers and prenatal care providers are also significant sources of support. These people need to be supported and encouraged to be involved with the teen's prenatal care. We know from the quantitative results that there are many barriers affecting adequate prenatal care use among these inner-city teens. Some could be relatively easy to overcome such as providing free transportation, having extended and weekend clinic hours and spacing bookings so that wait times are cut down. Other barriers are more complicated such as overcoming personal beliefs that the teen can take care of herself during pregnancy, or that she would rather go to friends and family for problems related to the pregnancy. Our findings show that motivators to using prenatal care are the teen's desire to have a healthy baby, and keep herself healthy during pregnancy. Prenatal care providers need to emphasize this during their appointments to increase continued and future use of prenatal care with subsequent pregnancies. Our results showed the higher odds of receiving inadequate prenatal care among First Nations, single, multiparous and low social support groups. Health care providers need to be more aware and sensitive when providing care to these higher risk groups.

In order to effectively intervene with teens, health care providers must address issues from the teen's perspective and not the adult's. All adults involved in the teens' life, such as teachers, parents and health care providers, need to intervene with a consistent message and support in order for the pregnant teen to have the best outcome

possible. Pregnant teens are vulnerable and are at the mercy of adults to support and walk them through the often confusing and complex medical and social system. Much of their destiny is based on what we as adults do for them, and society as a whole. As a society we must think in terms of the social determinants of health.

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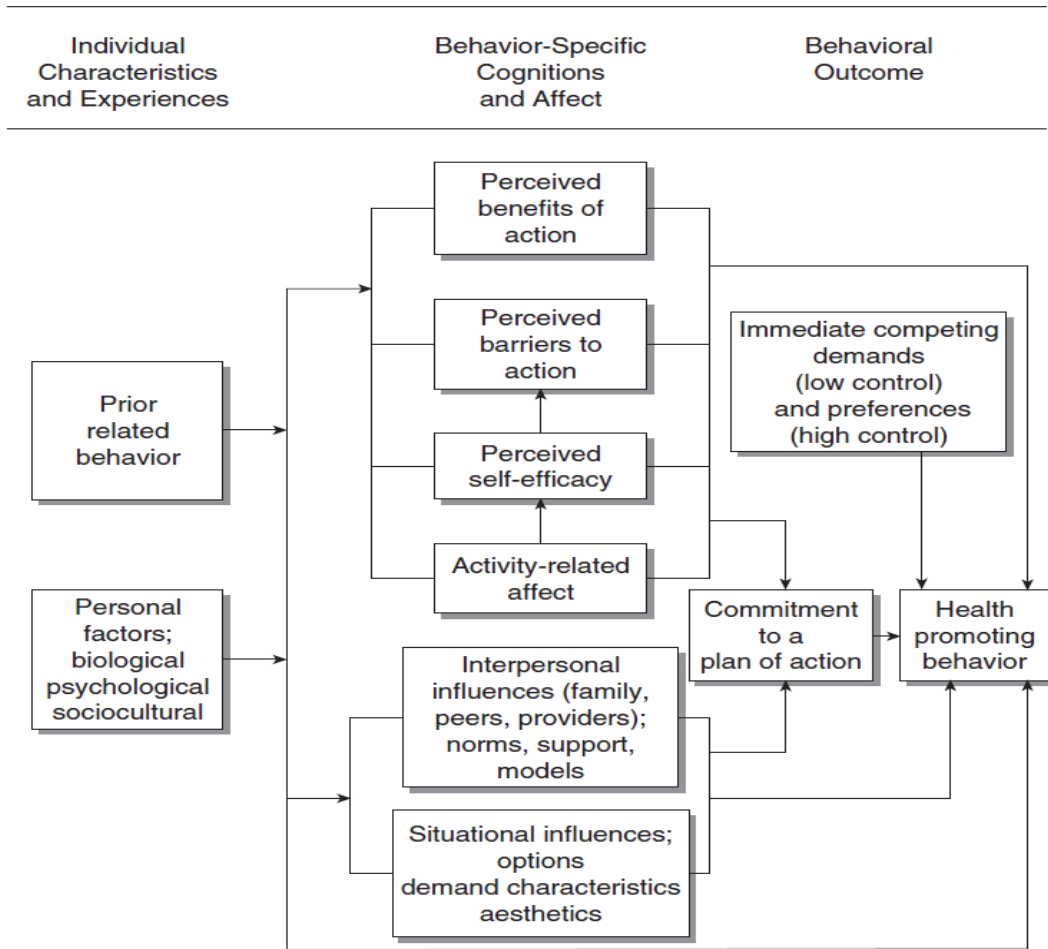
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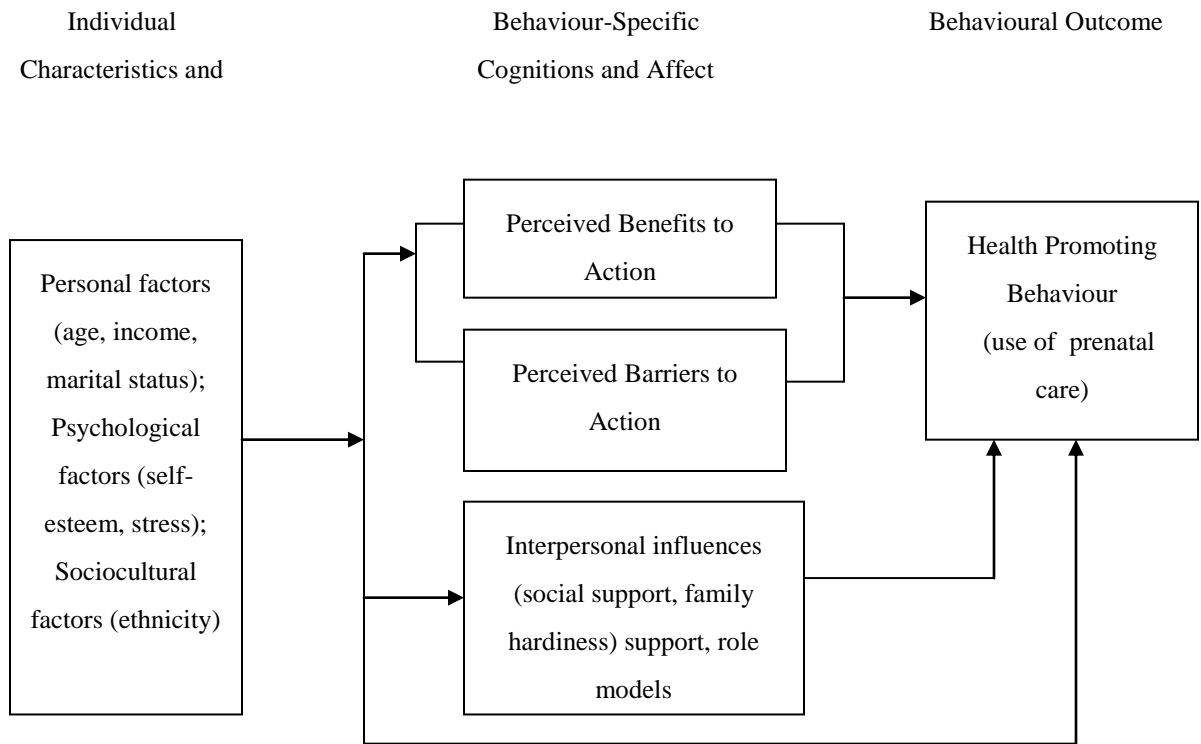
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Figure 1. Health Promotion Model



(Used with permission from Dr. Nola Pender, February 2, 2010)

Figure 2. Health Promotion Model modified for this study



Appendix A

Number of Live Births to Winnipeg Women under the age of 20 from 2003/04 to 2007/08

	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
Number	522	485	474	526	488

Source: Discharge Abstract Database

Notes:

- 1) Includes only in-hospital births.
- 2) Age is as of time of admission to hospital.

Health Information Management
Manitoba Health
December 18, 2009

Number of Live Births to Women under the age of 20 Residing in Downtown, Point Douglas and Inkster Neighbourhoods for 2003/04 to 2007/08

Neighbourhood	2003/2004	2004/2005	2005/2006	2006/2007	2007/2008
Inkster West	10	8	12	8	5
Inkster East	34	29	38	35	37
Downtown West	56	50	57	62	58
Downtown East	80	83	68	80	86
Point Douglas North	50	53	51	50	52
Point Douglas South	59	59	76	54	51

Source: Discharge Abstract Database

Notes:

- 1) Includes only in-hospital births.
- 2) Age is as of time of admission to hospital.

Source:
Health Information Management
Manitoba Health
December 21, 2009

Appendix B

Teen Pregnancy Rate per 1,000 by Winnipeg Community Area for 2008/09

Rate per 1,000 Females 15 to 19 years old	
Community Area	2008/2009
St. James-Assiniboia	29.3
Assiniboine South	13.1
Fort Garry	12.9
St. Vital	14.5
St. Boniface	19.6
Transcona	27.0
River East	37.6
Seven Oaks	33.4
Inkster	68.4
Point Douglas	97.6
Downtown	89.9
River Heights	28.9
Winnipeg	39.4

Source: Discharge Abstract Database

Notes:

- 1) *Includes in-hospital Deliveries, Therapeutic Abortions and Spontaneous Abortions only.*
- 2) *Rates calculated using population as of June 1 of each year.*

Health Information Management
November 29, 2010

Appendix C

Teen Pregnancy Rate per 1,000 by Winnipeg Community Area for 2009/10

Rate per 1,000 Females 15 to 19 years old	
Community Area	2009/2010
St. James-Assiniboia	24.4
Assiniboine South	11.4
Fort Garry	18.7
St. Vital	26.8
St. Boniface	26.1
Transcona	22.1
River East	32.8
Seven Oaks	30.9
Inkster	57.7
Point Douglas	105.8
Downtown	75.6
River Heights	23.3
Winnipeg	38.3

Source: Discharge Abstract Database

Notes:

- 1) *Includes in-hospital Deliveries, Therapeutic Abortions and Spontaneous Abortions only.*
- 2) *Rates calculated using population as of June 1 of each year.*

Health Information Management
January 4, 2011

Appendix D

Questionnaire from Dr. Heaman's Study,
"Factors Associated with Inadequate Prenatal Care
Among Inner-City Women in Winnipeg"

Note: Data collected for Dr. Heaman's study, using this questionnaire, is the source of data for the secondary analysis described in this study.

**FACTORS ASSOCIATED WITH INADEQUATE PRENATAL CARE
AMONG INNER-CITY WOMEN**

Structured Interview Guide

Subject Identification No.: _____

Group:

- Case (Inadequate Prenatal Care)1
- Control (Adequate Prenatal Care)0

Interviewer Initials: _____

Date of interview: ____/____/____
Day Month Year

Place of interview:

- St. Boniface Hospital.....1
- Women's Hospital, HSC.....2
- Home.....3
- Other (specify _____).....4

Place of delivery

- St. Boniface General Hospital.....1
- Health Sciences Centre.....2
- Other (specify _____).....3

Postal code (first 3 digits): _____

Neighborhood:

- River East A1
- Seven Oaks A.....2
- Inkster B3
- Point Douglas A.....4
- Point Douglas B.....5

Downtown A.....6
 Downtown B.....7
 River Heights B.....8

Start time of interview:

___ ___ ___ ___ hours (24 hour clock)

Your Pregnancy and Prenatal Care

I'd like to begin the interview by asking you some questions about your pregnancy, prenatal care and delivery.

1. What was the date of your delivery?

___ ___ / ___ ___ / ___ ___
 Day Month Year

2. What was your expected date of delivery, or your due date?

___ ___ / ___ ___ / ___ ___
 Day Month Year

3. How many weeks or months pregnant were you when you were *sure* you were pregnant? (For example, you had a pregnancy test or a doctor or nurse said you were pregnant.) (PRAMS)

___ ___ weeks **OR** ___ ___ months

Don't Know (DK).....88
 No Response (NR).....99

4. *A prenatal care visit is defined as a visit to a health professional, such as a physician, midwife or nurse practitioner, to receive medical care for your pregnancy (including physical assessments, screening tests and health teaching).*

Did you receive any prenatal care during your pregnancy?

Yes.....1
 No.....0 →**IF NO SKIP TO QUESTION 13**
 DK.....8
 NR.....9

5. (If yes) How many weeks or months pregnant were you when you had your first visit for prenatal care? (Do not count a visit that was only for a pregnant test.) (PRAMS)

___ weeks **OR** ___ months

DK.....88

NR.....99

6. Did you have any difficulty arranging for your first prenatal care visit?

Yes.....1

No.....0

DK.....8

NR.....9

7. How many days or weeks was it from the time you made your first prenatal appointment until the actual day of your visit? (adapted from NIH-DC Initiative)

___ Days **OR** ___ Weeks **OR** ___ Months

DK.....88

NR.....99

8. About how many visits for prenatal care did you have during your pregnancy? If you don't know how many, please give me your best guess.

___ visits

DK.....88

NR.....99

9. (Ask term mothers only.) How many visits for prenatal care did you have between 36 weeks and your delivery date?

___ visits

DK.....88

NR.....99

10. From which of the following types of providers did you receive prenatal care? (Circle all that apply)

Obstetrician

Yes.....1 (If yes, number of visits ___)

No.....0
 DK.....8
 NR.....9

Family doctor

Yes.....1 (If yes, number of visits ____)
 No.....0
 DK.....8
 NR.....9

Midwife

Yes.....1 (If yes, number of visits ____)
 No.....0
 DK.....8
 NR.....9

Nurse Practitioner

Yes.....1 (If yes, number of visits ____)
 No.....0
 DK.....8
 NR.....9

Other (specify _____)

Yes.....1 (If yes, number of visits ____)
 No.....0
 DK.....8
 NR.....9

11. Where did you receive most of your prenatal care?

Private physician's office.....1
 Clinic
 Mount Carmel Clinic.....2
 Hope Clinic.....3
 601 Aikens.....4
 385 River.....5
 NorWest Coop.....6
 Klinik.....7
 Outpatient department of hospital.....8
 Midwifery service.....9

Other (specify _____).....10
 DK.....88
 NR.....99

12. How satisfied were you with the prenatal care you received?

Very satisfied.....1
 Somewhat satisfied.....2
 Somewhat dissatisfied.....3
 Very dissatisfied4
 DK.....8
 NR.....9

13. (a) Did you visit an emergency room or obstetrical triage department during your pregnancy for a problem related to your pregnancy? (*adapted from NIH-DC Initiative*)

Yes.....1
 No.....0

(b) How many times did you go to an emergency room/obstetrical triage department for a problem related to your pregnancy?

___ ___ Times

14. (a) Were you admitted into the hospital during this pregnancy for a problem related to your pregnancy (not counting your delivery)? (*adapted from NIH-DC Initiative*)

Yes.....1
 No.....0

(b) How many times were you admitted to the hospital during this pregnancy (not counting your delivery)?

___ ___ Times

15. Women also receive other types of prenatal services and education when they are pregnant. Did you participate in any of the following programs during your pregnancy?

Healthy Baby/Healthy Start program

Yes.....1

No.....0
 DK.....8
 NR.....9

Families First program (home visitor)

Yes.....1
 No.....0
 DK.....8
 NR.....9

Antenatal Home Care Program

Yes.....1
 No.....0
 DK.....8
 NR.....9

Childbirth Education/Prenatal Classes

Yes.....1
 No.....0
 DK.....8
 NR.....9

Villa Rosa Program

Yes.....1
 No.....0
 DK.....8
 NR.....9

Other (specify _____)

Yes.....1
 No.....0
 DK.....8
 NR.....9

16. Did you have a regular health care provider before you got pregnant?

Yes.....1
 No.....0
 DK.....8
 NR.....9

→IF NO SKIP TO QUESTION 18

If so, what type of provider?

- Family doctor.....1
- Nurse Practitioner.....2
- Other (specify _____).....3

17. How many times did you see this provider in the year before you got pregnant?
 ____ ____ Times

Now I'd like to ask you some questions about how you felt about your pregnancy.

18. Thinking back to *just before* you got pregnant, how did you feel about becoming pregnant?
 (PRAMS)

- I wanted to be pregnant sooner.....1
- I wanted to be pregnant later.....2
- I wanted to be pregnant then.....3
- I didn't want to be pregnant then or at any time in the future...4

19. When you became pregnant with your new baby, were you trying to get pregnant? (PRAMS)

- Yes.....1
- No.....0

If yes, how many months did it take before you managed to get pregnant?

____ ____ Months.

20. How did you feel when you found out you were pregnant with this baby? Were you... (PRAMS)

- Very unhappy to be pregnant.....1
- Unhappy to be pregnant.....2
- Not sure.....3
- Happy to be pregnant4
- Very happy to be pregnant.....5

Reasons for getting prenatal care

21. I will now read some reasons why some women get prenatal care. Please tell me whether or not that reason made you go for prenatal care. (*adapted from NIH-DC Initiative*)

Did you get prenatal care.....

	YES	NO	N/A (No PNC)
a) to learn how to protect your health	1	0	7
b) because you were afraid that you would have problems during the pregnancy without prenatal care	1	0	7
c) to talk to someone about your pregnancy	1	0	7
d) to learn better health habits	1	0	7
e) to learn about labor and delivery	1	0	7
f) to have a healthy baby	1	0	7
g) because your family wanted you to get prenatal care	1	0	7
h) because your husband or boyfriend wanted you to get prenatal care	1	0	7
I) because your friends wanted you to get prenatal care	1	0	7

j)	because your health care provider or social worker wanted you to get prenatal care	1	0	7
----	--	---	---	---

22. I am going to read a list of things that women have told us make it easier for them to get prenatal care. Please tell me whether or not each one made it easier for you to get prenatal care.
(adapted from NIH-DC Initiative)

Was it easier for you to get prenatal care because.....

		YES	NO	N/A
a)	you got a ride to your appointment	1	0	7
b)	you got free transportation	1	0	7
c)	you got help paying for transportation	1	0	7
d)	it was easy to get to the appointment using public transportation	1	0	7
e)	a family member or friend provided child care	1	0	7
f)	you got free child care	1	0	7
g)	you got help paying for child care	1	0	7
h).	child care was available <u>near</u> where you had your appointment	1	0	7

i).	child care was available <u>at</u> the facility where you had your appointment	1	0	7
j).	the clinic <u>hours</u> were convenient for you	1	0	7
k).	flexible work schedule to attend appointments (or work allowed time off to attend appointments)	1	0	7

23. **If Participant Started PNC After 1st Trimester Ask:** The following is a list of things that affect women's decisions to get prenatal care. Please tell me if these reasons may have delayed or caused you difficulties in getting prenatal care. *(adapted from NIH-DC Initiative)*
Did you delay starting prenatal care or have difficulties in getting prenatal care because...

If Participant Started PNC During 1st Trimester Ask: The following is a list of things that affect women's decisions to get prenatal care. Please tell me if these reasons caused you difficulties in getting prenatal care *(adapted from NIC-DC Initiative)*. *Did you have difficulties in getting prenatal care because...*

		YES	NO	N/A
a)	you did not know where you could get prenatal care	1	0	7
b)	you could not get an appointment	1	0	7
c)	you had to wait too long to get an appointment	1	0	7
d)	your appointment was cancelled by clinic	1	0	7
e)	you didn't like the attitudes of the staff	1	0	7

f)	the hours at the clinic were not convenient for you	1	0	7
g)	you didn't think you could communicate with the staff	1	0	7
h)	you had transportation problems	1	0	7
i)	you had child care problems	1	0	7
j)	you could not get time off from work	1	0	7
k)	you had to wait too long in the waiting room to see your health care provider	1	0	7

24. **If Participant Started PNC After 1st Trimester Ask:** For many women their beliefs regarding prenatal care keep them from getting prenatal care. Please tell me if these reasons caused you to delay starting prenatal care or not go for prenatal care. *(adapted from NIH-DC Initiative)*

Did you delay starting prenatal care or not go for prenatal care because

If Participant Started PNC During 1st Trimester Ask: For many women their beliefs regarding prenatal care keep them from getting prenatal care. Please tell me if these reasons caused you to avoid going for some of your prenatal care visits. *(adapted from NIC-DC Initiative)*. *Did you avoid going for some of your prenatal care visits or not go for some of your prenatal care visits because...*

		YES	NO
a)	you were afraid of or did not like medical tests and examinations	1	0
b)	you do not like needles or taking medicine	1	0
c)	generally, you do not like health care workers	1	0

d)	you have been dissatisfied with the care you received	1	0
e)	you go to the emergency room or obstetrical triage unit when there is a problem with your pregnancy	1	0
f)	you did not know you were pregnant	1	0
g)	you did not think you needed prenatal care	1	0
h)	you can take care of yourself during pregnancy	1	0
i)	you get advice about pregnancy from family and friends	1	0
j)	you did not want to be examined by a man	1	0
k)	you did not want people to know you were pregnant	1	0
l)	the pregnancy was unplanned	1	0
m)	you were unhappy about being pregnant	1	0
n)	you were thinking of having an abortion	1	0
o)	You were worried about the risk of your baby being apprehended by CFS.	1	0

25. **If Participant Started PNC After 1st Trimester Ask:** For many women stress and personal issues in their lives keep them from getting prenatal care. Please tell me if any of these reasons delayed you or caused you difficulties in getting prenatal care. (*adapted from NIH-DC Initiative*)
Did you delay starting prenatal care or not go for prenatal care because

If Participant Started PNC During 1st Trimester Ask: For many women stress and personal issues in their lives keep them from getting prenatal care. Please tell me if any of these reasons caused you difficulties in getting prenatal care (*adapted from NIC-DC Initiative*). *Did you have difficulties in going for prenatal care because... .*

		YES	NO
a)	you did not feel well	1	0
b)	of family problems	1	0
c)	of problems with your husband or boyfriend	1	0
d)	you got beat up by your husband or boyfriend	1	0
e)	you had been under stress	1	0
f)	you were depressed	1	0
g)	you did not feel good about yourself	1	0
h)	of personal problems	1	0
i)	you were not thinking straight	1	0
j)	you forgot the appointment	1	0
k)	you were moving a lot	1	0

l)	you were/are homeless	1	0
m)	you were afraid of crime near your home or the clinic	1	0

26. Please tell me to what extent the following things would help you get more prenatal care than you did? (*adapted from NIH-DC Initiative*) (**SHOW RESPONSE CARD**)

How much of a difference would it make if...

	A LOT	SOME	A LITTLE	NONE	NA
a) you got help with completing forms. Would you say.....	1	2	3	4	7
b) you got incentives - such as gifts or money. Would you say.....	1	2	3	4	7
d) you got rides to the clinic	1	2	3	4	7
e) you got child care assistance	1	2	3	4	7
f) you had a home visitor	1	2	3	4	7
g) the clinic had hours convenient for you	1	2	3	4	7
h) you got a call to follow-up on missed appointments	1	2	3	4	7
I) the staff were easy to understand	1	2	3	4	7

- j) the staff were from the same country as you 1 2 3 4 7
- k) you had financial support 1 2 3 4 7
- l) you had emotional support 1 2 3 4 7

27. Could you travel easily to your prenatal care appointments?

- Yes.....1
- No.....0

28. How did you get to your prenatal appointments?

(CIRCLE ALL THAT APPLY)

- Walk.....1
- Bus.....2
- My own car.....3
- Friend or family member's car.....4
- Taxi.....5
- Other (specify _____).....6

29. How long did it take you to travel to your prenatal appointment?

___ ___Minutes or ___ ___Hours

30. In general, were you encouraged or discouraged to get prenatal care? (*adapted from NIH-DC Initiative*)

- Encouraged.....1
- Discouraged.....2
- Neither.....3

31. Referring to Show card, who (encouraged/discouraged) you the most?

(CIRCLE ONE ONLY, SHOW RESPONSE CARD AND READ)

- Mother or father.....1
- Grandmother or grandfather.....2
- Sister or brother.....3
- Husband or boyfriend.....4
- Friend.....5
- Doctor.....6
- Midwife.....7
- Nurse.....8
- Social worker.....9
- Nutritionist.....10
- Home Visitor from Families First Program..11
- Other person12
- Not Applicable.....13

(SPECIFY)

32. Do you have a preference for the race or ethnic group of your prenatal care provider? (*adapted from NIH-DC Initiative*)

- Yes.....1
- No.....0 →**SKIP TO QUESTION 34**

33. What race or ethnic group would you prefer your prenatal care provider to be?

- Black/African American.....1
- Hispanic/Latino.....2
- Asian/Pacific islander.....3
- White.....4
- Aboriginal (First Nations/Metis/Inuit).....5
- Other.....6

(SPECIFY)

34. Do you have a preference for the sex of your prenatal care provider? (*adapted from NIH-DC Initiative*)

- Yes.....1
- No.....0 → **SKIP TO QUESTION 36**

35. Which sex would you prefer your prenatal care provider to be?

- Male.....1
- Female.....2

Health Behaviours and Lifestyle

I would now like to ask you some questions about your use of cigarettes, alcohol and drugs during your pregnancy.

36. Did you smoke cigarettes during the month before you became pregnant?

- Yes.....1
- No.....0 → **SKIP TO QUESTION 38**
- NR.....9

(adapted from Ottawa Carleton Health Department and Regional Perinatal Program Questionnaire)

37. How many cigarettes did you smoke each day in the month before you became pregnant (on average)?

- No. of cigarettes per day_____
- NA.....7
- DK.....8
- NR.....9

(adapted from Ottawa Carleton Health Department and Regional Perinatal Program Questionnaire)

38. Did you smoke cigarettes after you knew you were pregnant?

- Yes.....1
- No.....0 → **SKIP TO QUESTION 41**
- NR.....9

(adapted from Ottawa Carleton Health Department and Regional Perinatal Program Questionnaire)

39. How many cigarettes did you smoke each day, on average,...
- During the first three months of your pregnancy? _____
- During the second three months of your pregnancy? _____
- During the third three months of your pregnancy? _____
40. Did you start prenatal care later because you didn't want others to know you were smoking during your pregnancy?
- Yes.....1
- No.....0

41. How often did you drink alcohol during your pregnancy (e.g. beer, wine, hard liquor, liqueurs)?
(Do not read list, mark one only)
- Never0 → **SKIP TO QUESTION 44**
- Less than once a month.....1
- 1-3 times a month.....2
- Once a week.....3
- 2-3 times a week.....4
- 4-6 times a week.....5
- Every day.....6
- NA.....7
- DK.....8
- NR.....9

(adapted from National Population Health Survey, Statistics Canada 1994)

42. When we use the word drink it means: one beer, one small glass of wine, or 1 1/2 ounces of liquor. On the days that you drank, how many drinks did you usually have?
- Before realizing you were pregnant? _____
- During the first three months of your pregnancy? _____
- During the second three months of your pregnancy? _____
- During the third three months of your pregnancy? _____

(adapted from National Population Health Survey, Statistics Canada, 1994)

43. Did you start prenatal care later because you didn't want others to know you were drinking during your pregnancy?

Yes.....1

No.....0

The next questions are about drug use during pregnancy. Please answer these questions honestly; we will not tell anyone about your answers. We are interested in recreational or street drugs, those for which you don't have a prescription.

44. Did you take any recreational drugs such as marijuana, LSD or cocaine during your pregnancy?

Yes.....1

No.....0 → **SKIP TO QUESTION 48**

NR.....9

(adapted from National Population Health Survey, Statistics Canada, 1994)

45. Which of the following drugs did you take?

a) Marijuana/Hashish:

Yes.....1

No.....0

NR.....9

b) LSD:

Yes.....1

No.....0

NR.....9

c) Cocaine:

Yes.....1

No.....0

NR.....9

d) Crack cocaine:

Yes.....1

No.....0

NR.....9

e) Heroin:

Yes.....1

No.....0

NR.....9

f) Crystal Meth:

Yes.....1

No.....0

NR.....9

g) Other (specify _____):

Yes.....1

No.....0

NR.....9

(adapted from National Population Health Survey, Statistics Canada, 1994)

46. At what stage in your pregnancy did you take these drugs? (READ LIST. MARK ALL THAT APPLY)

a) Before realizing you were pregnant?

Yes.....1

No.....0

NR.....9

b) During the first three months?

Yes.....1

No.....0

NR.....9

c) During the second three months?

Yes.....1

No.....0

NR.....9

d) During the third three months?

Yes.....1

No.....0

NR.....9

e) Throughout your pregnancy?

Yes.....1

No.....0

NR.....9

(adapted from National Population Health Survey, Statistics Canada, 1994)

47. Did you start prenatal care later because you didn't want others to know you were using drugs during your pregnancy?

Yes.....1

No.....0

Stress, Social Support, Self Esteem, and Resilience (Family Hardiness)

I'd now like to ask you some questions about the amount of stress you experienced during your pregnancy. It is important to think back to how you felt during your pregnancy and not let how you are feeling now influence your answer.

For each of the next four questions, you will be asked how often you felt or thought a certain way, choosing from the following answers: never, almost never, sometimes, fairly often, or very often. *(from Cohen's perceived stress scale)* **(SHOW RESPONSE CARD)**

48. During your pregnancy, how often did you feel that you were unable to control the important things in your life?

Never.....0

Almost never.....1

Sometimes.....2

Fairly often.....3

Very often.....4

DK.....8

NR.....9

49. During your pregnancy, how often did you feel confident about your ability to handle your personal problems?

Never.....0

Almost never.....1

Sometimes.....2

Fairly often.....3

Very often.....4

DK.....8

NR.....9

50. During your pregnancy, how often did you feel that things were going your way?

Never.....	0
Almost never.....	1
Sometimes.....	2
Fairly often.....	3
Very often.....	4
DK.....	8
NR.....	9

51. During your pregnancy, how often did you feel difficulties were piling up so high that you could not overcome them?

Never.....	0
Almost never.....	1
Sometimes.....	2
Fairly often.....	3
Very often.....	4
DK.....	8
NR.....	9

Assessment of Self Esteem (Rosenberg)

52. We all have some kind of "picture" of ourselves we carry with us. I'm going to read you a list of statements that people have used to describe themselves. I would like you to tell me how much you agree or disagree that this statement described yourself during your pregnancy (**SHOW FACES RESPONSE CARD**)

	Strongly Agree	Agree	Disagree	Strongly Disagree
53. Felt that you were a person of worth, at least on an equal plane with others.	1	2	3	4
54. Felt that you had a number of good qualities.	1	2	3	4
55. All in all, you were inclined to feel that you were a failure.	1	2	3	4
56. Felt that you were able to do things as well as most other people.	1	2	3	4
57. Felt that you did not have much to be proud of.	1	2	3	4
58. Took a positive attitude toward yourself.	1	2	3	4
59. On the whole, felt satisfied with yourself.	1	2	3	4
60. Wished you could have had more respect for yourself.	1	2	3	4
61. Certainly felt useless at times.	1	2	3	4
62. At times thought you were no good at all.	1	2	3	4

Interpersonal Support Evaluation List

Instructions: *This scale is made up of a list of statements, each of which may or may not be true about you. Please tell me how true or false the statement is about you during your pregnancy. Thinking back to when you were pregnant... (SHOW RESPONSE CARD)*

	Completely False	Somewhat False	Somewhat True	Completely True
63. If you had to go out of town for a few weeks, someone you know would look after your home, such as watering the plants or taking care of the pets.	1	2	3	4
64. If you were sick and needed someone to drive you to the doctor, you would have trouble finding someone.	1	2	3	4
65. If you were sick, you would have trouble finding someone to help you with your daily chores.	1	2	3	4
66. If you needed help moving, you would be able to find someone to help you.	1	2	3	4
67. If you needed a place to stay for a week because of an emergency, such as the water or electricity being out in your home, you could easily find someone who would put you up.	1	2	3	4
68. There is at least one person you know whose advice you really trust.	1	2	3	4

- | | | | | | |
|-----|---|---|---|---|---|
| 69. | There is no one you know who will tell you honestly how you are handling your problems. | 1 | 2 | 3 | 4 |
| 70. | When you need suggestions about how to deal with a personal problem, you know there is someone you can turn to. | 1 | 2 | 3 | 4 |
| 71. | There isn't anyone you feel comfortable talking to about intimate personal problems. | 1 | 2 | 3 | 4 |
| 72. | There is no one you trust to give you good advice about money matters. | 1 | 2 | 3 | 4 |
| 73. | You are usually invited to do things with others. | 1 | 2 | 3 | 4 |
| 74. | When you feel lonely, there are several people you could talk to. | 1 | 2 | 3 | 4 |
| 75. | You regularly meet or talk with your friends or members of your family. | 1 | 2 | 3 | 4 |
| 76. | You often feel left out by your circle of friends. | 1 | 2 | 3 | 4 |
| 77. | There are several different people you enjoy spending time with. | 1 | 2 | 3 | 4 |

Family Stress, Coping and Health Project
School of Human Ecology, 1300 Linden Drive
University of Wisconsin-Madison

FAMILY HARDINESS INDEX

Marilyn A. McCubbin Hamilton I. McCubbin Anne I. Thompson

Directions:

Please read each statement below and decide what degree each describes your family. Is the statement **False (0), Mostly False (1), Mostly True (2), or True (3)** about your family? Circle a number 0 to 3 to match your feelings about each statement.

Please respond to each and every statement (**SHOW RESPONSE CARD**)

<i>In our family.....</i>	False	Mostly False	Mostly True	True
78. Trouble results from mistakes we make	0	1	2	3
79. It is not wise to plan ahead and hope because things do not turn out anyway	0	1	2	3
80. Our work and efforts are not appreciated no matter how hard we try and work	0	1	2	3
81. In the long run, the bad things that happen to us are balanced by the good things that happen	0	1	2	3
82. We have a sense of being strong even when we face big problems	0	1	2	3
83. Many times I feel I can trust that even in difficult times things will work out	0	1	2	3
84. While we don't always agree, we can count on each other to stand by us in times of need	0	1	2	3
85. We do not feel we can survive if another problem hits us	0	1	2	3
86. We believe that things will work out for the better if we work together as a family	0	1	2	3
87. Life seems dull and meaningless	0	1	2	3
88. We strive together and help each other no matter what	0	1	2	3
89. When our family plans activities we try new and exciting things	0	1	2	3
89 (a). We listen to each others' problems, hurts and fears	0	1	2	3
90. We tend to do the same things over and over....it's boring	0	1	2	3

<i>In our family. . . .</i>	False	Mostly False	Mostly True	True
91. We seem to encourage each other to try new things and experiences	0	1	2	3
92. It is better to stay at home than go out and do things with others	0	1	2	3
93. Being active and learning new things are encouraged	0	1	2	3
94. We work together to solve problems	0	1	2	3
95. Most of the unhappy things that happen are due to bad luck	0	1	2	3
96. We realize our lives are controlled by accidents and luck	0	1	2	3

Discrimination:

Have you ever felt you were discriminated against, or hassled, or made to feel inferior because of your race or color:

97. At school?

- Yes.....1
- No.....0
- DK.....8
- NR.....9

98. When you tried to get a job?

- Yes.....1
- No.....0
- DK.....8
- NA.....9

99. At work?

- Yes.....1
- No.....0
- DK.....8
- NA.....9

100. When you tried to get medical care for this pregnancy?

- Yes.....1
- No.....0
- DK.....8
- NA.....9

101. When you tried to get housing?

Yes.....1
 No.....0
 DK.....8
 NA.....9

102. In your dealings with the police or in a court?

Yes.....1
 No.....0
 DK.....8
 NA.....9

(This inventory of perception of racial discrimination was developed by N. Krieger for the CARDIA study)

Perceived safety of neighbourhood:

103. How safe do you feel your neighbourhood is at night?

Very safe.....1
 Somewhat safe.....2
 Somewhat unsafe.....3
 Very unsafe.....4
 DK.....5
 NR.....6

104. How safe do you feel your neighbourhood is during the day?

Very safe.....1
 Somewhat safe.....2
 Somewhat unsafe.....3
 Very unsafe.....4
 DK.....5
 NR.....6

105. How often do break-ins, burglaries, and other property crimes happen in your neighbourhood?

(SHOW RESPONSE CARD).

Never.....1
 Almost never.....2
 Sometimes.....3
 Fairly often.....4
 Very often.....5
 DK.....6
 NR.....7

106. How often do muggings, beatings, and other personal crimes happen in your neighbourhood?

- Never.....1
- Almost never.....2
- Sometimes.....3
- Fairly often.....4
- Very often.....5
- DK.....6
- NR.....7

107. How often do shootings happen in your neighborhood?

- Never.....1
- Almost never.....2
- Sometimes.....3
- Fairly often.....4
- Very often.....5
- DK.....6
- NR.....7

108. How often do police make arrests in your neighborhood?

- Never.....1
- Almost never.....2
- Sometimes.....3
- Fairly often.....4
- Very often.....5
- DK.....6
- NR.....7

109. How often does drug dealing happen in your neighbourhood?

- Never.....1
- Almost never.....2
- Sometimes.....3
- Fairly often.....4
- Very often.....5
- DK.....6
- NR.....7

(from PIN study - source: Stancil et al., 2000; permission to use questions #1-7 obtained from Dr. Irva Hertz-Picciotto)

110. How do you feel about your neighborhood as a place to bring up children? (NLSCY)

- Excellent.....1
- Good.....2
- Average.....3
- Poor.....4
- Very poor.....5
- DK.....6
- NR.....7

111. If there is a problem around here the neighbours get together to deal with it. **(SHOW FACES RESPONSE CARD)**

- Strongly agree.....1
- Agree.....2
- Disagree.....3
- Strongly disagree.....4
- DK.....8
- NR.....9

112. There are adults in the neighbourhood that children can look up to.

- Strongly agree.....1
- Agree.....2
- Disagree.....3
- Strongly disagree.....4
- DK.....8
- NR.....9

113. People around here are willing to help their neighbours.

- Strongly agree.....1
- Agree.....2
- Disagree.....3
- Strongly disagree.....4
- DK.....8
- NR.....9

114. You can count on adults in this neighborhood to watch out that children are safe and don't get in trouble.

- Strongly agree.....1
- Agree.....2
- Disagree.....3
- Strongly disagree.....4
- DK.....8
- NR.....9

115. When I'm away from home, I know that my neighbours will keep their eyes open for possible trouble.

- Strongly agree.....1
- Agree.....2
- Disagree.....3
- Strongly disagree.....4
- DK.....8
- NR.....9

5-item scale of neighborhood cohesiveness: (Perceived Collective Efficacy, Foster et al., 2001) (NLSCY)

116. Are you involved in any local voluntary organizations, such as school groups, church groups, community or ethnic associations?

- Yes.....1
- No.....0
- DK.....8
- NR.....9

117. Other than on special occasions (weddings, funerals, or baptisms), how often did you attend religious services or meetings in the past 12 weeks?

- None.....1
- More than once a week.....2
- Weekly.....3
- Every 2 to 3 weeks.....4
- Monthly.....5
- DK.....8
- NR.....9

Social Capital: (NLSCY)

About Yourself

We're almost done the interview. I'd like to end off by asking you several questions about yourself.

118. What is your age (in years)? _____

119. What is your current marital status?

- Married and living with spouse.....1
- Common-law relationship or live-in partner.....2
- Single - never married.....3 →**SKIP TO QUESTION 121**
- Divorced.....4 →**SKIP TO QUESTION 121**
- Separated.....5 →**SKIP TO QUESTION 121**
- Widowed.....6 →**SKIP TO QUESTION 121**
- NR.....9

(adapted from Winnipeg Area Survey, 1984-1998, University of Manitoba Department of Sociology)

120. In what year did you start living together with your current husband or partner?

_____ (record year)

121. What kind of housing are you currently living in (type of dwelling)?

- House.....1
- Apartment.....2
- Duplex/Four-plex.....3
- Townhouse.....4
- Institution.....5
- Specify: _____

- Villa Rosa.....6
 - Collective (group) dwelling.....7
 - (e.g. hotel, shelter, boarding house, colony)
 - Specify: _____
 - Other.....8
- Source: Health Canada, NPHS, 1996*

122. What is your current postal code (first 3 digits)? ____ ____ ____

123. Do you rent or own this dwelling (housing you are currently living in)?
- Rent my own dwelling1
 - Own my own dwelling2
 - Living with family/friend (no rent paid)3
 - Other (specify _____).....5

Source: Health Canada, NPHS, 1996

124. How many times have you moved (that is, changed residences) in the last year?
 Number of times _____

125. How many times have you moved (that is, changed residences) in the last five years, including
 the last year?
 Number of times _____

126. What is your highest level of education? This includes complete and incomplete (Circle highest level).

- No schooling.....1
- Elementary school
 - Incomplete.....2
 - Complete.....3
- Junior High School
 - Incomplete.....4
 - Complete.....5
- High School
 - Incomplete.....6
 - Complete.....7
- Non-University (Vocational/technical)
 - Incomplete.....8
 - Complete.....9
- University
 - Incomplete.....10
 - Diploma/Certificate (e.g. hygienists).....11

Bachelor's Degree.....	12
Professional Degree (Vet,Dr., Lawyer).....	13
Master's Degree.....	14
Doctorate.....	15
NR.....	99

(adapted from Winnipeg Area Survey, 1984-1998, University of Manitoba Department of Sociology)

127. How many years of formal education have you completed starting with grade one and not counting repeated years at the same level? (Research Nurse Note: This includes total of grade school, high school, vocational, technical, and university).
 _____ Years

128. Did you have a paid job of any kind during your pregnancy?
 Yes.....1 →**SKIP TO QUESTION 130**
 No.....0
 NR.....9

(adapted from Winnipeg Area Survey, 1984-1998, University of Manitoba Department of Sociology)

129. During your pregnancy, were you unemployed, that is, out of work and looking for work?
 Yes.....1 →**SKIP TO QUESTION 131**
 No.....0 →**SKIP TO QUESTION 131**
 NA.....7
 NR.....9

(adapted from Winnipeg Area Survey, 1984-1998, University of Manitoba Department of Sociology)

130. On average, how many hours did you work for pay each week during your pregnancy? (This total includes all of your jobs: full-time and part-time)
 _____ hours

NA.....	7
DK.....	8
NR.....	9

(adapted from Winnipeg Area Survey, 1984-1998, University of Manitoba Department of Sociology)

131. People also do a variety of other types of work even though it may not involve a paid job. For each of the following, please tell me if it applied to you during your pregnancy. **(RESPONDENT ANSWERS ALL QUESTIONS. RECORD "SHARED" ONLY IF VOLUNTEERED).**

	Yes	No	Shared	NA	NR
Mainly responsible for housework	1	2	3	4	5
Mainly responsible for raising child(ren)	1	2	3	4	5
Taking care of some other dependent person (elderly, disabled, grandparent)	1	2	3	4	5
Going to school or studying in some program	1	2	3	4	5
Doing some volunteer work	1	2	3	4	5

(adapted from Winnipeg Area Survey, 1984-1998, University of Manitoba Department of Sociology)

132. Some evidence suggests that women with lower family incomes may be less likely to get prenatal care. We would like to know the total income of all the members of your household for this past year before tax and deductions. Please remember that your response will be kept confidential. **(SHOW RESPONSE CARD)**

No income.....	1
Under \$10,000.....	2
\$10,000-19,999.....	3
\$20,000-29,999.....	4
\$30,000-39,999.....	5
\$40,000-49,999.....	6
\$50,000-59,999.....	7
\$60,000-69,999.....	8
\$70,000-79,999.....	9
\$80,000-89,999.....	10
\$90,000-99,999.....	11
\$100,000 or over.....	12
DK.....	88
NR.....	99

(adapted from Winnipeg Area Survey, 1984-1998, University of Manitoba Department of Sociology)

133. Which of the following best describes your racial background? Would you say...

Aboriginal (Inuit, Metis, North American Indian).....	1
Arab/West Asian (e.g., Armenian, Egyptian, Iranian, Lebanese, Moroccan).....	2
Black (e.g., African, Haitian, Jamaican, Somali).....	3
Chinese.....	4
Filipino.....	5
Japanese.....	6
Korean.....	7
Latin American.....	8
South Asian (e.g., East Indian, Pakistani, Punjabi, Sri Lankan).....	9
South East Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese).....	10
White (Caucasian).....	11
Other.....	12

(Statistics Canada concept definitions; NPHS 98-99)

134. The ancestors of Canadians come from many ethnic and cultural groups such as Inuit, French, Scottish, and Chinese. Which of the following best describes the ethnic or cultural group(s) to which you belong? (Accept multiple responses)

English.....	1
French.....	2
German.....	3
Scottish.....	4
Italian.....	5
Irish.....	6
Ukrainian.....	7
Chinese.....	8
Dutch (Netherlands).....	9
Jewish.....	10
Polish.....	11
Black.....	12
First Nations (Registered).....	13
First Nations (Non-registered).....	14

Metis.....	15
Inuit/Eskimo.....	16
Other (specify.....)	17
Canadian (probe: Any other group?)....	18
DK.....	88
NR.....	99

(adapted from General Social Survey, Statistics Canada, 1991)

135. Were you born in Canada?

Yes.....	1	→ SKIP TO QUESTION 138
No.....	0	

If no, what was your country of birth? _____

If no, what is the total number of years you have lived in Canada?
years _____

136. Are you now, or have you ever been, a landed immigrant in Canada?

Yes.....	1	→ SKIP TO QUESTION 138
No.....	0	
DK.....	8	
NR.....	9	

137. Do you currently have refugee status in Canada?

Yes.....	1
No.....	0
DK.....	8
NR.....	9

138. What language do you speak most often at home? (Accept multiple response only if languages are spoken equally)

English.....	1
French.....	2
Italian.....	3
German.....	4
Ukrainian.....	5
Dutch.....	6

Chinese.....	7
Hungarian.....	8
Portuguese.....	9
Polish.....	10
Cree.....	11
Ojibway.....	12
Saulteaux.....	13
Island Lake.....	14
Other (specify.....)	15
DK.....	88
NR.....	99

(adapted from General Social Survey, Statistics Canada, 1991)

Abuse Assessment Screen (McFarlane, Parker, Soeken, & Bullock, 1992)

Finally, I would like to ask you some questions about emotional and physical abuse. We know that the incidence of abuse often increases during pregnancy, and this is a reason some women don't seek prenatal care. Please answer these questions honestly; we will not tell anyone about your answers.

139. Have you ever been emotionally or physically abused by your partner or someone important to you?

Yes.....1

No.....0

140. *In the year prior to getting pregnant*, were you ever hit, slapped, kicked, or otherwise physically hurt by someone?

Yes.....1

No.....0

If yes, by whom? (circle all that apply)

Husband Ex-husband Boyfriend Stranger Other Multiple

Total number of times _____

141. *During your pregnancy*, were you ever hit, slapped, kicked, or otherwise physically hurt by someone?

Yes.....1

No.....0

If yes, by whom? (circle all that apply)

Husband Ex-husband Boyfriend Stranger Other Multiple

Total number of times _____

142. *During your pregnancy*, did anyone force you to have sexual activities?

Yes.....1

No.....0

If yes, by whom? (circle all that apply)

Husband Ex-husband Boyfriend Stranger Other Multiple

Total number of times _____

143. Are you afraid of your partner or anyone you listed above?

Yes.....1

No.....0

144. Did you start prenatal care later because you didn't want others to know you were being abused

during your pregnancy?

Yes.....1

No.....0

145. Did this interview bring up any concerns or questions that you would like to discuss with your health care provider?

Yes.....1

No.....0

146. Would you like me to approach your health care provider with this concern or question for you?

Yes.....1

No.....0

That concludes the interview. Is there anything you would like to add?

Thank you very much for your participation.

Finish time for interview: ____ ____ ____ hours (24 hour clock)

Length of interview in minutes: ____ ____ minutes

Interviewer comments:

Appendix E
(TO BE TYPED ON UNIVERSITY OF MANITOBA LETTERHEAD)
RESEARCH SUBJECT INFORMATION AND CONSENT FORM
(For Qualitative Component of Study)

Research Project Title: Factors Related to Adequate and Inadequate Use of Prenatal Care among Adolescents in Inner-City Winnipeg: A Mixed Methods Study

Principal Investigator: Jenny Shnitka, RN, BN, Master of Nursing Graduate Student, Faculty of Nursing, University of Manitoba; Thesis Supervisor Dr. Maureen Heaman, Professor, Faculty of Nursing, University of Manitoba, University of Manitoba, Winnipeg, MB R3T 2N2.

You are being asked to take part in a research study. This information form should give you a basic idea of what the research is about and what you are being asked to do. You will be given a copy of this form to keep. If you have any questions about the study, feel free to ask the researcher, Jenny Shnitka. Please take the time to read this carefully.

Purpose of the Study:

The purpose of this study is to explore the factors related to adequate and inadequate prenatal care use among adolescents in Winnipeg, Manitoba. The study will also examine circumstances that motivate women to use prenatal care, specifically focusing on social support. This study is being conducted as the researcher's thesis project.

Women Who May Participate in the Study:

Women are being asked to take part in this study if they are pregnant, aged 19 years or less, and live in one of eight Winnipeg inner-city neighbourhoods (River East A, Seven Oaks A, Inkster B, Point Douglas A, Point Douglas B, Downtown A, Downtown B, or River Heights B); as determined by your postal code.

Procedures:

If you agree to take part in this study, the researcher, Jenny Shnitka, will interview you about your life experiences and your prenatal care use during your pregnancy. You will be asked a number of questions about your life, your family supports, your pregnancy, the prenatal care you received, and circumstances or reasons that motivated you to seek prenatal care. The interview will take approximately one hour, and will take place at a time and location that is convenient for you. The interview will be audio-taped (tape-recorded) and later transcribed (typed out). You will also be asked to complete a brief demographic form that asks some background questions about your age, education, marital status, and ethnic background. Once the data obtained during the study has been analyzed, the researcher may contact you to discuss the results of the study in order to verify the findings of the study.

Confidentiality:

All information gathered for this study will be kept strictly confidential, except if you reveal a situation of child abuse, in which case the law says we must report the abuse. Your interview tape will not contain any identifiable information about you and will not identify you by name. Any information that you provide will be identified with a unique code number that has been assigned only to you. The researcher will keep a list of participant names that match these code numbers. This list will be destroyed as soon as the study is completed. This list and the taped interview will be stored separately in a locked filing cabinet at the University of Manitoba. The tape recordings will stay in the locked cabinet and then be destroyed 5 years after the study ends. Your individual identity will not be revealed in reports or articles that describe the results of this study. Only the researcher; Jenny Shnitka, and her thesis advisor, Dr. Maureen Heaman, will have access to the tape recordings, notes and transcripts. The researcher, Jenny Shnitka will be doing the transcribing.

Members of the Education/Nursing Research Ethics Board at the University of Manitoba or the Health Sciences Center may review your research-related records to make sure this study meets quality guidelines.

Risks:

There are no known risks to participating in this study.

Benefits:

There are no direct benefits involved in participating in this study. However, your answers may help to improve future services for pregnant women.

Compensation:

You will receive a \$10.00 honorarium to thank you for taking the time to participate in this study.

Voluntary Participation and Withdrawal:

Your participation in this study is completely voluntary and your decision about whether or not to take part will not affect the care you receive in any way. You have the right to not answer any of the questions you are asked. You also have the right to stop taking part in the study at any time, without prejudice or consequence. You may verbally indicate your desire to withdraw from the study at any point. All information collected from women who decide to withdraw will be destroyed.

Feedback to Participants:

We will mail you a summary of the results of the study if you would like one. Please complete the attached page with your name and address if you would like to receive a summary of the results.

Statement of Consent

Your signature on this form means that you have had the study explained to you in a language that you understand, all questions have been answered to your satisfaction, and that you agree to take part as a subject. In no way does this waive your legal rights, nor does it release the researchers, funding agency, or involved institutions from their legal and professional responsibilities. You can stop taking part in the study at any time, and /or refuse to answer any questions you are not comfortable with. You should feel free to ask questions at any time during or after the study from either Jenny Shnitka (Ph. 204-275-5591) or her thesis supervisor, Dr. Maureen Heaman (Ph. 204-474-6222).

This research project has been approved by the Education/Nursing Research Ethics Board of the University of Manitoba. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Secretariat at 204-474-7122, or e-mail margaret_bowman@umanitoba.ca. A copy of this consent form has been given to you to keep for your records.

Participant's Signature _____
Date

Printed name of above: _____

Researcher and/or Delegate's Signature _____
Date

Printed name of above: _____

ALL SUBJECTS MUST SIGN AND DATE THEIR OWN SIGNATURE.**In the case of non-emancipated minors:**

Participant's Signature _____
Date

Printed name of above: _____

Legal Guardian's Signature _____
Date

Printed name of above: _____

Researcher and /or Delegate's Signature _____
Date

After all interviews have been reviewed and analyzed by the researcher, the researcher may want to contact you again to discuss the findings of the study. The purpose of this is to make sure that the results of the study are true to the views of the participants. This is an important step in the research project.

Please fill in the following contact information:

I agree to be contacted to review the findings of the study: Yes_____ No_____

Name:_____

Address:_____

Phone Number:_____

Alternate contact number:_____

Once the study has been completed and the study results are available, a summary of the results may be mailed to you. Please fill out the following contact information if you would like a copy of the results mailed to you.

Name: _____

Address: _____

Postal
Code: _____

Appendix F: Script For Staff When Approaching Potential Subjects

This script is for the health care providers to use when approaching potential subjects:

“A researcher who is a Master’s of Nursing student from the University of Manitoba, is conducting a study about prenatal care use by inner-city pregnant teenagers. Women who are 19 years old or younger, are ≥ 35 weeks pregnant and have a postal code in the inner-city Winnipeg area are being asked to participate. Would you be agreeable to have the researcher tell you more about the study? You do not have to decide whether to participate until you have received a full explanation about the study, and have received answers to all your questions. Your participation in the study is completely voluntary and your decision to participate or not to participate will not affect the care provided to you.”

Appendix G: Script For Researcher to Use With Potential Subjects

Hello my name is Jenny Shnitka. I am a Master of Nursing student at the University of Manitoba conducting my thesis study. I am interested in interviewing teenagers, or women 19 years old or younger, have an inner-city postal code and who are equal to or over 35 weeks pregnant.

Would you be willing to read this written explanation about the study? You do not have to decide whether to participate until you have read the explanation and have had all your questions answered. (If the potential participant agrees she will be given a copy of the “Research Information and Consent Form”, and be given time to read it.)

Do you have any questions about the consent form or study? Would you like to participate in the study? (If the adolescent answers no, she will be thanked and contact ended. If she answers yes, informed consent will be obtained.)

Appendix H

Demographic Questionnaire for Qualitative Portion of Study

1. What is your age in years _____
2. How many pregnancies have you had including this one? _____
3. Number of prenatal care visits as of interview date: _____
(if you cannot remember, give your best guess)
4. How many weeks pregnant are you? _____
5. How many weeks/months pregnant were you when you had your first visit? (do not count the visit that you were tested as pregnant)
6. Neighbourhood: _____
7. Marital Status _____
 - _____ Married and living with spouse
 - _____ Common Law Relationship or Live-In Partner
 - _____ Single- never married
 - _____ Divorced
 - _____ Separated
 - _____ Widowed
8. Who is taking care of you during this pregnancy?
 - _____ Family Doctor
 - _____ Obstetrician/Gynaecologist
 - _____ Midwife
 - _____ Nurse Practitioner
 - _____ Combination of the above: specify _____
 - _____ Other: specify _____
9. Income: Please indicate your family income for the past year, before taxes:

No income.....	1
Under \$10,000.....	2
\$10,000-19,999.....	3
\$20,000-29,999.....	4
\$30,000-39,999.....	5
\$40,000-49,999.....	6
\$50,000-59,999.....	7
\$60,000-69,999.....	8
\$70,000-79,999.....	9
\$80,000-89,999.....	10
\$90,000-99,999.....	11
\$100,000 or over.....	12

10. What is your highest level of education? This includes complete and incomplete (Circle highest level).

No schooling.....	1
Elementary school	
Incomplete.....	2
Complete.....	3
Junior High School	
Incomplete.....	4
Complete.....	5
High School	
Incomplete.....	6
Complete.....	7
Non-University (Vocational/Technical)	
Incomplete.....	8
Complete.....	9
University	
Incomplete.....	10
Diploma/Certificate (hygienists).....	11
Bachelor's Degree.....	12
Professional Degree (Vet,Dr., Lawyer).....	13
Master's Degree.....	14
Doctorate.....	15

11. Which of the following best describes your racial background? Would you say...

Aboriginal-Inuit.....	1
Aboriginal-Metis.....	2
Aboriginal-North American Indian.....	3
Arab/West Asian (e.g., Armenian, Egyptian, Iranian, Lebanese, Moroccan).....	4
Black (e.g., African, Haitian, Jamaican, Somali).....	5
Chinese.....	6
Filipino.....	7
Japanese.....	8
Korean.....	9
Latin American.....	10
South Asian (e.g., East Indian, Pakistani, Punjabi, Sri Lankan).....	11
South East Asian (e.g., Cambodian, Indonesian, Laotian, Vietnamese).....	12
White (Caucasian).....	13
Other.....	14

Appendix I

Qualitative Interview Guide for Social Support in Pregnant Adolescents

We know many things can may affect a young woman's decision to go for prenatal care. We also know that one of those things can be the help she gets. In order to understand that better, it's important to ask young women like yourself how they define 'getting help' and how it affected their decision to use prenatal care. Prenatal care is defined as any visit to a health care provider (like a doctor, midwife, or nurse practitioner) after the first visit they told you were pregnant. During this interview I would like you to think back on your pregnancy and your life before you were pregnant. I would like to ask about things and people that help you and if it caused you to decide to use or not use prenatal care.

I would like to first ask you to tell me a bit about yourself

Probe: What do you do for fun? Are you in school? Do you work part time anywhere? Where do you live? Who do you live with?

Please tell me about your pregnancy

Probe: What has it been like to be pregnant? What was it like finding out that you were pregnant? Who did you tell when you first found out you were pregnant?

Can you tell me about how your life has changed since being pregnant?

Probe: Was there any change to your group of friends from before you were pregnant to now? Have the things you did for fun change since being pregnant? Has school changed?

What needs do you have now that you are pregnant?

Probe: Money needs, food needs, help with getting places you need to go to.

How are any of those needs different from before you were pregnant?

Probe: Who helps you meet your needs? How do they help you? What do you do for yourself?

Can you tell me a bit about your prenatal care appointments?

Probe: How did you find out or hear about prenatal care? Why did you decide to go for prenatal care? Did anyone help you get access to prenatal care? What do you like or dislike about your prenatal care? Where do you go for prenatal care? Did you go or are you going to any prenatal classes? When you needed to know something about your pregnancy, where did you go for the answer, or who did you ask? Do you use any community health centres, like Klinik or Nine Circles?

Do you have a plan for when the baby comes?

Probe: Is the baby's father involved? (if she answers no) Would you like him to be involved? Who is going to help you when the baby comes? Who is going to help you take care of the baby? Who is going to help you pay for the costs of the baby's needs? Do you plan on continuing school after the baby is born?

If you could give advice to another pregnant teenager about where to go for help and for getting good prenatal care, what would you tell her?

Probe: If one of your friends got pregnant tomorrow and she asked for your help about where to go for prenatal care, and where to go for help with getting ready to have the baby, what would you tell her?

Thank you for spending this time talking with me. The information you shared with me will help create a better understanding of the help pregnant teenagers need for using prenatal care. Is there anything else that we didn't talk about that you would like to mention? Did this interview bring up any problems or questions that you would like to discuss?

Appendix J

> Date: Tue, 2 Feb 2010 13:14:39 -0500
> From: npender@umich.edu
> To: jshnitka@hotmail.com
> Subject: Re: Permission to use your HPM in my thesis proposal
>
> Dear Jenny:
>
> You have my permission to use a copy of the Health Promotion Model in
> your thesis proposal and thesis. An electronic copy is available at:
> www.nursing.umich.edu/faculty/pender_nola.html
>
> Wishing you good health,
>
> Nola Pender