

## EXPLORING PREGNANT AND PARENTING YOUNG WOMEN'S SMOKING

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FACTORS INFLUENCING PREGNANT AND PARENTING YOUNG WOMEN'S  
SMOKING BEHAVIOUR: AN INTERPRETIVE DESCRIPTIVE STUDY

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## ABSTRACT

Pregnant and parenting young women rarely access community-based smoking cessation interventions. Targeted cessation interventions have been laden with challenges and have produced suboptimal outcomes. There is a paucity of qualitative research specific to young women that explores the context of their tobacco use, as well as their attitudes towards and experiences with smoking cessation supports in pregnancy and postpartum. To bridge this gap, an interpretive descriptive design was used to explore the personal and contextual factors influencing young women's smoking behaviour during and after pregnancy. Factors were identified by analyzing influences at the multiple levels of McLeroy's social ecological model of health promotion. Data were collected via in-depth, semi-structured interviews with young women aged 16-24 years (n=13) who smoked regularly preconception and were pregnant or parenting. Transcripts were analyzed using qualitative content analysis. Findings highlighted the complexity and chronicity of issues young women faced and emphasized the interplay of social determinants that influenced their smoking. Smoking was a crutch that helped them to relieve psychological distress stemming from exposure to adverse or traumatic experiences; and persistent stress in the context of socioeconomic hardship, neighborhood disadvantage and limited social support. Smoking also was influenced by young women's understanding of the harms related to smoking during pregnancy and their reconceptualization of risk for smoking-related consequences postpartum. Young women described having limited discussions regarding smoking with maternity care providers and found their passive approach to cessation counselling unhelpful. They desired more



comprehensive cessation support from providers. They expressed interest in a tailored group cessation program and offered suggestions for improving cessation supports for young women in pregnancy and postpartum. Study findings bridge gaps in the literature and identify appropriate next steps in addressing the issue of smoking in pregnancy and postpartum amongst young women by suggesting a multi-level approach to cessation.

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## TABLE OF CONTENTS

<b>ABSTRACT.....</b>	<b>IV</b>
<b>ACKNOWLEDGEMENTS.....</b>	<b>VI</b>
<b>TABLE OF CONTENTS.....</b>	<b>VII</b>
<b>LIST OF TABLES.....</b>	<b>XII</b>
<b>LIST OF APPENDICES.....</b>	<b>XIII</b>
<b>LIST OF ABBREVIATIONS.....</b>	<b>XIV</b>
<b>INTRODUCTION.....</b>	<b>1</b>
<b>CHAPTER ONE: LITERATURE REVIEW.....</b>	<b>5</b>
Prevalence of Smoking in Pregnancy in Canada.....	6
Consequences of Smoking During Pregnancy.....	8
Consequences of Smoking After Pregnancy.....	10
Smoking in Pregnancy: Cost to the Health Care System.....	12
Factors Associated with Smoking in Pregnancy.....	13
Postpartum Relapse.....	14
Smoking and Breastfeeding.....	15
Nicotine Addiction and Dependence for Young Women.....	16
Young Women’s Knowledge of the Effects of Smoking During Pregnancy.....	17
Young Adult Pregnancy and Substance Use.....	18
Pregnancy as a Window of Opportunity.....	20
Smoking Cessation Interventions.....	22
Cessation Strategies Tailored for Pregnant Young Women in Canada.....	24

Cessation Programs for Pregnant and Parenting Women in Ontario.....	25
Voices of Smoking Pregnant and Parenting Young Women.....	26
PROBLEM STATEMENT AND STUDY RATIONALE.....	28
RESEARCH OBJECTIVES AND QUESTIONS.....	30
RELEVANCE.....	31
<b>CHAPTER TWO: METHODS.....</b>	<b>33</b>
THEORETICAL FRAMEWORK.....	33
STUDY DESIGN.....	36
STUDY SETTING.....	40
SAMPLING STRATEGIES.....	41
RECRUITMENT STRATEGIES.....	45
DATA COLLECTION.....	51
DATA ANALYSIS.....	56
STRATEGIES TO PROMOTE TRUSTWORTHINESS.....	59
ETHICAL CONSIDERATIONS.....	65
<b>CHAPTER THREE: FINDINGS.....</b>	<b>67</b>
ADOLESCENT PRESSURES: DEVELOPING AN IDENTITY AS A SMOKER.....	69
Pressures in School.....	71
Peer Pressure: Desiring to “Fit In” and be “Cool”.....	72
Parental Role Modeling and Mimicking Behaviours of Others in the Household.....	73

BARRIERS AND BAGGAGE.....	75
Needing Partner’s Support to Quit.....	75
The Neighbourhood Effect.....	77
Postponing School and Employment.....	79
Self-Medicating to Cope with Adverse Events of Childhood and Adolescence.....	80
Dealing with Mental Illness.....	82
RE-CONCEPTUALIZING SMOKING DURING PREGNANCY AND WANTING TO QUIT.....	84
Unexpected Pregnancy: Feeling Guilty and Wanting to Grow Up.....	84
Precarious Plans to Quit or Cut Down.....	87
Breathing for Two.....	89
Being Ostracized or Choosing Isolation.....	90
Finding a Quit Smoking Buddy.....	92
MISSED OPPORTUNITIES FOR PROVIDING SMOKING CESSATION COUNSELLING AND SUPPORT.....	93
Discussing Smoking in Young Parent Prenatal Programs .....	93
The Nature of Provider’s Discussions Regarding Smoking With Young Women.....	94
Awareness and Accessibility of Local Cessation Supports/Services.....	97
Misconceptions About Quit Smoking Aids and Cessation Options.....	98
SMOKING: A CRUTCH AND KEY COPING MECHANISM.....	99
Wanting Control: Smoking is a Regrettable Form of Control.....	99

Stress Relief.....	100
Life Stressors Taking Precedence Over Efforts to Quit.....	101
THE STUMBLING BLOCK: AFTER THE BIRTH OF THE BABY.....	104
The Breastfeeding Debate.....	104
Re-thinking Consequences After Baby.....	106
Conceding to Cravings and Returning to Old Habits.....	107
WANTING TO PROTECT THEIR CHILDREN AND PREVENT THEM FROM SMOKING.....	108
Future Plans for Quitting so Children Don’t Smoke.....	109
Reducing Children’s Exposure.....	110
Thoughts on a Smoke-Free Ontario.....	111
REFLECTIONS AND RECOMMENDATIONS FOR SUPPORT.....	114
Wanting More Meaningful Interactions and Regular Discussions.....	115
What Young Women Want: Comprehensive Support in a Group Setting.....	117
Offering Incentives.....	121
Spreading Awareness and Improving Accessibility.....	122
A Plea for Partners, Friends and Family.....	124
<b>CHAPTER FOUR: DISCUSSION.....</b>	<b>126</b>
INTRAPERSONAL LEVEL.....	127
INTERPERSONAL LEVEL.....	135
INSTITUTIONAL/ORGANIZATIONAL LEVEL.....	139
COMMUNITY LEVEL.....	141

POLICY LEVEL.....	143
AWARENESS, ACCESS TO AND PERCEPTIONS OF SMOKING SUPPORTS AND SERVICES.....	146
SUGGESTIONS FOR INTERVENTION STRATEGIES TO SUPPORT POSITIVE BEHAVIOURAL CHANGE.....	150
IMPLICATIONS FOR POLICY.....	154
IMPLICATIONS FOR PRACTICE.....	160
IMPLICATIONS FOR PROGRAMMING.....	167
CONSIDERATIONS FOR FUTURE RESEARCH.....	171
STUDY STRENGTHS AND LIMITATIONS.....	173
<b>CONCLUSION.....</b>	<b>175</b>
<b>REFERENCES.....</b>	<b>176</b>
<b>APPENDICES.....</b>	<b>217</b>

## LIST OF TABLES

TABLE 1: Sociodemographic Characteristics of Study Participants.....	68
TABLE 2: Participant Smoking Behaviour Before, During and After Pregnancy.....	69
TABLE 3: Summary of Themes and Sub-themes.....	70



## LIST OF APPENDICES

APPENDIX A: McLeroy’s (1988) Social Ecological Model of Health Promotion.....	217
APPENDIX B: Telephone Screening Guide.....	218
APPENDIX C: Introductory Letter to Gatekeepers.....	219
APPENDIX D: Promotional Poster for Study.....	220
APPENDIX E: Study Website Poster.....	221
APPENDIX F: Study Brochure .....	222
APPENDIX G: Study Logo.....	223
APPENDIX H: Consent to be Contacted Form.....	224
APPENDIX I: Consent Form.....	226
APPENDIX J: Study Information Posted on Website and Facebook Page.....	229
APPENDIX K: Interview Questions.....	230
APPENDIX L: Demographic Questions for Participants.....	233

## LIST OF ABBREVIATIONS

5 A's Model	Ask, Advise, Assess, Assist and Arrange
AA	Alcoholics Anonymous
ACOG	American College of Obstetricians and Gynecologists
BORN	Better Outcomes Registry Network
BSRC	Best Start Resource Centre
CAN-ADAPTT	The Canadian Action Network for the Advancement, Dissemination and Adoption of Practice-Informed Tobacco Treatment
CAS	Children's Aid Society
CINAHL	Cumulative Index to Nursing and Allied Health Literature
CPNP	Canadian Prenatal Nutrition Program
HBCH	Healthy Babies, Healthy Children
HiREB	Hamilton Integrated Research Ethics Board
MES	Maternity Experiences Survey
NRT	Nicotine Replacement Therapy
OTRU	Ontario Tobacco Research Unit
PHAC	Public Health Agency of Canada
PPYMSS	Pregnant and Parenting Young Mother's Smoking Study
PREGNETS	Prevention of Gestational and Neonatal Exposure to Tobacco Smoke
RCT	Randomized Controlled Trial
SFO-SAC	Smoke-Free Ontario - Scientific Advisory Committee
SOGC	Society of Obstetricians and Gynecologists of Canada
SHS	Second-Hand Smoke
USDHHS	U.S. Department of Health and Human Services
WHO	World Health Organization
YPN	Young Parent Network

## **Introduction**

It has been well established that smoking in pregnancy is associated with a long list of adverse outcomes for mothers, their infants and children (Behnke et al., 2013; Ko et al., 2014; U.S. Department of Health and Human Services [USDHHS], 2001; World Health Organization [WHO], 2010). One goal of the Ontario Tobacco Strategy, set in 1992, was to eliminate women's smoking during pregnancy by the year 2000 (Smoke Free Ontario- Scientific Advisory Committee [SFO-SAC], 2010). However, this goal has still not been reached and progress toward this goal is difficult to gauge (Borland et al., 2011; Johnson et al., 2004). According to Statistics Canada, in 2009-2010, 1 in 10 pregnant women reported to be current smokers. Several statistical analyses of smoking cessation rates during pregnancy in Canada (Cui et al., 2014; Gilbert et al., 2015) have found women under 25 years of age were at higher risk of continued smoking during pregnancy than women 25 years and older. According to the most recent Canadian Tobacco Use Monitoring Survey (CTUMS), published in 2012, 22.8% of Canadian women 20-24 years of age reported smoking regularly during their most recent pregnancy.

A systematic review of the literature identified that more than half of the women who smoke do not quit during pregnancy (Schneider et al., 2010). Roughly 30-40% of women smokers quit on their own during pregnancy; however, this is often a temporary behavioural change and many women relapse before delivery or after the birth of their baby (Best Start Resource Centre [BSRC], 2015a; Greaves et al., 2003; Prevention of Gestational and Neonatal Exposure to Tobacco Smoke [Pregnets], 2012). In truth, about

half of smokers relapse within four months postpartum and up to 90% return to regular smoking within a year after giving birth (BSRC, 2015a; Greaves et al., 2003; Klesges et al., 2001; Pregnets, 2012).

Women who smoke during pregnancy are plagued with a constellation of challenges related to addiction, life worries and environmental context that reinforce smoking behaviour, making it very challenging to quit smoking and/or sustain abstinence (Ockene et al., 2002). Women with low income, less education, poor mental health and high stress are less likely to quit smoking during pregnancy and more likely to relapse (Cui et al., 2014; Pregnets, 2012). Research suggests that special consideration must be given to certain priority populations of women, specifically younger and vulnerable pregnant women (BSRC, 2015a). Pregnant young women were identified as a priority population based on findings from the 2009 Canadian Maternity Experiences Survey (MES). The MES found the proportion of women who smoked during pregnancy was highest for women aged 24 years and younger compared to all other age groups (Public Health Agency of Canada [PHAC], 2009). In addition, women with less than a high school education and those living in a household at or below the low-income cut-off, reported higher proportions of smoking during pregnancy compared to those with higher education and living above the low-income cut-off. The MES concluded that younger pregnant women and women of lower socio-economic status should become a primary focus when developing maternal health policies and programs (PHAC, 2009). This finding emphasizes the need for developing targeted smoking cessation intervention strategies with younger pregnant women who may also be socially and economically

disadvantaged over and above dealing with many other stressors (BSRC, 2015a).

The Society of Obstetricians and Gynecologists of Canada (SOGC) recommends that counselling be offered to all pregnant women who smoke to help them quit (Wong et al., 2011). The SOGC clinical practice guideline contends that cessation interventions are effective in reducing women's smoking during pregnancy regardless of intervention intensity or provider delivering the intervention (Wong et al., 2011). A recent systematic review and meta-analysis evaluating the impact and effectiveness of smoking cessation interventions for pregnant and postpartum women found multi-component approaches were most likely to be effective, but results were inconsistent and there was weak evidence to demonstrate a positive effect in promoting sustained smoking cessation (Likis et al., 2014). There are very few women-centered smoking cessation services and programs that have been appropriately tailored to consider the circumstances of disadvantaged women (Borland et al., 2011). Even fewer cessation services have been designed to specifically target young women in supporting their smoking cessation efforts throughout pregnancy and postpartum (Greaves et al., 2011).

The majority of smoking cessation guidelines and interventions have been developed to meet the needs of the general smoking population and although some have been modified to address the needs of smoking pregnant women, they do not adequately address and account for social factors and related health inequities (WHO, 2010). In essence, smoking cessation guidelines and interventions have largely adapted a "one size fits all" approach to addressing smoking in pregnancy. This rigid approach is problematic when considering that the majority of women who smoke during pregnancy suffer social

disadvantage and live in circumstances that make it very difficult to quit smoking (Flemming et al., 2013; NICE, 2010; WHO, 2010). Very few smoking cessation guidelines and interventions have been tailored to meet the needs of high-priority populations like young, socially and economically disadvantaged pregnant women smokers. After searching the literature and assessing the quality of evidence on which smoking cessation interventions for pregnant women have been based, it appears that smoking cessation interventions have been largely grounded in quantitative research. As a result, we have a poor understanding of the experiences and challenges young pregnant women and mothers face when trying to quit smoking (McDermott et al., 2004; McDermott & Graham, 2006). Moreover, few cessation interventions have been tailored to meet the preferences and developmental needs of young women. For effective interventions, we need to understand why younger women continue to smoke during and after pregnancy although they are aware of the health risks to their infants, children and themselves (WHO, 2010).

There is an obvious evidence gap in the qualitative literature pertaining to pregnant young women and young mothers. More knowledge of how the social determinants of health influence their smoking behaviour could go a long way in helping policy makers, health care professionals and program developers understand the everyday challenges young women face and the underlying factors that perpetuate smoking behaviours in pregnancy and postpartum.

## **CHAPTER ONE: LITERATURE REVIEW**

A review of the literature was undertaken to examine smoking in pregnancy, the social and psychological issues that influence women's attempts to change smoking behaviour during pregnancy and postpartum, and the motivators and barriers to quitting smoking amongst young pregnant women and mothers. The following electronic databases were searched for relevant studies: CINAHL, OVID, EMBASE, EBSCO Host, PubMed, Scholars Portal and the Cochrane Library. The search terms used to identify relevant articles were: smoking in pregnancy, maternity and smok\*, adoles\* or teen and preg\* and smok\*, adolescent or young mother and smok\*, preg\* and tobacco, smoking cessation, postpartum, postpartum relapse, qualitative studies, qualit\*, behavioural change, cessation and intervention or program. The researcher also hand-searched potentially relevant articles, newly published papers and websites on relevant topics in addition to searching Google Scholar. Each database was searched for primary studies that were written in English and published in peer-reviewed journals between 2000 and 2016. Results of searches from all sources were combined and the abstracts were reviewed and assessed for relevancy. Duplicate entries were removed and the list of articles was collapsed to ensure only current, relevant articles were included. All articles in the condensed list were read in full-text and then critically appraised.

In the literature review that follows, the term “young women” was chosen to describe the population of focus for this study and is used to encompass both adolescent girls aged 16-19 years and young women aged 20-24 years. The term “young women” is used for purposes of clarity and consistency throughout this thesis.

### **Prevalence of Smoking in Pregnancy in Canada**

In 2000 to 2001, the estimated prevalence of smoking amongst pregnant women in Canada was 17%, with varying prevalence rates across the country (Millar & Hill, 2004). An analysis based on the 2005-2006 Maternity Experiences Survey (Al-Sahab et al., 2010) found the prevalence of smoking during pregnancy to be 10.5% across Canada, whereby smoking women consumed on average 7 cigarettes per day (95 % Confidence Interval [CI]: 6.5-7.4; SD = 5.7). Recent data on the prevalence rates of smoking during pregnancy across Canada is limited. Most recently, Cui et al. (2014) used data from the 2009-2010 Canadian Community Health Survey (CCHS) and estimated the overall prevalence of smoking during pregnancy to be 23% using weighted frequencies. Analysis for the study by Cui et al. was based on responses from an optional content module about smoking during the last pregnancy, which was completed by respondents in two provinces (Ontario and Alberta) and two territories (Yukon and Nunavut), together representing approximately 50% of the Canadian population (Statistics Canada, 2011). They found the prevalence to be highest in the Northern Territories (Yukon and Nunavut) at 59.3% compared to the rates reported in Alberta (34.8%) and Ontario (18.5%). This analysis of data from the CCHS (2009-2010) found women aged 15- 24 years were more likely to report continued smoking throughout pregnancy (38.6%) compared to women aged 25-34 years (24.7%) and 34 years and older (15.1%; Cui et al., 2014). According to this same survey (2009/10 CCHS), one in ten pregnant women in Ontario reported they were current smokers, with greatly varying rates between Ontario's seven public health regions (e.g., 34% in the Northwest region compared to 5.8% in Central region; Statistics



Canada, 2011). It is important to note that prevalence rates reported in the CCHS reflect roughly half of the Canadian population. The Better Outcomes Registry & Network (BORN) recently published their annual report (BORN, 2015) and found that 10.6% of women in Ontario who gave birth between 2012–2014 reported smoking at the time of their first prenatal visit.

With regards to prevalence rates of smoking during pregnancy among younger women in Ontario, BORN (2008) found the smoking rates among pregnant adolescents under the age of 20 years to be over 40% in five of Ontario's seven public health regions (BORN, 2008). The BORN (2015) annual report identified that almost a third of women under 20 years old (31.0%) reported smoking at the time of their first prenatal visit. By the time of admission for birth, however, this rate had decreased to 25.3%. The prevalence rates for both CCHS and BORN are based on self-reported smoking status and were not biochemically validated; thus social desirability and recall bias are unknown. These findings could therefore reflect an underestimation of smoking prevalence. Several studies have estimated the rate of non-disclosure of cigarette smoking amongst pregnant women could be greater than as 20% and found that among pregnant active smokers, nondisclosure was associated with younger maternal age (20–24 years; Deitz et al., 2011; Erickson & Arbour, 2012).

A systematic review of the literature on smoking cessation during pregnancy indicated that more than half of women who smoke do not quit during pregnancy (Schneider et al., 2010). Women who spontaneously quit smoking during pregnancy make this behaviour change out of concern for fetal health (Ockene et al., 2002; Pregnets,

2012). However, a positive change in smoking behaviour is often considered a temporary change as 70-90% of women relapse to smoking by 1 year postpartum (Klesges et al., 2001; Pregnets, 2012). The aforementioned rates of cessation and relapse do not necessarily reflect the rates of younger women. There is a risk to generalization of statistics on prevalence of smoking in pregnancy to all pregnant and parenting women, as there are limited data reflecting rates among sub-populations, specifically pregnant and parenting young women.

### **Consequences of Smoking During Pregnancy**

Smoking during pregnancy and postpartum poses significant health risks to the mother, infant, and other children (Albrecht et al., 2004; Borland et al., 2013; Fleming et al., 2013; WHO, 2010, 2013). Several studies that have measured nicotine levels in amniotic fluid and fetal plasma have found that the fetus is actually exposed to higher nicotine concentrations than the smoking mother (Andres & Day, 2000; Lips et al., 2005; Pregnets, 2012; Shea & Steiner, 2008). When pregnant women smoke, there is a transfer of nicotine, carbon monoxide, and other harmful chemicals from the mother to the developing fetus through the placenta and into the fetal blood stream, affecting placental tissues and umbilical artery blood flow (Cui et al., 2014; Shea & Steiner, 2008). Maternal cigarette smoking causes reduced uterine blood flow and increased uterine arterial resistance leading to placental vasoconstriction (Blackburn, 2014; Shea & Steiner, 2008). This deprives the fetus of oxygen and nutrients, which are essential in supporting fetal development, because they effectively create a state of hypoxia and malnutrition (Albuquerque et al., 2004; Blackburn, 2014).

In addition, maternal smoking is a major risk factor for a number of pregnancy-related complications and fetal consequences including ectopic pregnancy (fertilized egg attaches in the fallopian tube/organs outside the womb), preterm labor (born less than 37 weeks gestation), and premature rupture of membranes (WHO, 2010; Wong et al., 2011). Pregnant smokers also are at increased risk of placenta previa (partial or total obstruction by the placenta of the cervical os) and placental abruption (premature separation of the implanted placenta from the uterine wall causing bleeding or hemorrhage) (Flemming et al., 2013; Pregnets, 2012; Wong et al., 2011). Adverse physiological effects on the newborn may include congenital heart defects, intrauterine growth restriction, low birth weight (less than 2500g), small for gestational age (birth weight below 10<sup>th</sup> percentile), and an increased risk of stillbirth and perinatal mortality (Alverson et al., 2011; Andres & Day, 2000; Best, 2009; Pregnets, 2012; WHO, 2010, 2013). Studies have estimated that maternal smoking is responsible for approximately 15% of preterm births, 20–30% of all cases of low birth weight infants, and 15-25 % of all cases of placental abruption (Andres & Day, 2000; Schneider et al., 2010). Pregnant young women who smoke are more likely to deliver a preterm, low birth weight baby than adult women in their mid- twenties or older who smoke (Delpisheh et al., 2006; Moore et al., 2015). The prevalence of low birth weight deliveries is drastically reduced if the pregnant mother stops smoking in the first trimester of pregnancy (Ontario Tobacco Research Unit [OTRU], 2010).

Maternal cigarette smoking during pregnancy can pose serious neurodevelopmental risks for the child and is associated with childhood social issues, conduct disorder, attention deficits, impulsivity, hyperactivity and depression (Agrawal et

al., 2010; Cornelius & Day, 2009; Kovess et al., 2015; Meernik & Goldstein, 2015; Shea & Steiner, 2008). Behnke (2013) completed a review of the effects of prenatal substance use and found that in-utero tobacco exposure can lead to long-term behavioural problems extending from early adolescence into adulthood in the form of delinquency, criminal behaviour, alcohol misuse, and substance abuse. However, several studies included in the review by Behnke that drew this conclusion were quite outdated and may have lacked methodological rigor.

### **Consequences of Smoking After Pregnancy**

There has been compelling evidence in the literature warning of the long term adverse effects of exposing infants and children to second-hand smoke (WHO, 2010, 2013). Second-hand smoke, also referred to as environmental tobacco smoke (ETS), is the smoke exhaled by a person smoking combined with the smoke caused from the burning of the cigarette itself (Canadian Cancer Society, 2016; Pregnets, 2012). According to the 2013 Canadian Tobacco, Alcohol and Drugs Survey (CTADS), 3.9% of children between 0 and 17 years of age were regularly exposed to second-hand smoke at home (Canadian Cancer Society, 2016).

Second-hand smoke exposes non-smokers to thousands of chemicals and it contains two times the nicotine and five times as much carbon monoxide as the smoke inhaled (Health Canada, 2009). The long-term side effects of second-hand smoke include (but are not limited to) increased risk of respiratory illness (i.e., croup, pneumonia and bronchitis), asthma, reduced lung capacity, and sudden infant death syndrome (SIDS; Andres & Day, 2000; Pregnets, 2012; USDHHS, 2004; WHO, 2013). Infants and children

are most susceptible to the adverse health effects of second-hand smoke because they breathe faster and inhale a greater concentration of the toxic chemicals in smoke per unit body weight than adults (Canadian Cancer Society, 2016; WHO, 2010). Because their bodies are still developing, they also are less able to metabolize and excrete the harmful chemicals, thus allowing the toxic compounds to remain in the body for a longer duration (USDHHS, 2006; WHO, 2010). A recent review of the literature found that environmental tobacco smoke exposure to impact brain development and is associated with neuro-behavioural deficits, leading to executive functioning problems in children (Pagani, 2014).

Third-hand smoke, which is the residual contamination from tobacco smoke, is also dangerous; it consists of the toxins in smoke that linger long after the smoker puts out the cigarette (Ferrante et al., 2013). The hair, skin, clothing, and cars of smokers contain significant levels of third-hand smoke contamination (Pregnets, 2012). Third-hand smoke is noticeably present in dust and can also get trapped and accumulate in the fabric, carpets, drapery, furniture, and even children's toys (e.g., stuffed animals) within a smoker's home (Pregnets, 2012; BSRC, 2010; 2015a). Babies can take in up to 20 times more third-hand smoke than adults because they breathe more quickly and can swallow dust particles containing third-hand smoke when they crawl on the floor and put their hands into their mouths (BSRC, 2010; 2015a; Ferrante et al., 2013).

Of concern for breastfeeding mothers is the fact that nicotine is secreted into breast milk and has been associated with decreased milk production, decreased infant weight gain, and increased exposure of the infant to environmental tobacco smoke

(Behnke et al., 2013; Salihu & Wilson, 2007). It is recommended that breastfeeding mothers quit or cut down smoking as it can interfere with the volume of milk production and lead to early weaning (BSRC, 2014; 2015a). Although it is best for breastfeeding mothers to refrain from smoking, if they are unable to quit or cut down, their infants are better protected by breastfeeding than by formula feeding as it provides countless immunities that help the baby fight illness and counteract some of the harmful effects of cigarette smoke (Dorea, 2007).

### **Smoking in Pregnancy: Cost to the Health Care System**

Tobacco use costs the Ontario economy billions of dollars in health care and lost productivity costs annually due to tobacco-attributed diseases and health conditions (Smoke Free Ontario – Scientific Advisory Committee [SFO-SAC], 2010). In fact, it has been estimated that tobacco-related illness and death costs the Ontario economy over \$7 billion each year, including roughly \$1.93 billion in health care costs (SFO-SAC, 2010). The health care costs accrued from maternal tobacco use in pregnancy and the resulting adverse perinatal and neonatal outcomes have not been widely studied. Canadian statistics are absent from the literature in this regard. As a result, the national economic impact associated with prenatal exposure to nicotine in-utero or continued exposure post-partum is unknown (Huston, 2006). Although it is assumed that smoking during pregnancy imposes a substantial economic burden on the healthcare system, the only cost estimates have been from American studies and most statistics are considerably outdated (published in the 1980's); they therefore were not included in this review. The only cost estimate worth mentioning as it has been cited in several studies is the estimation that every US \$1

spent on delivering smoking cessation interventions for pregnant women (such as offering medical quitting advice and counselling or providing pregnancy-tailored information and motivational guidance throughout the course of routine prenatal care) saves approximately US \$3 in health-related costs (Ruger & Emmons, 2008; Wong et al., 2011).

### **Factors Associated with Smoking in Pregnancy**

A Canadian study of 1134 women (Johnson et al., 2004) found that the odds of smoking after knowing of pregnancy were 2.4 times higher (OR 2.4; 95% CI: 1.5-3.8) among women under 25 years of age compared to women 25 years and older. Factors associated with a lower likelihood of quitting during pregnancy include low educational attainment alone or in combination with low income (low socio-economic status; Cui et al., 2014; Johnson et al., 2004; Meernik & Goldstein, 2015), early age of onset of smoking and high nicotine dependence, smoking as a form of coping with stress, and living with another smoker or having a smoking partner (Cui et al., 2014; Meernik & Goldstein, 2015; Rattan et al., 2013; Schneider, Huy & Schutz, 2010). One study found that young women who smoked throughout pregnancy were more likely to have started smoking in high school or even elementary school and engaged in various risk-taking behaviours from early ages, such as sexual behaviour and experimentation with illicit substances compared to young women of the same age who were not smokers (Stueve & O'Donnell, 2007). Exhibiting these risky behaviours consequentially influenced the possibility of experiencing early pregnancy and child rearing as well as intimate partner violence (Martin, Beaumont & Kupper, 2003; Silverman et al., 2001; Stueve &

O'Donnell, 2007). Several studies have found strong associations between smoking during pregnancy with past or present adverse events in childhood or adolescence (e.g., emotional or physical neglect, death of a loved one, household substance use, parental separation or divorce), mental illness, and being a victim of violence or abuse of any form (Al-Sahab et al., 2010; Braveman & Barclay, 2009; Borland et al., 2013; Fanslow et al., 2008; Goodwin, Keyes & Simuro, 2007; Robertson, Xu & Stripling, 2010; Stueve & O'Donnell, 2007). Given that the majority of these studies were retrospective in nature they may be limited by recall bias and possibly response bias.

A systematic review by Ingall and Cropley (2010) identified that issues with smoking cessation provision, misconceptions and difficulties in understanding the facts about smoking consequences, unstable interpersonal relationships and influence of family and friends were the greatest barriers to changing smoking behaviour during pregnancy. This systematic review (Ingall & Cropley, 2010) did not go so far to discuss how circumstances and experiences might differ between adult women and younger women or whether pregnant youth experiences were captured within these explanatory findings.

### **Postpartum Relapse**

As previously mentioned, smoking cessation during pregnancy is often a temporary abstinence from smoking rather than a permanent behaviour change (Flemming et al., 2015; Pregnets, 2012). Relapse is often viewed as a reward after pregnancy and may be premeditated, particularly if cessation was externally motivated (e.g., for the health of the baby; Okoli et al., 2010; Notley et al., 2015). Studies have found that relapse rates were higher among women whose significant other or family



members smoked, who lived in a household where cigarettes were easily accessible, who relied on smoking for stress relief, and who had higher nicotine dependence prior to becoming pregnant (Flemming et al., 2014; Ingall & Cropley, 2010; Nichter et al., 2008; Nguyen et al., 2012). Relatedly, postpartum relapse has been associated with a combination of factors, including having limited financial means, lack of support from significant others/family members/friends, exposure to high-stress situations, and poor stress management skills (Meernik & Goldstein, 2015; Ripley-Moffitt et al., 2008). Lastly, relapse is more likely for women suffering from mental distress or illness such as anxiety or depression, intense or prolonged withdrawal symptoms, low confidence and self-efficacy, alcohol or recreational drug use, reduced motivation, and self-consciousness about weight gain (BSRC, 2015a; Greaves et al., 2003; Meernik & Goldstein, 2015). A systematic review of qualitative studies on postpartum smoking relapse (Notley et al., 2015) identified that beliefs about smoking as a means of coping with stress combined with stresses caused by caring for a newborn, sleeplessness and struggles adjusting to the mothering role appeared to be major factors in promoting postpartum relapse. It is important to note that young mothers, compared to adult mothers, have a greater predisposition towards low maternal self-esteem and poor mental health, and often experience higher levels of parenting stress, putting them at higher risk for relapse (Pienta et al., 2015; SmithBattle & Freed, 2016).

### **Smoking and Breastfeeding**

Smoking postpartum can lead to reduced motivation to breastfeed, decreased milk production and early weaning (Bahadori et al., 2013; Lauria, Lamberti, & Grandolfo,

2012). Several studies have found the initiation and duration of breastfeeding to be lower among smoking mothers (Amir & Donath, 2002; Kendzor et al., 2010; Ludvigsson & Ludvigsson, 2005; Weiser et al., 2009). Moreover, for women who quit smoking during pregnancy, studies have found an increased risk of postpartum relapse is associated with not having breastfed or having ended breastfeeding (Cui et al., 2014; Flemming et al., 2015). One study found an association between successfully quitting smoking during pregnancy and longer breastfeeding duration; women who stopped smoking were roughly four times (OR = 3.70; 95% CI 1.55 - 8.83) more likely to breastfeed for longer than six months (Giglia et al., 2006). Smoking and breastfeeding behaviours in these studies were self-reported and may suffer from recall bias or social desirability bias. Smoking behaviour may have been underreported due to the stigma related to smoking in pregnancy and/or while breastfeeding. Low response rates and larger dropout rates also could have inferred a selection bias.

### **Nicotine Addiction and Dependence for Young Women**

Cigarettes contain nicotine, which is a highly addictive substance. Some researchers suggest that earlier and greater exposure to nicotine can cause changes in brain development, facilitating the addiction process and leading to a stronger addiction as well as increasing the risk for long-term dependence (Benowitz, 2010; Spear, 2013). When someone starts smoking at a young age, their brain becomes rewired earlier and faster, altering structure and function, which causes a stronger nicotine addiction to develop (Feltz, 2007; Glover, Glover & Payne, 2003). According to Chen et al. (2006), the earlier the age of onset of smoking, the more likely the woman will continue to smoke

throughout pregnancy. Rates of nicotine metabolism also are significantly higher in women smokers who use oral contraceptives and those who are pregnant compared to non-pregnant smokers and women smokers not on oral contraceptives (Benowitz et al., 2006; Bowker et al., 2014; WHO, 2010). This means that women of child-bearing age using contraceptives and pregnant women require more nicotine in their systems to gain the same desired effects that they were previously able to achieve at lower doses (WHO, 2010). As such, reducing or quitting smoking may be more challenging for pregnant young women who started smoking at a very young age.

### **Young Women's Knowledge of the Effects of Smoking During Pregnancy**

A recent qualitative analysis on the smoking and cessation experiences of pregnant and postpartum young women found knowledge about the harmful effects of tobacco on the fetus to be a factor influencing some young women's motivation to spontaneously quit smoking during pregnancy (Constantine et al., 2014). Only a few studies were identified that have assessed how much young women know about the health risks associated with smoking in pregnancy (Albrecht, Higgins & Lebow, 2000; Leiner et al., 2007). Leiner et al. (2007) assessed pregnant young women's and young mothers' comprehension of the risks of smoking during and after pregnancy. Although 94% of the study participants declared that they were informed about the risks associated with smoking during and after pregnancy, only 53% correctly answered the knowledge-testing questions regarding risks of smoking in pregnancy. This finding suggests that messages about the risks of exposure to cigarette smoke during and after pregnancy are not well understood by young mothers.

Albrecht, Higgins and Lebow (2000) completed a three-group randomized intervention study to examine young women's knowledge of the deleterious effects of smoking on pregnant women and their developing fetuses and the relationship with their efforts to quit smoking. Albrecht and colleagues (2000) found that pregnant young women who participated in intensive smoking cessation interventions (involving peer support, written and audiovisual materials, and positive reinforcement) had greater knowledge post-intervention and higher quit smoking rates than pregnant adolescents who received standard care. They concluded that pregnant young women's perceptions of health risks influence their decision-making regarding smoking and that peer support may be a valuable adjunct in smoking cessation programs designed for pregnant youth (Albrecht, Higgins & Lebow, 2000). There were a number of limitations to these studies (Albrecht, Higgins & Lebow, 2000; Leiner et al., 2007). In addition to them being outdated, limitations include small sample size, poor description of methods, minimal discussion of the reliability and validity of measurement scales, and the risk of social desirability bias. The results of these studies suggest that health care providers need to repeatedly discuss the consequences of smoking and employ multiple teaching strategies for improving communication about the risks, as there appears to be a relationship between pregnant young women's knowledge of the smoking-related risks and decisions to reduce or stop smoking.

### **Young Adult Pregnancy and Substance Use**

There is often a co-occurrence of tobacco, alcohol and other substance use with adolescent pregnancy, which underscores the need for interventions to address the social

determinants that contribute to negative health behaviours and developing integrated approaches to reducing substance use amongst pregnant and parenting young women (Bottorff et al., 2014; Wong et al., 2011). Little is known about the patterns and etiology of substance use amongst pregnant young women and young mothers yet this subpopulation of women is considered a vulnerable, high-priority group (Chapman & Wu, 2013). Several studies have found that adolescent girls are more likely to smoke, and drink and use alcohol in excess during pregnancy than women of any other age (Bottorff et al., 2014; De Genna, Cornelius, & Donovan, 2009; Flemming et al., 2013). This finding may be partly attributed to the fact that many early age pregnancies are unplanned and young women often do not realize they are pregnant until they are of later gestation (Bottorff et al., 2014). More inherently, adolescent substance use is augmented by externally controlled contextual variables and related to self-medication as a means of coping with difficult life circumstances (Chapman & Wu, 2013). Pregnant and parenting young women's substance use has been linked to low self-esteem and self-worth, psychological distress, problematic relationships, mental illness (particularly anxiety and/or depression), history of various forms of abuse, low family income and low socio-economic status (Chapman & Wu, 2013; Cornelius et al., 2004; De Genna, Cornelius, & Donovan, 2009; SmithBattle & Freed, 2016; Spears et al., 2010). These associative variables also act as barriers to cessation (Chapman & Wu, 2013).

Chapman and Wu (2013) reviewed studies on substance use among pregnant and postpartum young women and found that many stopped using substances during pregnancy but most resumed within six months after the birth of their babies. The review

by Chapman and Wu (2013) also found significant increases in tobacco use within the first 18 months postpartum. Bottorff et al. (2014) completed a scoping review of the literature regarding young women's tobacco and alcohol use in pregnancy and postpartum. They found that the narratives of pregnant young women and young mothers have been neglected in the literature and that there is a clear lack of effective interventions described in the literature intended to prevent or reduce tobacco and alcohol use in this population (Bottorff et al., 2014). Both reviews had several limitations. Some studies included in the reviews were very outdated and lacked methodological rigor, most relied on small sample sizes, and there was inconsistency in the definitions of adolescents/teens and women within studies. Neither review provided a critique of the quality of studies included, which reduces credibility of findings. Despite these limitations, these reviews highlight the need for developing effective, integrated approaches to prevent or reduce substance use amongst young women during pregnancy and postpartum.

### **Pregnancy as a Window of Opportunity**

Research evidence suggests that pregnancy can be a potential motivator for health-related behaviour change, particularly with regards to smoking (Flemming et al., 2015; Heil et al., 2014). Study findings have led researchers to conclude that women are more likely to contemplate quitting smoking during pregnancy than at any other point in their lives, and they are highly motivated to adopt smoking abstinence and other risk-reducing health behaviours (Lumley et al., 2009; McBride, Emmons, & Lipkus, 2003). Pregnancy has been viewed as a window of opportunity in which women may be more

impressionable as their perception of health risk becomes heightened and, as such, pregnancy has been theorized as the teachable moment (Albrecht, Phelan, & Melvin, 2011; WHO, 2013). Maternity care providers may have a powerful and positive impact on the health of mothers, infants, and children by supporting and encouraging smoking cessation efforts in pregnancy and postpartum (Flemming et al., 2015).

According to the CAN-ADAPTT Canadian smoking cessation clinical practice guideline (2011), counselling is the first line of treatment for smoking cessation for pregnant and breastfeeding women. The World Health Organization, Agency for Healthcare Research and Quality (AHRQ), American College of Obstetricians and Gynecologists (ACOG) and the U.S. Department of Health and Human Services (USDHHS) recommend that obstetrical providers ask all pregnant women about tobacco use and provide pregnancy-tailored counselling based on the “5 A’s” counselling model (Albrecht, Phelan, & Melvin, 2011; Okoli et al., 2010; Fiore et al., 2008; WHO, 2010). The 5 A’s model requires care providers to: (1) Ask their patients about tobacco status and tobacco use; (2) Advise patients to quit; (3) Assess their willingness to commence treatment to quit smoking; (4) offer Assistance and support to those who express interest in quitting; and (5) Arrange regular follow-up to assess progress, provide support and modify treatment plans as necessary; refer patients to appropriate resources (Pregnets, 2012). For pregnant women who smoke less than 20 cigarettes per day, the provision of a 5-15 minute counselling session that includes the “5 A’s” model and offering of pregnancy-specific educational materials can increase cessation by 30-70% (Albrecht, Phelan, & Melvin, 2011; Jordan, Dake & Price, 2006). According to a meta-analysis by

Melvin et al. (2000), the 5 A's approach is a low intensity intervention that offers a modest but clinically significant effect on the cessation rates of pregnant smokers, with an average risk ratio of 1.7 (95% CI=1.3, 2.2). However, the brief cessation intervention strategy was found to be ineffective among heavily addicted and dependent smokers (Likis et al., 2014).

### **Smoking Cessation Interventions**

Smoking cessation interventions include: Nicotine Replacement Therapy (NRT) (gum, lozenge or patch), pharmacological medications (e.g., bupropion, Zyban, Wellbutrin), individual or group counselling, cognitive behavioural strategies self-help materials specifically tailored to pregnant women, and telephone counselling through quitlines (Lumley et al., 2009; Meernik & Goldstein, 2015; WHO, 2010; Wong et al., 2011). Other interventions include motivational interviewing, interventions based on the stages of change, the measurement of nicotine by-products to biochemically validate cessation attempts, and incentive-based treatment (Fiore et al., 2008; Lumley et al., 2009). Only some of these intervention strategies have been evaluated on pregnant and parenting women and to varying degrees of methodological rigor.

A Cochrane systematic review of randomized controlled trials (RCTs) of smoking cessation in pregnancy provided evidence that psychosocial support in the form of counselling and peer support during pregnancy increased cessation rates by 35–50% compared with less intensive interventions (Chamberlain et al., 2013). Chamberlain et al. (2013) also found counselling interventions to be more effective than usual obstetrical care (RR 1.44, 95% CI =1.19, 1.75), and incentive-based treatment to be more effective



than less intensive interventions (RR 3.64, 95% CI= 1.84, 7.23). Meernik and Goldstein (2015) conducted a literature review on smoking in pregnancy and confirmed that health education and clinician advice alone are insufficient in encouraging positive behavioural changes. The authors contended that treatment plans should involve not only psychosocial support but also multiple components (e.g., counselling, incentives, feedback and social support) to most effectively help pregnant women in making quit attempts and sustaining smoking abstinence. Comprehensive, multi-component cessation strategies offer the potential for synergy of effects (WHO, 2010). A recent review on relapse prevention interventions in the postpartum period revealed no consistent treatment effects on long-term smoking cessation, although interventions such as pharmacological and behavioural support increased cessation rates during pregnancy and early postpartum (Su & Bутtenheim, 2014).

The Society of Obstetricians and Gynaecologists of Canada (SOGC) guidelines recommend that smoking cessation counselling be considered a first-line intervention for pregnant smokers and NRT or pharmacotherapy can be considered if counselling is not effective (Wong et al., 2011). There is uncertainty regarding the safety and efficacy of NRT and smoking cessation medications for pregnant women. For example, further research is needed to determine if higher doses of NRT and combination NRT (using two or more forms of NRT together) in pregnancy may be beneficial because during pregnancy there is an increased metabolism of nicotine that can result in under-dosing and reduced efficacy of NRT in pregnant smokers compared with the general population (Berlin et al., 2014; Brose, McEwen, & West, 2013; Coleman et al., 2015). One

observational study found the use of combination NRT (i.e., nicotine patch plus a faster acting form such as gum, lozenge or inhaler) in pregnant smokers to be associated with greater odds of quitting (OR = 1.93, 95% CI = 1.13, 3.29,  $p=0.016$ ) compared with no medication (Brose, McEwen & West, 2013). Although these aforementioned systematic reviews, literature reviews, and clinical practice guidelines provided a thorough review of best evidence and emerging research in the areas of smoking cessation and relapse prevention for the general population of pregnant women, they did not discuss any evidence-informed strategies or recommendations for subpopulations of pregnant women, such as at-risk, vulnerable young women. This is likely due to the fact that there is a scarcity of literature on smoking cessation intervention strategies specific to pregnant and parenting young women.

### **Cessation Strategies Tailored for Pregnant Young Women in Canada**

Greaves et al. (2011) completed a best-practices review of smoking cessation interventions and program components for pregnant and postpartum girls and women. This Canadian review affirmed that few cessation programs exist for young women and the majority of youth-tailored interventions that do exist are school-based prevention initiatives that would not easily be applied to pregnant young women given their vastly different contextual factors and life circumstances (Greaves et al., 2011). The review found only two studies, from the US and UK (Albrecht et al., 2006; Bryce et al., 2009), that met methodological and outcome criteria for addressing smoking cessation among pregnant young women, each presenting with methodological concerns and drawbacks. For instance, the cohort study by Bryce et al. (2009) did not offer adequate

methodological descriptions and did not have a comparison group, therefore no strong recommendations regarding the intervention could be made. The RCT intervention study by Albrecht et al. (2006) could not achieve sufficient power given their sample size, which may have impacted outcome results.

A more recent Canadian study evaluating the adequacy of smoking cessation support for pregnant and postpartum women identified several barriers to providing cessation supports, which included the absence of provincial cessation strategies, lack of funding, lack of organizational capacity, accessibility issues and challenges engaging women (Borland et al., 2013). This study also highlighted the absence of resources for at-risk populations and recommended that further research explore the smoking and cessation experiences of young women in pregnancy and postpartum.

### **Cessation Programs for Pregnant and Parenting Women in Ontario**

No published studies were found on smoking cessation programs' interventions for pregnant women in Ontario or Canada. In the grey literature, two programs operating out of the same organization were identified that offered cessation support for young parents in Ontario (St. Mary's Home, 2015). One program, 'Kick Butt for Two', was a group smoking cessation support program for pregnant adolescents and young single parents (aged 14 to 24 years), which was run through St. Mary's Home in Ottawa (St. Mary's Home, 2015). It has since been replaced by another program called 'Kick Butt 'n' Craft', which is a 3-week program designed to help pregnant and parenting youth quit by offering healthier ways to deal with stress (St. Mary's Home, 2015). No information on young parent engagement, outcome measures or evaluation strategies was found.

The Peterborough County-City Health Unit developed the ‘Choose to Be...Smoke-Free’ program aiming to enhance opportunities for pregnant and postpartum women to reduce or quit smoking (McCammon-Tripp et al., 2012). One unpublished report was found on this demonstration project outlining its development. The report discussed the success factors and tribulations in the program’s initial implementation and has yet to be evaluated. It could potentially be adapted to the needs of at-risk populations and trialed with pregnant and parenting young women.

### **Voices of Smoking Pregnant and Parenting Young Women**

McDermott and Graham (2006) attempted a systematic review of qualitative research on young mothers and smoking but were forced to terminate the inquiry after realizing the clear evidence gap. The authors found very sparse qualitative evidence exploring young mothers’ perspectives on their smoking behaviour, subjectively experienced barriers to cessation, and their life experiences contributing to their smoking. Only two recent qualitative studies were identified to have explored pregnant young women’s smoking behaviour from their perspective (Constantine et al., 2014; Hauck et al., 2013). Hauck et al. (2013) examined the challenges and enablers to smoking cessation amongst young pregnant women in Western Australia and Constantine et al., (2014) studied the cessation and relapse experiences of pregnant and parenting adolescents aged 14-19 years from Northern California.

Hauck et al. (2013) asked young women to respond to a hypothetical scenario during a 5-15 minute face-to-face interview and found “habit” to be a main theme under perceived challenges, which incorporated three sub-themes: (1) learn to deal with stress;

(2) the urge for a smoke; and (3) not being left out which, reinforced the social aspect of smoking. The main enabler to quitting smoking in pregnancy was identified to be the concern over the health of their baby with four sub-themes that emerged under this theme, namely, (1) getting the facts; (2) you need someone; (3) something you can take to help (referring to smoking cessation medications); and (4) keeping your mind off it. A critical limitation to this study was with regards to the design in that the very brief face-to-face interviews did not offer in-depth, rich or descriptive responses from participants and rather only shallow, single-sentence responses were elicited.

Constantine et al. (2014) completed in-depth interviews with 52 pregnant and postpartum adolescents and found spontaneous smoking cessation to be reported among most participants and many reported quitting was easy. Adolescents explained they quit smoking realizing the harmful effects of tobacco on the fetus, or as a result of unpleasant physical symptoms from smoking in pregnancy, which caused a temporary aversion. Constantine et al. also found a number of adolescents resumed smoking postpartum, and although they felt guilty, they no longer considered their smoking to negatively affect their infants. Study findings by Constantine et al. must be interpreted with caution due to several limitations. Firstly, adolescents were eligible if they reported smoking at least 10 cigarettes in the three months prior to knowledge of their pregnancy, yet their smoking histories were not elicited and pre-pregnancy levels of smoking were not quantified, which may explain why participants found quitting during pregnancy “easy”. A number of participants could have been casual, social smokers, which does not capture the cessation experience and challenges of regular or heavy pregnant adolescent smokers. In

addition, only adolescents who reported successfully sustaining from smoking for at least 30 days were eligible to participate in the study. As such, findings may not be transferable to teen smokers who have difficulty quitting in pregnancy and either cut down or continue smoking at pre-pregnancy levels. Despite not having a maximum variation sample with regards to smoking behaviours, Constantine et al. uncovered several important themes that offer useful insight. Both studies by Hauck et al. and Constantine et al. offer some understanding of young women's experiences of smoking, cessation and relapse in pregnancy and/or postpartum, yet the complex, interplay of factors contributing to young women's smoking behaviours during and after pregnancy are still largely unknown and misunderstood.

The narrow range of evidence on which smoking cessation interventions for pregnant young women and young mothers are based may explain the many challenges to implementation that limit the effectiveness of smoking cessation interventions for this high-priority group. This gap in the research literature also raises concerns about the quality of evidence on which policies addressing smoking among young women are based. Developing a greater understanding of pregnant and parenting young women's health care needs and life challenges may inform more positive and supportive interactions with health care providers, leading to better informed decision making and positive health choices in the midst of complex life challenges.

### **Problem Statement and Study Rationale**

Smoking among young women in pregnancy and postpartum is a major public health issue with negative consequences for both mother and baby. There is a lack of

inductive inquiry into the challenges pregnant and parenting young women face when making a decision about changing their smoking behaviour and how health care professionals can help support this change (Ingall & Cropley, 2009; McDermott & Graham, 2006). There is a paucity of qualitative studies that have tried to understand the contextual and personal factors that influence the smoking behaviour of pregnant and parenting young women. It is imperative that health care providers understand and address the various social determinants that shape the smoking behaviour of young women. This is an essential step in offering effective cessation services and addiction supports for this high-priority population. Being a young mother, possibly even a single parent with a low level of education, limited social supports and in poor socioeconomic circumstances, are powerful predictors of smoking during pregnancy and postpartum. An upstream approach that aims to improve the living conditions and provide more opportunities to socioeconomically disadvantaged pregnant and parenting young women might push cessation strategies in the right direction. Holistic multi-component treatment of the smoking addiction that addresses the related determinants is needed to impact behavioural change rather than a topical fix or “one size fits all” approach to smoking cessation.

To address the gaps in the literature described above, this study aimed to explore the complex factors that influence young women’s smoking behaviour in pregnancy and postpartum. Study findings will inform strategies that may help to address the deeply embedded factors that reinforce smoking in young women’s lives and build the

foundation for understanding what interventions may actually reduce smoking prevalence amongst this at-risk group.

### **Research Objective and Questions**

Smoking cessation interventions and programs that have been developed to target pregnant and parenting adolescent girls and young women have repeatedly been laden with challenges and produced suboptimal outcomes. Many cessation supports that show promise are rarely accessed by youth and these underutilized resources show minimal impact on short-term and long-term efforts to achieve and maintain smoking abstinence or harm reduction behavioural changes. There is a paucity of qualitative research specific to adolescent and young women that explores the context of their tobacco use, as well as their perspectives and experiences of smoking supports in pregnancy and postpartum.

The objective of this study was to explore the complex and multi-determined nature of the issue of smoking during pregnancy and postpartum amongst young women. It aimed to understand the personal and contextual factors that contribute to smoking behaviour and to identify the factors young women consider most important in shaping decisions to continue, quit or reduce smoking prenatally and in the postpartum period. The study also explored young women's beliefs and ideas regarding intervention and harm reduction strategies that may be helpful to address the underlying, interconnected factors influencing their smoking cessation efforts and assist pregnant and postpartum young women to make long-term, positive behavioural changes.



### **Research Questions**

1. What do pregnant and parenting young women describe as the personal and contextual factors influencing their smoking behaviour?
2. Which of these factors do pregnant and parenting young women consider the most important in influencing their smoking behaviour?
3. What are pregnant and parenting young women's awareness, access to and perceptions of smoking cessation services and supports within the community?
4. What strategies do pregnant and parenting young women believe may aid them in making positive behavioural changes with regards to their smoking habits?

### **Relevance**

With young women at greatest risk for deciding to smoke throughout pregnancy and post-partum, it is clear that their reasons for smoking need to be better understood (WHO, 2010). Public health interventions and cessation programs continue to fall short when attempting to target this subpopulation of women smokers (Borland et al., 2013; Greaves et al., 2011). In order to develop cessation interventions that are accessible, effective and utilized by these at-risk young women, we need to develop a better understanding of personal and contextual influences that contribute to their smoking behaviour. The literature has identified that in order to reduce some of the barriers these young women face, smoking cessation programs should take into account end-user perspectives and be formulated using young women's input to build smoking cessation supports that are informed by their developmental needs and preferences. Social and contextual factors contributing to tobacco use amongst young women must be

strategically addressed and interventions must adopt a woman-centered, harm-reduction and non-judgmental approach to promote sustained behavioural change throughout pregnancy and postpartum (Borland et al., 2013; Bottorff et al., 2014; MacDermid & Graham, 2009). The issue of smoking amongst pregnant and parenting young women must be addressed in a more holistic manner because Ontario's smoking cessation services are not well equipped to address the health needs of this population (Borland et al., 2013).

## **CHAPTER TWO: METHODS**

### **Theoretical Framework**

This study was guided by the social ecological model for health promotion proposed by McLeroy et al. (1988). This model positions the individual's behaviour within a broader context resulting from a host of social influences, and emphasizes both individual *and* social environmental factors as targets for health promotion interventions (McLeroy et al., 2003). This model, which was derived from a variation of Urie Bronfenbrenner's original ecological systems theory (published in 1979 which divided environmental influences of behaviour into micro-, meso-, exo- and macrosystem levels), and a synthesis of ideas borrowed from several disciplines, helps to broaden our understanding of the complexities and combinations of personal and environmental factors that influence health and health-related behaviours (McLeroy et al., 1988). The structural components within this model help to conceptualize how health-related behaviours are shaped and sustained within and across various individual and environmental factors, allowing identification of promising entry points for strategic planning and interventions (Sallis, Owen & Fisher, 2008; Wendel & McLeroy, 2012). McLeroy and colleagues (1988) contended that individual life-style approaches to health promotion and disease prevention can yield only marginal health improvements and that the focus on individual behavioural changes should remain secondary to more holistic, multi-component environmental approaches. In this model, the multiple levels of influence that are believed to shape individual behaviours are:

- (1) Intrapersonal factors - characteristics of the individual such as knowledge, beliefs,

values, skills, behaviour, attitude, self-esteem and self-concept;

(2) Interpersonal processes and primary groups – social groups providing sense of identity and support systems; formal and informal interpersonal relationships forming one's social networks (e.g., friends, family, partners, peers, and work groups);

(3) Institutional/organizational factors - social institutions with organizational characteristics (such as community organizations/centres, educational institutions, work settings, religious institutions, health care centres and public health units) that have formal or informal rules and regulations for operation. These institutions have values, and norms, which can promote or constrain behaviours;

(4) Community factors – encompasses families, friendship networks and neighborhoods, which are all important sources of social identity and resources as well as the mediating structures to which individuals belong. It refers to the psychological sense of community, and collective environmental conditions defined in geographical and political terms. This term also refers to the relationships among organizations, social institutions, informal networks and groups within a defined area such as local schools, local health care service providers and local volunteer initiatives; and,

(5) Public policy - local, provincial and national laws & policies that regulate and support healthy behavioural practices and actions (McLeroy et al., 1998; Appendix A).

McLeroy and colleagues (1988) argued that these five levels of influence on individual behaviour can be conceptualized as levels of analysis that offer a systematic means of understanding the determinants of individual behaviour and can help to structure more effective, holistic approaches to health-related behavioural change. As

such, the model suggests the importance of developing intervention strategies that are aimed at changing factors operating at multiple social levels that may incidentally support, maintain and perpetuate unhealthy behaviours (McLeroy et al., 1988). For instance, a community-based substance use prevention program could aim to: coordinate awareness campaigns to help reduce the social stigma and change norms and attitudes towards substance use; foster safe, social support networks in the community setting; offer alternate stress-relief outlets (such as yoga classes); and provide opportunities for growth and self-improvement (such as team sports or organized social activities). These multi-level intervention strategies may improve self-esteem and confidence in participants' ability to refrain from engaging in substance use and other self-harm behaviours.

Social ecological perspectives have increasingly been used to examine population health issues such as smoking and considered in the design of community-based interventions (McLeroy et al., 1988,2003; Salis, Owen & Fisher, 2008). The social ecological model has been referenced in the literature to explain smoking behaviours in adolescent and adult populations (Corbett, 2001; Golden & Earp, 2012; Green et al., 1996; Levesque et al., 2000; McLeroy et al., 1988; Stokols, 1996). This model also has been recommended and utilized by several government health agencies, such as the Centers for Disease Control and Prevention (CDC) and American Cancer Society, for developing disease prevention programs (CDC, 2015; Kushi et al., 2012; Martinez et al., 2012).

Community-based interventions designed to address health disparities necessitate

a multifaceted approach based in local socioeconomic realities and must take into account the needs of the target population as well as maximize the use of local resources to bring about positive behavioural change, individually and collectively (Martinez et al., 2012). One critical component in the development and implementation of community-based behavioural change interventions is the inclusion of formative research; the social ecological model for health promotion offers a comprehensive framework for guiding the formative research process (Martinez et al., 2012). Formative research helps to prioritize intervention goals and objectives by involving the target population from the outset and giving them a voice so that individual and community needs are identified and targeted (Glasgow & Emmons, 2007; Martinez et al., 2012). These voices are necessary to develop appropriate health interventions that are informed by the subjective experiences, perspectives, and needs of the target population and adapted to the application context, thus ensuring sustainable approaches are employed (Pardo et al., 2014). Therefore, in order to develop effective and sustainable smoking cessation interventions for pregnant and parenting young women, we need to invest the time and resources into understanding their unique needs so as to appropriately tailor strategies that foster their cessation efforts.

### **Study Design**

The methodology chosen for this qualitative inquiry was interpretive description (Thorne, Reimer Kirkham, & MacDonald-Emes, 1997). Interpretive description uses an inductive analytic approach that is intended to broaden understandings and generate useable knowledge pertaining to clinical nursing contexts through the inductive development of practice-relevant findings (Hunt, 2009; Thorne et al., 2004; Thorne,

2008). Interpretive description was developed as a response to an expressed need for a more nursing-centric approach to qualitative inquiry (Thorne, 2008). Due to the unique roles and responsibilities of nurses, expressed in philosophical underpinnings and theoretical foundations of the nursing discipline, many nurse researchers were overwhelmed with challenges when trying to strictly adhere to the principles of traditional methods such as grounded theory, ethnography or phenomenology, as they vary greatly from nursing's domain of inquiry (Thorne et al., 1997; 2004). In essence, the conventional qualitative methodological traditions adapted from the social sciences, each with very specific, prescriptive designs and language, are not always compatible with applied disciplines. As such, many nursing scholars and health researchers attempted to borrow and blend components from various traditional methodologies in hopes to justly answer health field questions, which resulted in "methodological slurring" (Baker, Wuest & Stern, 1992; Thorne, 2008).

Interpretive description was fashioned to respond to needs within nursing science and not only offers a rich foundation of new knowledge of the phenomenon of interest, but also acts as a guide to transform knowledge into a usable form that will be meaningful and relevant to the clinical context (Thorne, 2008). Rather than providing a prescriptive circumscribed sequence of steps, as do the other prominent methodological traditions, interpretive description allows the researcher to more freely explore the phenomena of interest using the methodological approaches best suited to inform the data as the study unfolds (Thorne, 2008). This methodology allows the researcher the ability to shape new insights and evolving ideologies and generate useable knowledge that has applications of

evidence to practice (Thorne, 2008). It offers the researcher more creative freedom and empowers them to apply substantive logic learned from practice experience and disciplinary orientation to justify adaptations and base decisions rather than conforming to strict adherence to the conventional methodological traditions that may not necessarily fit with the emerging data (Thorne et al., 2004; Thorne, 2008).

The results of a health needs assessment on locally available smoking cessation services at one public health unit in Ontario identified a need to develop stronger supports for pregnant and parenting youth. The needs assessment identified this high-priority group very difficult to access through smoking cessation programming. During graduate studies, the researcher worked closely with members of this public health unit conducting preliminary research to assess the feasibility of developing a young parent smoking cessation program. Further exploration of this community-based need identified this was not only a local issue but also a provincial concern. After a comprehensive literature review, the researcher identified an evidence gap in understanding the contextual issues that influence pregnant young women's and young mothers' smoking behaviour, which became the inspiration and focus for this thesis. An in-depth exploration of how the personal experiences and contextual circumstances influence pregnant and parenting young women's smoking behaviours would address this evidence gap and help health care providers better understand how interacting factors may predispose them to continue smoking in pregnancy or relapse postpartum. This enhanced knowledge and understanding may help care providers relate to pregnant and parenting young women and their unique struggles, and provide non-judgmental, comprehensive care as well as



youth-centered smoking cessation counselling. Since interpretive description intends to generate usable knowledge concerning a nursing practice issue through developing meaningful, practice-relevant findings, interpretive description was chosen for this study (Thorne, 2008). By capturing the perspectives and experiences of pregnant and parenting young women through in-depth interviews and extracting and interpreting common patterns and themes, the researcher hoped to offer strategic direction toward designing more sensitive and effective smoking cessation programs and supports that specifically address the complex needs of pregnant and parenting young women.

Although it is common in interpretive descriptive studies to utilize multiple data sources to bring subjectively derived knowledge to the forefront - recognizing the “most probable truths” are often those that have been reached using multiple angles of vision - this research design capitalizes on the rich dialogues evoked from individual interviews, borrowing from phenomenological methods (Johnson, 1996; Sandelowski, 1996; Thorne, 2008). Other data sources were not utilized in this qualitative inquiry for several reasons. First, focus groups with young mothers would have been very difficult to convene as there would have been challenges trying to coordinate convenient times and to recruit enough participants to engage in a focus group. The researcher also did not want to overwhelm or overburden the participants by requesting that they submit photographs, excerpts from a participant diary or other artifacts as data sources to supplement the data obtained from the interviews. The researcher wanted to ensure that the participants did not feel any additional pressure or stress from their involvement in the study and decided it best to guarantee their participation involved very minimal time commitments.

Additionally, the researcher wanted to put an emphasis on the voices of young women - highlighting the concerns, struggles and everyday challenges they face - without exploring the issue from the perspective of health care providers working with these young women because this is what is truly lacking in the qualitative literature. Exploring the issue solely from the vantage point of pregnant and parenting young women prevented the possibility of minimizing their stories by cross-examining the issue from a health care perspective. Lastly, because this was a small qualitative exploratory study limited by time and resources, a single data source was justifiable for developing a genuine understanding of the issue (Thorne, 2008).

### **Study Setting**

The aim of qualitative research is to identify a definable setting in which the phenomena can be positioned meaningfully within a specific social environment (Holliday, 2007). To maximize understanding of the issue through learning from different contexts and experiences, study participants were recruited from various regions of Ontario. The researcher had initially planned on recruiting from specific regions that were of close proximity and within reasonable driving distance, namely Hamilton-Wentworth, Halton, and Peel regions. This plan was due to the researcher's familiarity and established relationships with various health care providers, clinical leaders and program directors in these regions. However, a decision was made to expand the geographical boundaries after young women from further regions of Ontario began to express interest in the study. The study setting was extended to capture more diverse characteristics of the population of interest, including more rural and sparsely populated regions of Ontario. Young

women who expressed interest in participating in the study and met all eligibility criteria were invited to participate as long as those living at greater distances were willing to complete a telephone interview.

### **Sampling Strategies**

Interpretive description methodology requires purposeful sampling (Thorne, 2008). Purposeful sampling entails selecting information-rich cases or specific individuals by virtue of an experience so as to inform an in-depth understanding of a particular phenomenon (Creswell, 2007; Thorne, 2008). Patton (2002) proposed several types of purposive sampling techniques, some of which were strategically employed and described below.

A prominent sampling strategy in interpretive description studies is theoretical sampling, which derives from grounded theory methodology (Glaser & Strauss, 1967; Strauss & Corbin, 1998; Thorne, 2008). Theoretical sampling is when sampling is informed by the evolving theoretical variations that are derived from the data as the study is being conducted (Thorne, 2008). This strategy attempts to detect and explain the manifestations of a theoretical construct of interest and its variations for purposes of developing nursing knowledge (Thorne, Reimer Kirkham & MacDonald-Emes, 1997). Simply put, it involves sampling the most likely variations within the theme under study so that the sample is representative of the phenomenon of interest (Morse, 1995; Patton, 2002). Using theoretical sampling, the researcher therefore can seek out cases to further inform an emerging theme and extract more meaningful conceptualizations of the patterns and relationships between core concepts as they begin to unfold (Thorne, Reimer

Kirkham & MacDonald-Emes, 1997). The researcher attempted to actively sample young women on the basis of their potential ability to represent theoretical constructs and tried to capture young women with differing smoking behaviours from pre-conception, throughout pregnancy and in the postpartum period (Patton, 2002). Young women who considered themselves highly dependent on tobacco and smoked two packs of cigarettes per day prior to pregnancy would have different motivations for smoking and perceptions about abstaining than young women whom previously contemplated quitting and did not consider themselves dependent on tobacco. Various participant perspectives and experiences related to smoking during and after pregnancy were important to include. Theoretical sampling helps to provide structure and supports a constant comparative method of analysis, which is a recommended strategy in interpretive description (Thorne, 2008).

Criterion sampling or the identification of explicit, predetermined eligibility criteria to review and study all cases that match explicit criteria of importance is a type of purposeful sampling (Patton, 2002; Suri, 2011). Young women were eligible to participate in the study if they: 1) were between the ages of 16-24 years; 2) pregnant or parenting (up to 2 years postpartum); 3) smoked regularly prior to pregnancy (also referred to as a ‘daily smoker’ which is defined as an individual who smokes at least one cigarette per day based on WHO classification of smoking definitions (CDC, 2009) and currently smoked OR reduced their smoking OR quit smoking sometime throughout pregnancy/postpartum; 4) could read, write and speak English; and 5) were a resident of Ontario. Individuals were excluded from the study if they admitted to smoking only

casually or occasionally (less than one cigarette per day) prior to pregnancy (WHO, 1998). Pregnant and parenting teenaged girls under the age of 16 years were not included in the study as they are an especially vulnerable group and inclusion of girls less than 16 years of age would pose more ethical challenges, such as obtaining parental consent for them to participate in the study. Young women were eligible up to two years postpartum as it was important to encapsulate the attitudes and perspectives of parenting young women to help explain the high rates of postpartum relapse amongst parenting youth. The decision to exclude participants over 2 years postpartum was made in order to capture the time after birth that women who made attempts to reduce or quit smoking during pregnancy were at greatest risk of relapsing back to previous smoking habits (Pregnets, 2012) while at the same time reducing the risk of recall bias. Recall bias is when participants are asked to recall certain information or events and there is either an intentional or unintentional differential recall or reporting of information, which poses threats to internal validity and credibility of studies using self-reported data (Hassan, 2006).

Another type of purposeful sampling is maximum variation. A telephone-screening guide was developed to ensure interested young women met eligibility criteria. Using this guide, potential participants were strategically selected prior to scheduling interviews in order to achieve maximum variation sampling (Patton, 2002; Thorne, 2008). This screening process thereby ensured that the sample reflected a wide spectrum of information-rich cases (maximum variation) with a variety of situational factors and demographic characteristics that could impact smoking behaviours. The researcher sought

maximum variation across characteristics such as age, geographic region, number of weeks gestation or weeks postpartum, number of cigarettes smoked/day prior to pregnancy, and smoking status/frequency of smoking postpartum. The researcher also was prepared to actively seek out assistance from care providers in various settings (e.g., young parent programs serving particular groups) and express the need for a more varied sample; however, this strategy did not need to be employed. This may have been necessary if young women with certain characteristics were not forthcoming as potential participants.

Extreme or deviant case sampling also was used. This sampling strategy involves selecting cases that are unusual or distinct in some way to inform a more complete understanding of the spectrum of potential experiences, such as outstanding success stories and noteworthy failures (Patton, 2002). The researcher sampled pregnant young women who were able to quit smoking ‘cold turkey’ after finding out they were pregnant and maintained abstinence postpartum and conversely, sampled young women who did not alter their smoking habits throughout pregnancy. Searching for highly unusual cases of the phenomenon of interest or cases that are considered outliers, as in extreme case sampling, can help to develop a richer, more in-depth understanding of a phenomenon (Cohen & Crabtree, 2006). In addition, the extreme nature of the cases is what renders them powerful and lends credibility to one's research account (Cohen & Crabtree, 2006; Patton, 2002; Suri, 2011). Intensity sampling, which follows the same logic as extreme case sampling, was also helpful once it was determined throughout the data collection and analysis phases that it was necessary to sample information-rich cases that intensely

embodied the phenomenon of interest to elucidate understanding and interpretation (Patton, 2002). The researcher aimed to include cases that intensely manifested the phenomenon of interest, such as young women who struggled to reduce their cigarette use. Both extreme case sampling and intensity sampling strategies were employed after gathering some preliminary information, engaging in exploratory work, and using judgment to determine the nature of variation, and thereby ascertain which cases should be selected to paint a true picture of the phenomenon of interest (Patton, 2002; Suri, 2011).

A final sampling strategy that was attempted was snowball sampling because recruitment was quite slow at the outset. Snowball sampling is a technique that is used by researchers to identify potential subjects in studies where subjects are hard to locate; study participants are asked to assist researchers in identifying other potential subjects who meet eligibility criteria (Creswell, 2007). However, this strategy was not as successful as the researcher had hoped as very few young women were recruited from snowball sampling. Study participants may not have felt comfortable recommending others because the topic is considered taboo and they did not want others to know of their smoking habits while pregnant or child-rearing.

### **Recruitment Strategies**

Young women were recruited from a variety of community and health care settings that provide services to pregnant and parenting youth (e.g., maternity and midwifery centres, antenatal clinics, public health prenatal and young parent programs, and hospital specific women's and infants' programs). The study was first introduced to

health care providers by posting messages on the Maternal Newborn and Child Health Promotion (MNCHP) Network's electronic listserv. The MNCHP Network was established by the Best Start Resource Centre (BSRC) in 2001 (BSRC, 2015b). The Network has over 1,600 members, including a wide range of service providers (e.g., public health nurses, community health workers, early childhood educators, social service workers, midwives, doulas and family physicians), policy-makers, advocates, activists, researchers, child and family service organizations, and leaders in maternal, newborn and child health promotion (BSRC, 2015b). The Network allows members from all areas of the province of Ontario and health care professionals from diverse sectors and regions to exchange evidence-based up-to-date information, share new research findings, resources and initiatives, and actively discuss current preconception, prenatal and child health issues (BSRC, 2015b). The BSRC also offers free membership for other online networks (listservs) such as the Healthy Babies Healthy Children (HBHC) Network, which is a province-wide electronic forum that promotes and facilitates information sharing for HBHC program staff. This listserv, which offers a vehicle to share and receive current, evidence-based information regarding topics related to HBHC programs and maternal, newborn and child health, was also chosen to circulate study information (BSRC, 2015b). The researcher posted a short description of the study and an introductory letter to gatekeepers, requesting assistance with recruitment of young women (Appendix C).

Health care providers from across Ontario who were interested in promoting the study and wished to assist in disseminating information about the study or aid in participant recruitment were asked to respond to the listserv posting. Upon their request



they were sent proof of ethics approval, recruitment posters, and study information pamphlets. Posting on the listserv not only increased awareness of the study, but also helped the researcher to establish connections with healthcare providers from different regions and generated some creative recruitment strategies. For instance, the MoHERS Program (standing for ‘Mother’s Health Education, Research and Screening’, which is a reputable Canadian website offering current, research-based information on maternal health topics) offered to post information about the study on their website (<http://www.themothersprogram.ca/>) and popular pregnancy book authors offered to post information about the study through various social media outlets. Spreading awareness of the study via the listservs and MoHERS website enabled recruitment of several participants from more sparsely populated mixed urban/rural areas of Ontario that have high rates of smoking and teen pregnancy.

Recruitment posters and study information pamphlets (Appendix D, E and F) were distributed to a select groups of clinical nurse managers, nurses, nurse practitioners, midwifery groups, and key personnel within local hospital administrations (clinical leaders of women’s and infants’ programs and nurse managers of maternal child units) as well as public health program managers and staff in Halton, Hamilton-Wentworth, and Peel regions. These personnel, who were selected based on personal connections with the research team, were key contributors and collaborators in the study. They were essential throughout the research process in assisting with the advertisement of the study and recruitment of study participants. These administrators and care providers were asked to distribute study information pamphlets and offer recruitment information to eligible

young women. A study logo was developed to help young women and maternity care providers identify the study (Appendix G). In addition, the study was termed the “Pregnant and Parenting Young Mother’s Smoking Study” or PPYMSS for short, as the researcher thought this would be a unique and catchy name that would appeal to the population of interest.

St. Joseph’s Hospital in Hamilton was the only hospital site chosen for recruitment. Study information posters were displayed throughout the hospital on bulletin boards, in elevators, and patient waiting areas. Potential participants were recruited in the “Mother-Baby” Postpartum-Combined Care unit and the antenatal assessment clinic in the Women’s and Infants’ Program at the hospital. The researcher attended unit-based “team huddles” for several weeks to outline key information about the study, inform staff of the study aims and objectives, and discuss eligibility criteria. The nursing staffs were instrumental in assisting with study recruitment by assessing patients’ eligibility, gauging their interest, and providing study information to potential participants. Young women who were deemed eligible to participate in the study were provided with verbal and written information regarding the study and asked permission to have their name and contact information forwarded to the researcher by signing the ‘Consent to Contact Form’ (Appendix H). Once contact information was provided, the researcher telephoned the young women, further explained the study and answered any questions they had. If still interested, the researcher sent them the ‘Informed Consent Form’ via email and initiated discussion about arrangements for the interviews with consenting individuals (see Appendix I).

The Maternity Centre of Hamilton and the Hamilton Midwives Clinic, both located near St. Joseph's Hospital, also promoted the study by posting study information materials. At each recruitment site, clinical leaders acted as champions (MacDougall & Fudge, 2001). These individuals were influential, highly esteemed team leaders that demonstrated active interest and enthusiasm in supporting the study and led efforts to promote the study amongst their colleagues, motivating and guiding them in the recruitment of study participants.

Additionally, the researcher did a PowerPoint presentation promoting the study to directors of the Young Parent Network (YPN) and program facilitators of local teen pregnancy support services throughout the Hamilton region and requested assistance with participant recruitment. The YPN is a partnership between three community services that help young pregnant women and mothers, namely Angela's Place, Grace Haven, and St. Martin's Manor. The directors and program coordinators expressed great interest and willingness to help promote the study. As such, public health nurses who facilitated the teen prenatal groups at Angela's Place, St. Martin's Manor, and Grace Haven in Hamilton were sent study information and recruitment flyers to promote the study during weekly group meetings. Several public health nurses within the Canadian Perinatal Nutrition Program (CPNP), Welcome Baby, HBHC, and other young parent perinatal support groups in Halton and Hamilton-Wentworth regions promoted the study in their weekly group sessions. The researcher also coordinated dates with public health nurse facilitators to visit prenatal and young parent groups to briefly introduce the study to group participants and offer posters, brochures, and website information to anyone interested in

participating. In Peel Region, the researcher visited several “Teen Prenatal Supper Club” sessions to promote the study.

Finally, the study was promoted using social media. A study website and Facebook page were designed to promote the study and capture wider audiences. The Facebook page provided a brief summary of information pertaining to the study, promotional posters in jpeg format and the researcher’s contact information. The study website (<http://dawdyjl.wix.com/ppymss>) had more detailed study information such as study goals and objectives, eligibility criteria, consent forms, and information about resources for smoking cessation supports available locally as well as across Ontario. It also offered the ability for young women to email the researcher directly and request more information about the study or learn about becoming a participant. The website address was included on study posters (refer to Appendix E). Study information or a link to the study Facebook page or study website was posted on young mother social media pages, and public health community pages. (See Appendix J for information presented on social media websites).

Individuals who were interested in participating in the study were asked to contact the researcher by telephone or email. Once contacted, the researcher utilized the telephone screening guide to assess eligibility and once an individual was deemed eligible, provided further information regarding the study, answered any questions, and obtained verbal consent to participate in the study. Email, telephone or text confirmation of the interview details was sent to the participant (as per their previously discussed preferences for contact) prior to the interview taking place.

## **Data Collection**

In-depth, semi-structured interviews were chosen to allow the pregnant and parenting young women to discuss the factors that influenced their smoking behaviour. Individual interviews were chosen to elicit the young women's experiences and perspectives, allowing them to talk freely and allowing the researcher to delve deeply into their personal and social matters. Individual interviews are particularly useful in the exploration of complex behaviours and in understanding decision-making processes (DiCicco-Bloom & Crabtree, 2006; Turner, 2010).

Young women that were within 45 minutes driving distance from the researcher's home were able to choose a telephone or in-person interview. Young women who contacted the researcher from more distant regions and expressed interest in participating in the study were offered a telephone interview. Softphone technology trialed at York University was utilized to complete these interviews. Softphone is a software program that allows an individual to make calls over the Internet from a designated computer. This new technology is unique to York University and has the added benefits of allowing the researcher to record telephone conversations and have the audio-files automatically save to a secure folder. The researcher was granted access and permission to use this technology from her thesis committee member who had downloaded the software onto a research laptop to assist in the interviewing and recording process. This technology allowed the researcher to call participants toll-free through the computer, record and safely store audio files directly into a secure folder on the laptop. The laptop and study folder containing all study files and materials were also password protected to ensure

access was tightly controlled and all data were safely stored.

There have been several studies testing the comparison of face-to-face interviewing with telephone interviewing in qualitative studies. Studies comparing interview transcripts have revealed no significant differences in the quality of interviews and have concluded that telephone interviews can be used very effectively in qualitative research, particularly when trying to obtain substance use and substance-related harms data (Midanik & Greenfield, 2003; Novick, 2008; Sturges & Hanrahan, 2004). Telephone interviews are useful for accessing participants at greater distances and can save in time and travel expenses (Sturges & Hanrahan, 2004). Telephone interviews also have the advantage of being less intrusive and can allow respondents to feel more relaxed and able to disclose information on sensitive subjects such as smoking in pregnancy due to an increased sense of anonymity (Sturges & Hanrahan, 2004; Turner, 2010).

An interview guide was developed that contained some predetermined questions for the interviews and probing questions (Appendix K); however, the participant responses also helped to guide the direction of the interview and determine the sequencing of questions. The opening questions in the interview guide were carefully ordered to facilitate rapport and establish trust prior to asking questions of a more sensitive nature and probing for deeper meanings (Creswell, 2012; DiCicco-Bloom & Crabtree, 2006). In interpretive description, the growing understanding and new knowledge generated from the emerging data must inform the other elements of study design, hence the framework used to help guide the study design must be carefully considered and regularly examined to ensure proper fit within the data (Thorne, 2008).

The interview guide was based on the social ecological model (McLeroy et al., 1988) and questions were framed to address the various levels of influence, from intrapersonal factors to public policy. Therefore, the interview guide incorporated questions related to the participants' history of cigarette use and individual-level determinants, the influence of peers, family and friends on smoking behaviour, social determinants influencing their smoking, and environmental factors affecting their smoking at the institutional, community and policy level. The researcher also asked questions regarding the participants' awareness of, perceptions and experiences with accessing community smoking cessation supports and services as well as their suggestions for improving future cessation supports for young women during and after pregnancy. During the interview, the researcher emphasized that her aim was to understand the participant's perspective of the issue free from judgment and the participant was asked to elaborate or clarify specific ideas or concepts on occasion to prompt more thorough descriptions. (See Appendix K for study questions). These steps were essential because the goal of the researcher was to elicit depth and foster elaboration and clarification of the initial understandings within participants' accounts of the issue (Thorne, 2008).

Imperative to the design of interpretive description methodology is the inclusion of some elements of concurrent data collection and constant comparative analysis as these strategies encourage ongoing engagement in the research process and allow the researcher to be fully immersed in the data (Thorne, 2000; Thorne et al., 2004; Thorne, 2008). Data collection and data analysis proceeded concurrently as an iterative process, which allowed for the refinement and revision of interview questions and inclusion of exploratory probes

in subsequent interviews based on ideas generated from previous interviews. These strategies allowed the researcher to compare and contrast the different manifestations of the phenomena to generate new, meaningful knowledge that was inductively derived from the data (Thorne, 2008).

Young women who agreed to participate in the study were emailed, texted or called prior to the scheduled interview to ensure they were still available and willing to participate in the study. Initial interviews were approximately an hour in duration and all participants received a complementary Walmart, grocery or Shopper's Drug Mart gift card of \$15.00 value in appreciation for their time and commitment to the study. At the end of the initial interview, participants were asked if they would consent to a second contact, which consisted of a second shorter telephone interview (lasting roughly 45 minutes in length) as a form of member checking to confirm themes and to help verify the researcher's preliminary understandings and interpretations of the emerging data (Creswell & Miller, 2000). Participants who completed the second interview received additional compensation in the form of another gift card valued at \$5.00. These gift cards were distributed following the interviews in-person or mailed to the participants who completed telephone interviews. Follow-up calls were made to participants to ensure they received the gift cards if sent by mail.

Due to the sensitive nature of the topic, and the fact that some young women may have been fearful of judgment or ashamed of reporting their smoking behaviours throughout pregnancy and postpartum, every effort was made to ensure participants felt comfortable to speak openly and free of judgment. Participants had the option to complete



interviews over the phone on a toll-free line if they felt that this option would make them feel more comfortable confiding information. Interviews held in-person were conducted at local community agencies that serve these young women. If the participant voiced a preference for an in-person interview, the researcher coordinated with program directors at local Ontario Early Years Centres, the Kiwanis Boys' and Girls' Club Program Coordinator or Directors of Young Parent Network housing to book private meeting/conference rooms to hold the interview.

Rather than sampling and data collection continuing until saturation is reached, in interpretive description these processes are ongoing until the researcher can justifiably provide a rich description of participant experiences that will make meaningful contributions to the field (Thorne, 2008). Thus, recruitment and data collection continued until the researcher had reached an in-depth exploration of the phenomenon, captured a wide variation in the subjective experience, and generated findings that would be transferable to other clinical settings. Demographic data were obtained from the participants at the end of the interview through a structured set of questions so that the researcher could describe the characteristics of the study sample, thereby allowing others to determine the transferability of the findings to their settings (Appendix L).

The completed audio-recorded interviews were encrypted and then sent to a transcriptionist. After receiving the transcripts, they were compared word-for-word with the audio files by the interviewer to ensure accuracy and corrections were made as necessary. Following the review of the transcripts with audio files, participant identifiers were removed before proceeding to data analysis.

## **Data Analysis**

Interview transcripts were read several times to gain a sense of the whole content and to maintain engagement with and full immersion in the data. The transcribed interviews were entered into NVivo 10 to allow the researcher to organize, analyze, code and examine relationships in the qualitative data (Creswell, 2012). The thematic interpretive analysis followed the guiding principles described by Thorne (2008) in what she referred to as ‘making sense of the data’ for interpretive descriptive studies.

Qualitative content analysis involved coding significant words, phrases or sentences that directly related to the lived experience of interviewees, then identifying emerging patterns and conceptual themes derived inductively from analysis within and across the individual interviews (Thorne, 2008; Thorne et al., 2004).

The researcher was careful to avoid early and excessive coding (Pfaff et al., 2014; Thorne, 2008). Broad-based, generic coding was completed initially and then continuously refined with further analysis (Thorne, 2008; Thorne, Reimer Kirkham & O’Flynn-Magee, 2004). According to Thorne et al. (2004), extensiveness is more useful than precision in the early stages of the coding and organizing process to broaden conceptual linkages and allow the shape and direction of the inquiry to evolve as new analytic possibilities arise. Coding was critically evaluated at every stage of analysis, moving beyond the theoretical framework (being the social ecological model) as preliminary interpretations were tested and challenged, in order to advance the early descriptive claims toward emerging interpretations that would highlight the phenomenon under investigation in a new and meaningful manner (Thorne, Reimer Kirkham &

O'Flynn-Magee, 2004). Codes were sorted and organized into patterns and then analysis involved trying to make sense of the relationships within and between various coded groupings to inductively build upon an iterative reasoning process and coherent coding scheme (Thorne, 2008).

The researcher sought out the expertise of her supervisory committee to engage in the coding process to determine initial codes from the first grouping of transcripts (Creswell, 2012). In order to confirm inter-coder consistency, the researcher teleconferenced with her supervisory committee members to discuss and compare codes and possible organizational schemes. These individuals initially did the coding independently. From these discussions, a coding scheme was developed and applied to subsequent interviews, and revised as necessary to reflect new ideas emerging in the data. Codes representing similar ideas and patterns within and across interviews were clustered once data redundancy was evident and then, reduced through categorical aggregation (Pfaff et al., 2014). Themes were then organized following the general structure of the social ecological model and sorted according to the five levels: individual, interpersonal, organizational, community, and policy levels (McLeroy et al., 1988). Subsequently, the deconstructed coding branches and organizational charts of emerging themes and sub-themes were reviewed with the research team (thesis supervisory committee) to assure the researcher's analytic judgments and interpretive processes were clear and auditable, and to form mutual agreement on the formulated codes that were derived from the data (Creswell, 2013). Discrepancies were discussed until consensus was reached.

Meaningful and grounded conceptualizations were evoked by following four related cognitive processes articulated by Morse (1994). This taxonomy of cognitive operations, namely comprehending, synthesizing, theorizing and re-contextualizing helped to guide the analytic process from early exploration through to a coherent report depicting the connections and common elements of the clinical phenomenon and contributing to a new understanding with implications for changing practice (Morse, 1994; Thorne, 2000; Thorne et al., 2004; Thorne, 2008). This helped to move the analysis beyond the initial coding according to the social ecological model for greater interpretation of the data. Memos were made throughout the analysis process to help make inferences from the data and document analytic thinking based on Thorne's (2008) recommendation. The researcher created memos in both Microsoft Word and NVivo10 to highlight significant statements among cases, track emergent patterns and themes, enter collections of thematic lists, and record thought processes (Thorne, 2008).

Analytic logic is necessary in interpretive description. Because interpretive description methodology is not as structured and law-laden as other more traditional methods, it is imperative that the researcher make explicit the reasoning for each decision made through the process and provide rationale as to how each knowledge claim was derived from what was learned from the evolving data (Thorne, 2008). Inductive reasoning cannot be inferred; therefore evidence of the logic was made evident throughout this qualitative thesis. Critical analytic decisions were explained in detail in this report to provide a clear reasoning pathway that another could follow (Thorne, 2008). Finally, the exhaustive description of the phenomena and the researcher's developing

interpretation of study findings was presented to the researcher's supervisory committee for validation and feedback. To avoid premature closure on the meaning of the study findings, data patterns and interpretations were explored by considering multiple viewpoints and alternative explanations (Pfaff et al., 2014; Thorne, 2008). The demographic data were organized and summarized using descriptive statistics in SPSS Statistics 19 software.

### **Strategies to Promote Trustworthiness**

In qualitative research, it is important to discern whether the study is believable and methodologically correct, and whether it is useful to people beyond those who have participated in the study (Sanders, 2003). A number of strategies were used to promote rigor and trustworthiness in terms of credibility, transferability, dependability, and confirmability (Krefting, 1991; Lincoln & Guba, 1985; Morse et al., 2008).

Credibility is similar to internal validity in quantitative studies and refers to the ability of the researcher to present an accurate description and interpretation of the investigated experience so that people who share the same experience would immediately recognize and accept it as true (Krefting, 1991; Thomas & Magilvy, 2011). In order to assure credibility, the researcher conducted all interviews, rigorously reviewed and compared the audio-recordings with the transcribed verbatim for accuracy, read the transcripts several times to gain a complete sense of participants' descriptions, and concurrently conducted data collection and analysis to ensure full immersion in the data. The researcher spent an extended period of time with sustained engagement in the research process, analyzing and interpreting data, to enhance credibility of research

findings through intimate familiarity and immersion in the data (Guba, 1981; Krefting, 1991; Twycross & Shields, 2005).

Another technique used to enhance credibility was reflexivity, which is the examination of how the researcher's own background, perceptions, beliefs and experiences may influence the research (Krefting, 1991). Self-awareness of the researcher became of particular importance as the researcher's clinical background is in neonatal intensive care and the researcher had to be cautious not to let her health care provider background influence data gathering or analysis (Koch, 2006; Krefting, 1991; Thorne, 2008). It was important to be aware of and reflect upon the impact of the two roles (nurse and researcher) on the study. The researcher reflected on her thoughts, feelings and ideas generated from the interviews with the young women. Some written reflections were typed and compiled in a Word document and others were discussed with members of the supervisory committee.

Member checking (also known as informant feedback or respondent validation) is when the researcher solicits the participants' feedback to verify interpretations and meanings; it also enhances credibility of findings (Krefting, 1991). The researcher proactively began the process of member checking to ensure that the researcher's representation of the participant's experience was immediately detectible and accurate, and captured the essence of their conversations from the first interview (Lincoln & Guba, 1985; Twycross & Shields, 2005). According to Lincoln and Guba (1985), member checking is the most valuable means for establishing validity because it empowers participants to assess researcher interpretations and preliminary analyses, and judge the

accuracy and credibility of the account. Within interpretive description, the researcher must provide substantive evidence that his or her interpretations are trustworthy and are not influenced by one's own bias or previous experience (Thorne, 2008). Member checking helped to ensure the researcher's interpretation of the data reflected subjective experiences accurately (Krefting, 1991). Six of the thirteen study participants completed second contact interviews. They were asked questions based on the data gathered to date to reiterate and confirm their subjective experiences and ensure the researcher's representation 'fit' their perspectives and experiences (Lincoln & Guba, 1985). In addition, member checking was completed through interweaving of informant connections so that the key themes and ideas that presented from the analysis of one interview were checked with another informant interview to ensure that the emerging analysis was representative of the common truths and was a valid interpretation (Krefting, 1991).

Peer debriefing is another strategy to increase credibility of interpretations of data whereby ongoing analysis and findings are regularly presented to others for peer evaluation (Sanders, 2003). As such, the researcher requested feedback and validation at various stages of the research process with supervisory committee members (as a form of peer examination) who offered new insights and advice, questioned methods chosen, and challenged the researcher to view the data from different angles (Krefting, 1991; Lincoln & Guba, 1985). Research methods, meanings and interpretations were peer reviewed amongst members of supervisory committee members to support the accuracy of the

interpretation of the young women's lived experience and enhance the credibility of study findings (Creswell, 2013; Krefting, 1991).

Transferability refers to the applicability of study findings to other contexts and settings, and generalizability to larger or diverse populations based on the researcher's description (Krefting, 1991). In order to meet the criterion of transferability, theoretical and maximum variation purposeful sampling were employed (Guba, 1981). The intention was to maximize the range of information that could be uncovered by exploring the phenomena of interest in great depth and from multiple viewpoints. Characteristics of informants were reviewed to ensure there was great variation among the group being studied and informants were selectively chosen to fill in any gaps in understanding the phenomena (Krefting, 1991).

In order to confirm transferability of the study findings, the researcher substantiated that every part of the research process was transparent, methodically sound, and clearly documented (Tobin & Begley, 2004). The researcher ensured the written account of the study contained detailed information regarding participants, selection methods, and data collection and analysis in order to make it transparent to readers and general audiences the context of the study and to whom the findings may be transferable (Krefting, 1991; Sanders, 2003). Rich "thick" descriptions of the research process, context, and study sample permit more accurate comparisons to other contexts to which transferability may be contemplated (Guba, 1981).

Dependability, which is similar to reliability in quantitative terms, refers to the consistency of data and whether the research findings would be consistent if another



researcher were to follow the decision trail and replicate the inquiry using comparable subjects in a similar context (Krefting, 1991; Sandelowski, 1996). Dense descriptions of methodology are necessary to allow the reader to decipher whether or not study is easily repeatable or unique in design, context, and circumstances. Dependability was demonstrated in several ways. First, analytic thinking was demonstrated through memos and reflexive journaling to document decisions made during data collection and analysis and the researcher's role, thoughts, feelings and reflections throughout the research process (Creswell, 2013; Sanders, 2003). An audit trail was kept to manage the data, document decisions about strategies for conducting the study and record thought processes in analyzing the data, coding and identifying themes (Krefting, 1991; Pope & Mays, 1995; Richards & Morse, 1991). The researcher tracked decisions made about theoretical, methodological, and analytic choices and corresponding actions carried out at various stages of the research process to demonstrate how the findings, interpretations, and conclusions were supported by the data. According to Thorne (2008), there should be a defensible argument and explanation regarding each decision made throughout the research process (Thorne, 2008). The strategies listed above were captured in the researcher's typed memos and study progress notes that were catalogued in a password protected study folder on the research laptop.

A code-recode procedure was utilized to increase dependability during the data analysis phase. One section of a transcript was coded and then a week or two later, the researcher re-coded the same segment of data to compare results and ensure consistency (Krefting, 1991). As mentioned previously, peer examination also was used to ensure

dependability by requesting the expertise of committee members to evaluate the research plan and implementation strategies.

To enhance dependability, the researcher intensely engaged in the material, ensured technical accuracy in recording and transcribing, and obtained inter-coder agreement when analyzing transcripts to reach unanimity on codes and developing themes (Creswell, 2012; Sanders, 2003). Inter-coder reliability, as previously mentioned, was established to ensure consistency in coding. After discussing initial codes, patterns and emerging themes, the thesis committee assisted in developing the coding scheme. All members of the supervisory committee offered input and suggestions on each draft of the coding scheme until consensus was reached that the final product was a proper fit for organizing and interpreting data.

The fourth criterion of trustworthiness, confirmability, also can be considered neutrality or the freedom from bias in the research procedures and study findings (Krefting, 1991). Confirmability is comparable to objectivity in quantitative studies and refers to the degree to which the study findings are a product solely of the informants and conditions inherent in the research process as opposed to extraneous factors, biases or other motivations (Guba, 1981). Audit trails, memoing, reflexive journaling and member-checking strengthen the confirmability of the study as they provide evidence that the data produced are not exaggerated or fabricated by the researcher (Koch, 2006; Lincoln & Guba, 1985; Tobin & Begley, 2004).

### **Ethical Considerations**

A number of ethical issues were considered for this study. Ethics approval was obtained from the Hamilton Integrated Research Ethics Board (HiREB), which is a jointly constituted board of St. Joseph's Healthcare Hamilton, Hamilton Health Sciences, and McMaster University Faculty of Health Sciences (McMaster University, 2014).

Verbal and/or written informed consent was obtained from all participants. The researcher sent consent forms via email and thoroughly went over details for consent one-on-one with the participants to ensure comprehension prior to commencing the interview. Because of the potential for low levels of literacy in the target group, all participants were given full disclosure (written and verbal) of the nature of the project, general description of study goals and objectives, time commitment requested, and the risks and potential benefits of partaking in the study (Smith, 2008). During the consent process, the young women were reminded that choosing to participate or refusing would in no way affect the care they received from health care providers throughout pregnancy or postpartum. Moreover, they were told explicitly that they had the option to withdraw from the study at any time, for any reason, without consequence to them (Creswell, 2012).

Respect for privacy and confidentiality is critically important for interacting holistically with participants (Tiedje, 1998). In order to ensure participant safety and privacy during in-person interviews, the interview settings were negotiated with participants to ensure convenient and easy access and conducted in a private room, pre-booked by the researcher, at the family centre or young parent access site of their choice.

In order to protect anonymity and confidentiality, names of participants were

removed from interview transcripts and each participant was given a pseudonym to protect their identity and preserve anonymity. Data collected from interviews were transcribed and the transcript files along with all other study content stored in NVivo or in study computer folders were encrypted and stored on a password-protected research laptop (Richards & Schwartz, 2002). Any information written on paper that may have disclosed participants' identity (e.g., the consent forms and demographic forms) was stored in a locked cabinet and was confidentially recycled after study completion and release of findings. Additionally, any information the participants verbalized they did not wish to be used in the study was automatically destroyed. Study participants who requested to receive a summary of study findings, were sent an email upon study completion containing a brief, layman summary. Lastly, transcripts and digital files that have been removed of identifying information, will be securely stored for a period of up to five years from the completion of the study.

### **CHAPTER THREE: FINDINGS**

A total of 13 pregnant and parenting young women from varied socioeconomic backgrounds and geographical locations throughout Ontario participated in the study. Each participant had different experiences and perspectives of smoking and told her unique story of the circumstances that influenced her smoking behaviour. Six of the 13 participants completed second contact interviews as a form of member checking to corroborate emergent themes. Table 1 displays the sociodemographic characteristics of study participants. Table 2 contains a summary of descriptive statistics regarding the smoking behaviour of study participants.

Eight main themes materialized from the analysis and interpretation of interview data. These themes were reflective of significant statements, thematic patterns and conceptual underpinnings that emerged from the interviews as they related to the research objectives and study questions. The main themes extracted from the interviews were: (1) Adolescent Pressures: Developing an Identity as a Smoker, (2) Barriers and Baggage, (3) Re-conceptualizing Smoking During Pregnancy and Wanting to Quit, (4) Missed Opportunities For Providing Smoking Cessation Counselling and Support, (5) Smoking: A Crutch and Key Coping Mechanism, (6) The Stumbling Block: After the Birth of the Baby, (7) Wanting to Protect Their Children and Prevent Them From Smoking, and (8) Reflections and Recommendations for Support. Refer to Table 3 for a summary chart of study themes and sub-themes.

Table 1  
Sociodemographic Characteristics of Study Participants

<b>Table 1. Sociodemographic characteristics of study participants (n=13)</b>	
<b>Characteristic</b>	<b>Mean (SD)</b>
Maternal age (years)	20.15 (2.58)
	<b>n (%)</b>
<b>City (Regional Municipality/District)</b>	
Hamilton (Hamilton-Wentworth)	5 (38.5)
Stoney Creek (Hamilton-Wentworth)	1 (7.7)
Mississauga (Peel)	2 (15.4)
Oshawa (Durham)	1 (7.7)
Sudbury (Sudbury District)	3 (23.1)
Wikwemikong (Manitoulin District)	1 (7.7)
<b>Pregnant or Parenting Status</b>	
Pregnant	2 (15.4)
Postpartum	11 (84.6)
<b>Number of Children (including current pregnancy)</b>	
1 <sup>st</sup> Child	7 (53.8)
Two or more children	6 (46.2)
<b>Marital status</b>	
Married	0 (0)
Common-law/living with partner	8 (61.5)
In a relationship but not living together	2 (15.4)
Single (never married)	3 (23.1)
Divorced	0 (0)
<b>Household Income</b>	
No income	1 (7.7)
Below \$10,000	5 (38.5)
\$10,000 to \$19,999	4 (20.8)
\$20,000 to \$39,999	0 (0)
\$40,000 to \$59,999	2 (15.4)
\$60,000 to \$79,999	0 (0)
Unsure	1 (7.7)
<b>Highest Level of Education</b>	
Some high school	9 (69.2)
Completed high school	3 (23.1)
Some community college	1 (7.7)
Completed community college	0 (0)
Some university	0 (0)
<b>Employment Status</b>	
Unemployed	11 (84.6)
Unemployed but looking for employment	1 (7.7)
Employed part-time	1 (7.7)
Employed full-time	0 (0)
<b>Receiving Financial Assistance e.g., Ontario Works (OW) or Ontario Disability Support Program (ODSP)</b>	
Yes	9 (69.2)
No	4 (30.8)
<b>Language Spoken Most Often at Home</b>	
English	13 (100)

Table 2  
Participant Smoking Behaviour Before, During and After Pregnancy

<b>Table 2. Participant Smoking Behaviour in Pregnancy and Postpartum (n=13)</b>	
<b>Characteristic</b>	<b>Mean (SD)</b>
Age smoked first cigarette (years)	14.77 (2.68)
Age started smoking daily (years)	15.69 (1.97)
Number of years smoking to date	4.62 (2.50)
Number of cigarettes smoked daily preconceptionally	14.5 (7.68)
	<b>n (%)</b>
<b>Change to Smoking Habits in Pregnancy</b>	
Quit	8 (61.5)
Reduced	4 (30.8)
No change	1 (7.7)
<b>Smoking Postpartum (excludes pregnant participants: n=11)</b>	
Yes	9 (81.8)
No	2 (18.2)
<b>Current Smoking Status (at time of interview)</b>	
Daily	8 (61.5)
Occasionally	1 (7.7)
Never	4 (30.8)

### **Adolescent Pressures: Developing an Identity as a Smoker**

The young women in this study discussed how their smoking habits were derived from a number of common pressures they faced such as academic pressures and pressures to fit in amongst their peers. While they tried to develop a coherent identity, they were greatly influenced by the attitudes, values, and behaviours modeled by their peers, parents and others in the household. The young women described how throughout adolescence they developed an identity as a smoker. Under the theme ‘Adolescent Pressures: Developing an Identity as a Smoker’ several subthemes emerged: (1) Pressures in School, (2) Peer Pressures: Desiring to “Fit In” and be “Cool”, and (3) Parental Role Modeling and Mimicking Behaviours of Others in the Household.

Table 3  
Summary of Themes and Sub-themes

<b>Table 3. Table Summarizing Themes and Sub-themes</b>	
<b>Study Themes</b>	<b>Sub-themes</b>
❖ Adolescent Pressures: Developing an Identity as a Smoker	<ol style="list-style-type: none"> <li>1. Pressures in School</li> <li>2. Peer Pressure: Desiring to “Fit In” and Be “Cool”</li> <li>3. Parental Role Modeling and Mimicking Behaviours of Others in the Household</li> </ol>
❖ Barriers and Baggage	<ol style="list-style-type: none"> <li>1. Needing Partner’s Support to Quit</li> <li>2. The Neighbourhood Effect</li> <li>3. Postponing School and Employment</li> <li>4. Self-Medicating to Cope with Adverse Events of Childhood and Adolescence</li> <li>5. Dealing with Mental Illness</li> </ol>
❖ Re-conceptualizing Smoking During Pregnancy and Wanting to Quit	<ol style="list-style-type: none"> <li>1. Unexpected Pregnancy: Feeling Guilty and Wanting to Grow Up</li> <li>2. Precarious Plans to Quit or Cut Down</li> <li>3. Breathing for Two</li> <li>4. Being Ostracized or Choosing Isolation</li> <li>5. Finding a Quit Smoking Buddy</li> </ol>
❖ Missed Opportunities For Providing Smoking Cessation Counselling and Support	<ol style="list-style-type: none"> <li>1. Discussing Smoking in Young Parent Prenatal Programs</li> <li>2. The Nature of Provider’s Discussions Regarding Smoking with Young Women</li> <li>3. Awareness and Accessibility of Local Cessation Supports/Services</li> <li>4. Misconceptions About Quit Smoking Aids and Cessation Options</li> </ol>
❖ Smoking: A Crutch and Key Coping Mechanism	<ol style="list-style-type: none"> <li>1. Wanting Control: Smoking is a Regrettable Form of Control</li> <li>2. Stress Relief</li> <li>3. Life Stressors Taking Precedence Over Efforts to Quit</li> </ol>
❖ The Stumbling Block: After the Birth of the Baby	<ol style="list-style-type: none"> <li>1. The Breastfeeding Debate</li> <li>2. Re-thinking Consequences After Baby</li> <li>3. Conceding to Cravings and Returning to Old Habits</li> </ol>
❖ Wanting to Protect Their Children and Prevent Them From Smoking	<ol style="list-style-type: none"> <li>1. Future Plans for Quitting so Children Don’t Smoke</li> <li>2. Reducing Children’s Exposure</li> <li>3. Thoughts on a Smoke-Free Ontario</li> </ol>
❖ Reflections and Recommendations for Support	<ol style="list-style-type: none"> <li>1. Wanting More Meaningful Interactions and Regular Discussions</li> <li>2. What Young Women Want: Comprehensive Support in a Group Setting</li> <li>3. Spreading Awareness and Improving Accessibility</li> <li>4. A Plea for Partners, Friends and Family</li> </ol>



### **Pressures in School**

A number of the young women voiced having stresses related to school. Their descriptions of school pressures varied from striving to maintain good grades to flunking out to expulsion for lack of attendance. Smoking was collectively expressed as their means to deal with these school-related stresses. In their narratives, the young women identified the origins of their academic pressures and conveyed that their responses to the challenges they faced in school was largely influenced by social and environmental cues of seeing other high school students smoking and conforming to this behaviour. One young mother explained why she began smoking and spoke of the stress and pressures of planning to go to college: “Like, every friend I had was smoking and then, like, I was stressed out about college and stuff and one day I just decided to have a cigarette and then it became very addicting” [ID005]. This young woman also spoke of the stresses related to getting into college and the weighing of her post-secondary options. She worried about whether her grades would be sufficient for gaining acceptance into certain schools and whether she would have the finances or have means of transportation: “I didn’t know what I wanted to do, how I was going to pay for it, like, how I’m going to get there; when am I going to do it; like, how am I going to do everything...” [ID005]. Another young woman spoke of other school-related stresses and the combined influence of increased exposure to smoking in high school and falling grades that started her on a downward spiral to becoming addicted to smoking in her remark: “I would see, like, other people smoking and my grades were causing me stress and when you go to like, high school, you just see everybody smoking everywhere...” [ID011]. She expanded on this idea:

Oh, school was causing me stress...Because I was getting in trouble in school and I wasn't like, I was like, they were trying to kick me out of school and stuff for skipping class and stuff...I didn't like school at the time ... and then when I got kicked out of school, I had to go to an alternative school so at the alternative school, like, everybody smoked. [ID011]

### **Peer Pressure: Desiring to “Fit In” and be “Cool”**

Study participants commonly reported that they started smoking because their friends smoked and it was considered “cool.” As one young woman said, “I just wanted to fit in with my friends because they were [smoking] and I just thought it was a cool thing to do” [ID007]. Another participant concluded, “Seeing them [her peers] all smoke I felt I actually should be smoking, too” [ID011]. The young women attributed their uptake and increased frequency of tobacco use on collective peer pressure, the coaxing of their friends and a longing to move up the social ladder. The desire to be considered “cool” by peers as a reason for initiating smoking appeared to be of greater concern in smaller secondary school institution settings where there were fewer people to try to fit in with:

There wasn't very many kids in my high school...like, my high school was probably only like, two hundred and fifty people and there wasn't many of them that didn't smoke. Most, like, Grade 9s try and then, after Grade 9 you smoked or you weren't cool... [ID013]

The young women often described scenarios wherein they mirrored their friends' behaviours, which resulted in them trying their first cigarette and being in the company of friends when they had the strongest urges to smoke. One participant described a situation in which her best friend who smoked bet her she could not blow smoke rings:

Actually the day that I had my first cigarette was because my friend bet me that I could not blow smoke rings ... So, I couldn't but ... yeah, so then I didn't...I never really stopped after that ... I was really like, just close with, like, my best friend so it was always just me and her and she smoked so kind of being around her just made me want to too, I guess. [ID013]

Another young woman spoke of how bullying impacted her life and forced her to move across province to escape the hurtful comments and demoralizing actions of her peers. Being a victim of bullying, she struggled to gain acceptance. When asked, “What might have been the reason that you continued smoking from that point that you started?” She replied, “I felt like when my friends lit one, I should and there was times when I wanted to sit in around cooler people that I just met and I just wanted to” [ID007]. Smoking, to her, was a vehicle for easing herself into social situations, trying desperately to fit in to her new surroundings and making new friends. When asked how being bullied might have affected her smoking behaviour, the participant replied, “I would say that I just wanted to fit in and maybe that if I smoked ... people would just think I’m cool, too” [ID007].

### **Parental Role Modeling and Mimicking Behaviours of Others in the Household**

A major factor in smoking uptake and initiation for many young women was their home environment and influence of others in their household. Participants explained that the majority of adults in their lives modeled tobacco use and their parents’ acceptance of smoking made them more inclined to smoke. One young mother described her experience in foster care and how she felt the need to smoke to fit in with other children in the household:

Probably because I was in foster care at the time and, I don't know ... just a lot of the kids I lived with did it [smoked] and it was probably, ultimately, just like, me trying to fit in ... It was hard just because ... a lot of the kids...had been in foster care longer and stuff so they were, like, a little more rough I guess you could say ...and always kind of intimidating and so I just didn't want to look like, I don't know, meek I guess you could say so I guess, that's why I kind of tried to fit in and do what they did. [ID004]

Other participants described how living in a family of smokers made them more inclined to start smoking and posed more challenges when trying to make positive changes to their smoking behaviour. One young woman shared, “My mom smoked as I was growing up. I think that’s why I started smoking” [ID003]. It was not uncommon for study participants to report that the first cigarettes they smoked were stolen from their mothers’ or fathers’ packages of cigarettes that were lying around the house. One young woman commented:

When I was...growing up my mom always used to smoke and she used to smoke around us. The first cigarette that I ever smoked... I took it from my mom...Just because you have access to it in a way, right, because if you're thirteen, fourteen, like, you know, you really don't have access to cigarettes unless you really get them from home...I would just sneak into her pack and sneak one of hers. [ID009]

Being exposed to smoking in the home environment and in social settings at early ages contributed to the young women’s desire to try cigarettes and disregard of the health consequences associated with long-term tobacco use. One study participant commented, “You watch your parents do it [smoke cigarettes] so you don’t really care” [ID010]. Another young woman emphasized that once the act of smoking becomes normalized, the consequences become less significant, even after being warned not to start:

Well, pretty much everybody in my family does smoke so when like, growing up it was something normal to me...Like, even though they were all telling me like, when you're older, make sure you don't smoke and stuff like that. I was just seeing it every day and like... I'm around it so it made me more...normalized like, to smoke. Like, I didn't see anything that was too wrong with it because everybody around me smoked. [ID009]

Observing their parents and other adults in their lives smoking, young women described taking up smoking in order to feel more like an adult. Several young women stated that

when they were younger, they decided to start smoking in an attempt to prove their maturity and to be treated like a grown up:

Like, for me, as a kid...smoking teenager, I felt more of an adult way. Like, I felt more grown up because I was smoking a cigarette so that could influence other kids, too, thinking like, 'Oh, I'm older, I'm more mature. I'm an adult now because I smoke cigarettes. So you can't look at me like a little kid.' [ID012]

### **Barriers and Baggage**

Barriers to making positive changes to smoking behaviour in pregnancy and postpartum were largely driven by their social networks and physical environment. Young women also were plagued by socioeconomic conditions that acted as barriers to making positive behavioural changes (by cutting down or quitting) in pregnancy that could be sustained in the postpartum period. As the young women told their stories, it also became evident that all experienced a number of hardships and challenging circumstances prior to becoming pregnant that influenced their smoking behaviour. These contextual factors accumulatively contributed to the baggage young women faced, resulting in difficulty coping and psychological distress. As such, a theme was coined "barriers and baggage." Within this theme the following subthemes emerged from the data: (1) Needing Partner's Support to Quit, (2) The Neighbourhood Effect, (3) Postponing School and Employment, (4) Self-Medicating to Cope with Adverse Events of Childhood and Adolescence, and (5) Dealing with Mental Illness.

#### **Needing Partner's Support to Quit**

Several young women discussed the ways in which their partner had a positive or negative influence on their smoking habits. Participants tended to mirror their partners' smoking behaviour, reducing or quitting when their partner also refrained from smoking

and resuming when their partner started smoking again. Several participants expressed how it would be easier to quit if their partners followed suit to remove temptations to reach for a cigarette. Other participants expressed that their smoking habits closely reflected that of their partners because it would only be “fair” if their partners abstained from smoking if they had to. For instance, one participant said, “If I’m quitting, he’s quitting, kind of thing, you know? Because it should be a fair...equal, fair thing [ID003]. Another participant stated, “Sometimes it feels unfair that they [the partner] can continue smoking and you can’t...but mainly because it’s in front of your face; you can smell it; you know the money’s still going towards it” [ID001].

Many participants explained that they could be successful in quitting smoking only if their partner was adamant about quitting as well and was ready to quit with them. For instance, one young woman said, “A lot has happened to make me want to quit but for me to feel ready, my boyfriend would need to be one hundred percent done” [ID003]. Another young woman mentioned that she and her partner often contemplated quitting smoking but found it all too easy to push back quit dates and not fully commit to quitting. She stated:

Yeah, we’ve tried a couple of times but we both, like, failed, in a way. Like, we would just set a day and then not go through with it. Or we would go through with it half a day and then just be like, ‘oh, we’ll try next week.’ [ID012]

A common theme that emerged from the data was the necessity for partner support in smoking cessation efforts to make sustainable changes to smoking habits. One young woman elaborated on why this is so important: “Well, it’s more support. You don’t really want somebody smoking around you while you’re trying to quit. I think it

could be the only way to quit is if both of us were in it together” [ID003]. Whether it is offering additional support and encouragement or providing the needed motivation, young women felt adamant that they could be successful quitting only if their partners put in the same effort to quit smoking. Several study participants had supportive partners that helped them manage withdrawal symptoms, control cravings, remove temptations, and fostered a caring and encouraging home environment conducive to quitting - even if they were smokers themselves. One young woman noted:

Well, when I did quit smoking, he quit with me. Like, while I was pregnant and stuff...he actually started [back to smoking] because I started...We kind of were just there for each other and decided it's better to support each other with quitting smoking so we kind of quit cold turkey; tried not to think about it. [ID002]

There were only a select few young women who had partners that were non-smokers.

One young woman who had a non-smoking partner reported being able to achieve cessation with few struggles:

Well, my boyfriend, like, he doesn't smoke and he never really liked the fact that I was smoking so he would like, if I told him... I want to have like, a cigarette or something he would try to like, distract me and stuff like that because he didn't want me smoking either...He knew that... if I was around people that were smoking like, I would want to smoke so he would try to... keep me away from all of that and like, if I told him like, 'No, like, I feel like I have to smoke,' he'll just try to distract me and stuff like that. [ID009]

### **The Neighbourhood Effect**

Some young women described how growing up in a rough neighborhood may have increased their likelihood of smoking. For example, one participant stated, “Well the area that I grew up in, there was like, a lot of cheap drugs and stuff so that might have influenced it [her tobacco use and later dependence]” [ID006]. Another participant said:

Growing up, when I was younger, I lived in... not such nice areas, you could say. So, I mean, there's like, twelve and thirteen year old kids smoking and everyone's

smoking and ... I just saw it all the time so it probably helped with making me want to [smoke]. [ID004]

When young women lived in neighborhoods in which the majority of residents smoked, they described being normalized to smoking and contended that they did not see harm in trying tobacco products when so many people around them smoked. This was well represented in the following statement:

I just see it everywhere and I just thought that it was like, it was just something that you do. Like, because everybody does it, it's like, something that's... okay to do; it's not that big of a deal if you do it... it's something that's normal to you, then... you think 'it's not that big of a deal if I do start' or 'if everybody's doing it then maybe I should do it, too.' [ID009]

When asked, "How, if at all, do you think that the community you grew up in might have influenced the age that you started smoking?" one young woman retorted:

Ugh because everybody smokes in [the community] pretty much and it doesn't matter what age you are... I knew kids that were smoking at age 10 and I waited to start smoking until age like 14 or 15 and only started because I had close friends that were. [ID001]

This young woman explained why she held negative views of the community in which she lived. In doing so, she highlighted some of the inequity and social disparity she regularly dealt with that contributed to her laissez faire attitude towards smoking:

Umm, other than the name of dirty [name of community]? I don't know. Maybe because most people's lives in [name of community] sucks? ...Most people in [name of community] are on OW [Ontario Works - a provincial program helping those in financial need]. And those people that aren't on OW, like even when me and [my partner] were working fulltime jobs, people on OW were still making more than us and we were working full-time. And I was on salary pay and he is a trades worker but it doesn't always mean that you are going to have money and enough to support yourself. Most people are struggling. [ID001]



### **Postponing School and Employment**

Limited schooling and employment opportunities were identified as a source of stress and a barrier to committing to positive behavioural changes, including smoking cessation for young women. Education and employment are major developmental milestones for adolescent girls and young women emerging into adulthood that became more challenging to achieve once the young women became pregnant.

Although some study participants had a difficult time in school, all acknowledged the value of pursuing further education to secure employment and promise of a better future for themselves and their children. Higher education was perceived to be associated with increased employment opportunities and better income:

I want to go to school and I want to get a career so that I don't get like, a crappy paying job; I can get a good job... And I can show my children that, you know, you can do it. [ID012]

Another young woman similarly expressed her concerns with wanting to eventually finish school but not necessarily having the financial means to do so:

I'm on Ontario Works...It's hard to definitely support me and my daughter but I want to be...be home with her for a little bit, until she's two, at least, and then try and go back to school and ... It's a lot of money... I want to go to college, eventually. Soon. It is just financially hard to do that. [ID004]

After becoming pregnant, all young women withdrew from school and had to put their plans for furthering their education on hold. Another participant stated, "I was trying to get my...my GED [General Educational Development is an Ontario High School Equivalency Certificate program]...At the high school. But I...I found out I was pregnant and I...I stopped going which is just kind of stupid" [ID013].

Nearly all study participants were unemployed making them dependent on others and welfare systems. All identified with either unemployment or job insecurity and as such, did not convey a sense of identity and autonomy that employment offers. Having a job was not only a source of income, but also was a deterrent for smoking as one participant contended: “When I was able to work, that helped a lot because you would go for 4 hours or 6 hours without a smoke and that made it a lot easier to quit because you were busy” [ID001]. Young women expressed difficulty trying to gain employment in a highly competitive job market because of their responsibilities as a young mother and lower educational attainment compared to young women their age without children. Those who obtained employment prior to pregnancy voiced great difficulty continuing to work and make money after becoming pregnant.

It’s hard for me to work right now. It’s hard for me to get hours at my work let alone to find someone else who would give me work so it’s kind of like what am I going to do for money raising a baby, you know? I can’t rely on my parents to be paying for him [her baby]... So it’s definitely stressful knowing that the government won’t help me in a situation like that where I’m not capable of working. [ID010]

Another participant explained that she was stripped of her newly acquired job position after she completed the training, once her co-workers discovered she was pregnant: “I just did training and then ...they found out I was pregnant so...they said that it’s not going to work and then they made up a bunch of other excuses” [ID003].

### **Self-Medicating to Cope with Adverse Events of Childhood and Adolescence**

Several participants described adverse childhood experiences that negatively impacted their well-being. These adverse events ranged from the death of loved ones, hostile familial relationships, and parental separation or divorce to experiences of

emotional or physical abuse. As previously mentioned, a few young women also divulged major struggles in adolescence related to being bullied and tormented by other kids in school. These experiences deflated their self-esteem and self-worth. The emotional baggage these young women carried with them had a negative effect on their smoking behaviour and attitudes towards smoking. One study participant told the series of traumatic events she struggled with throughout her childhood that caused her immense hurt. Smoking was her only way to cope. She outlined the devastating circumstances she faced that shaped the person she had become:

My dad died when I was seven and I never really, I guess, like, it started then, I guess and, I don't know, I just...I never really got any...got any, like, help or any counselling or anything. And then, she was also, like, there was domestic violence between my parents when I was really young and so yeah, I don't know...I was, like, my father was a drug addict and so, I don't know, my life was kind of chaotic when I was younger so I think I just had a lot of anger because I didn't really know how to deal with it...My mom just couldn't deal with me, basically, so she...I was, like, I don't know I was violent and she... couldn't handle me and then they kicked me out so then I went into foster care. [ID004]

Having a stressful family life often was recognized as being one of the main reasons for starting smoking as a means of coping. For instance, when asked, “Why do you think you started smoking to begin with?” one young woman replied, “All the stress and stuff and how I...I guess, like, because of how my family was. So I was smoking for like a stress reliever” [ID006]. She started smoking at age twelve because of a hostile relationship with her father tainted by physical and emotional abuse. She explained how it had an emotional toll on her: “I felt like...I felt unloved by him [her father]; just by how he was towards me. Like, because I was abused pretty much all my life...up until I was, I

think, fifteen, maybe and that's when it stopped" [ID006]. She internalized her feelings and found comfort in smoking.

For some young women, the adverse childhood events extended beyond the walls of their homes to interactions with peers that were marked by public embarrassment, victimization and harassment:

There was just a lot of bullying and stuff going on so I didn't want to be around it anymore ... It really hurt me and it ruined my self-esteem... They just judged me on how I look and my weight and it was just a really rough time. [ID007]

Most of the participants shared that they kept their experiences of abuse, violence and neglect secret and their emotions drawn inward. Without expressing their emotions or talking through the adverse life events they experienced in childhood and adolescence, they resorted to smoking as a means of coping and self-medicating:

I never said anything about it... I never told my mom or didn't tell anybody. Like, when I was being abused and stuff, I never said anything about it...I was scared. And then eventually, like, all that stuff...kept piling on top of each other and ...I couldn't take it anymore and I just snapped. [ID006]

### **Dealing with Mental Illness**

Poor mental health was associated with exposure to multiple traumatic events and stressful life situations, notably past experiences of violence, hostile or unsupportive home environments, socioeconomic disadvantage and volatile relationships. Mental health issues manifested in a number of ways, affecting mood, thought processes and smoking behaviour. One study participant thought her battle with depression influenced her smoking patterns prior to pregnancy. She was able to reduce and subsequently quit smoking during her pregnancy and described how becoming pregnant positively impacted her mood and improved her outlook on life:

I had like, depression really bad and, like, I was suicidal and I think I was... at the verge of, like, actually doing something because I was so worked up and everything and then once I found out I was pregnant, I was, like, fine. And then during my whole pregnancy, everybody was saying that I looked like I was happier than what I did, like, what I normally was. So I didn't have to take my medication or anything and I'm still off of the medication right now. [ID006]

When asked how mood could have influenced her smoking, she stated, "I guess, because some people, when they're like, depressed or like, they're really depressed and stuff, they don't think clearly" [ID006].

Mental illness was a familiar battle for several young women interviewed. One young woman relayed that instability in her home environment combined with mental health challenges was a reason she started smoking: "I sort of had a crazy life when I was a teenager...I didn't have a stable home. I didn't have, like, stability. I had depression and anxiety and... I had a lot going on so probably all of that" [ID004]. She was able to make connections between her anxiety and smoking addiction in the following passage:

I do have really bad anxiety so, I mean, it's mainly social anxiety so definitely when I'm out and you know, in public places I definitely get those cravings [for cigarettes] a lot. When I'm around a lot of people... affects it [smoking] a lot. ... I definitely think it helps with anxiety. [ID004]

After the birth of her baby, this young mother suffered from postpartum depression, with symptoms of nausea, loss of appetite, insomnia as well as loss of interest and enjoyment. When asked if she smoked more or less while struggling with postpartum depression, she replied:

Surprisingly, I smoked less just because I was so sick that I felt like...like smoking made it worse; it made me more nauseous and just feel worse in general so, yeah, I wasn't smoking a whole lot then, either... If I wasn't physically sick, like not being able to eat and stuff, I'm sure I probably would have been smoking more but it was just I didn't feel like doing anything at all. [ID004]

### **Re-conceptualizing Smoking During Pregnancy and Wanting to Quit**

After touching upon some of the hardships these young women had faced and overcome, the subsequent themes and subthemes address how the young women's smoking behaviour was impacted from the time of knowing they were pregnant to the postpartum period. It is important to gain a deeper understanding of the obstacles and challenges with which they had been burdened to view their behaviour from a non-judgmental, empathetic lens.

Although becoming pregnant was not a planned event for any participant, it was approached with poise, purpose and positivity. The young women took the time to reflect on past life choices and made the conscious decision to push forward, set their aspirations higher, and work harder to achieve them. After becoming pregnant, young women decided to do what was best for their baby and put forth great effort to quit smoking. Subthemes that materialized from this theme included: (1) Unexpected Pregnancy: Feeling Guilty and Wanting to Grow Up, (2) Precarious Plans to Quit or Cut Down, (3) Breathing for Two, (4) Being Ostracized or Choosing Isolation, and (5) Finding a Quit Smoking Buddy.

#### **Unexpected Pregnancy: Feeling Guilty and Wanting to Grow Up**

Once realizing they were pregnant, the vast majority of young women conveyed a sincere attempt to reduce or quit smoking. Several of them stated that becoming pregnant gave them a reason to commit to quitting, which was well represented in this quote: "I didn't have a reason to quit but when I got pregnant, I had a reason for doing it" [ID011]. This was a shared perspective amongst participants. As one young woman stated, "I

haven't really had any motivation to quit until I was pregnant" [ID004]. When another young woman was asked why she was able to successfully quit, she responded:

I think it's 'cause, like, I don't know I think I got, like, kind of a scare so I kind of stopped right away... Well, when I found out I was pregnant and stuff like that and I didn't want the baby to get all of it. [ID006]

Some participants felt guilty about smoking and not having time to manage their smoking behaviour prior to discovering they were pregnant. One young woman rationalized:

If I would've planned my pregnancy, I would've quit before I had my child but it didn't happen that way... I think it's silly when you're planning a child and you're a smoker or you're a drinker and you continue to do those things but when it comes to a surprise; it's not much you can do but still try to quit. [ID012]

Another participant expressed how knowledge of being pregnant made her see smoking differently: "It made me feel like I was doing something wrong. Like, it made me feel like I should not be doing this. It's harming myself and harming the baby inside and it just made me feel like I need to stop" [ID007]. Knowledge of becoming pregnant made the consequences of smoking a cigarette more real. Many young women voiced it was important for them to quit during pregnancy or in the very least, make an honest attempt at trying. One study participant reasoned:

It's not fair to your child that you're giving them so many different risks, like...that's the life they're going to have to live forever and if you're the one who gave them that problem to live with just because you decided you wanted to have a cigarette during pregnancy, it's kind of an awful feeling inside for you and for them. [ID005]

This overwhelming sense of guilt was echoed throughout the interviews. Young women knew of the detrimental effects of prenatal tobacco exposure (in a general sense) and felt guilty for putting their unborn children at risk of pregnancy-related and neonatal complications, which added to their stress. For example, one young woman said:

It made me feel bad because I could have put my son's life at jeopardy... He could have been born with many different side effects...birth side effects...I didn't want to have any risk factors towards the baby because I wanted to be fair to the baby. [ID005]

One young woman explained that she cut down smoking in pregnancy, knowing of the possible health risks, but because she was unable to quit completely, she felt overwhelmed with guilt:

I...I definitely felt guilty but, like, I...I did know the risks, of course, but I just...that's why I tried to cut down a lot and, I mean, yeah...I felt guilty doing it definitely, especially further along in the pregnancy when she's moving about and stuff. It's pretty...it makes you feel pretty guilty. [ID004]

Realizing they were going to be a parent forced the young women to try to establish independence and stability in their lives. When asked how becoming pregnant made her want to make positive changes, one study participant responded:

I was just kind of being a teenager and not getting anything done and then as soon as I got pregnant, it was kind of that realistic push that was like okay, now you need to get everything together. You need to find a steady place to live and you need to get financials in order. It was kind of... it forced me to do what I was supposed to be doing. [ID010]

Young women described identifying less as a rebellious teen and more as a young mother as they progressed further in their pregnancy. This new positive self-identity changed their outlook on life and personal values. For example, one young woman said she was able to quit smoking and make positive behavioural changes in her pregnancy "because I had something to like, actually like, live for now. So I had...like, I had a responsibility; I had to, like, grow up and become a parent" [ID006]. One participant explained how becoming pregnant changed her priorities and made her realize she didn't need smoking in her life as much as she once thought: "I don't want to be one of the moms that pushes



the stroller around the city with a cigarette in their hand” [ID009]. Another young woman described how her values and priorities changed as a result of becoming pregnant:

I have a baby to take care of, I need to prioritize where I spend my money so spending it on things that I’m going to need for the baby is a lot more important to me than going to buy a pack of cigarettes. So that helps [motivate her to stay quit]. [ID010]

She concluded by stating, “Not a lot of young girls have to balance their teenaged needs with the fact that they are having or have a baby” [ID010].

### **Precarious Plans to Quit or Cut Down**

Knowledge of the pregnancy produced a strong desire in almost all of the young women to quit smoking because they wanted to do what was best for the babies. Some young women took the opportunity to become more informed and research the side effects and possible negative outcomes of smoking in pregnancy. One young woman stated:

Well, like I also read, like a lot about like, the consequences of, like, when you're smoking while you're pregnant and stuff and, like, how the baby could have a hard time breathing, like when it's born. I don't ever want that to happen. And, like, I don't know, just like, the information that I've read about it. Like, it kind of made me, like, want to, you know, not smoke. [ID002]

Becoming pregnant was a huge motivator for making positive behavioural changes and gave the young women the determination and confidence to say goodbye to bad habits and their smoking addiction. As such, pregnancy was matched with strong emotions and a sudden insistence on quitting without delay. One participant described her pregnancy as “a wakeup call, kind of like how I really need to stop and this is something that I like, can't do anymore” [ID009]. She continued:

That was the first time I actually quit. Like, before like, I would try to slow down to maybe smoking like, maybe three cigarettes a day but I always like, I would slow down for like, maybe like, a month and then I would just pick back up and go into it. I never really fully quit before until I found out I was pregnant. [ID009]

Although the initial intent was to quit smoking cold turkey, this was not a realistic or achievable goal for some young women. As such, they reassessed their ability to drastically change their smoking behaviour and decided to set their mind to reducing their tobacco use rather than quitting entirely. A number of the young women were faced with the harsh reality that quitting smoking is not an easy task and requires a combination of mental readiness, perseverance, self-control, and support. For example, one study participant declared, “I quit for, like, three days and then two days and then a day and it’s been really hard to try and quit and when I try and quit, I seem to smoke more when I give in” [ID001]. Although most young women had precarious plans to quit smoking cold turkey during pregnancy, many resolved that cutting down would have comparable benefits. One young woman explained that the stress of trying to quit was too overwhelming. She resolved that she could lessen her smoking and still benefit the health of the baby:

I felt crappy because it’s an unborn child and you’re giving it cigarettes... It made me want to quit but then, as I tried to, it was really stressful. So I figured instead of being stressed out and, you know, harming the baby, I’ll just try to slow down. [ID012]

The young women credited their resumption of smoking to challenging life circumstances, making them feel less prepared to overcome the enormous hurdles of trying to quit smoking, a deep-rooted addiction. Caving to cravings and having just one cigarette was a vector for having more cigarettes at more frequent intervals until they

reached quantities comparable to their pre-quit date quota. One young woman commented:

I don't know, I just...I wanted to do the right thing and try to be healthy and everything for my baby to, like, affect her but that being said, then things weren't easy or good at that time so I just was kind of like, on top of being pregnant, I just really can't handle, like, trying to quit smoking now and...yeah, and so I just cut down. That's all I could really do... I really didn't want to myself. And then I just slowly went back to having one smoke and then it was two and then I was smoking a lot again, so... [ID004]

For this young woman quitting or reducing smoking in pregnancy was not a priority as other uncontrollable issues took precedence. Trying to escape an abusive relationship with her partner to protect herself and her unborn baby was a more urgent matter and smoking provided her the one outlet to cope. She commented:

Yeah, I was in a really bad, abusive relationship with my daughter's father and so, I mean, I left him when I was nine months pregnant and just the entire pregnancy was really...really bad...really hard and, I mean, I was really stressed out and then especially for the first six months after she was born, it was really hard because I was by myself so it was...it was hard. Like, quitting smoking wasn't on my mind at the time...I had enough on my plate at the time. [ID004]

### **Breathing for Two**

A number of the young women conceptualized smoking and tobacco use differently once becoming pregnant. They were very alarmed with the notion that what they took into their bodies, the baby was also receiving and recognized that they were subjecting their babies to the same harmful chemicals they were inhaling while smoking. They were accepting of the health risks associated with smoking for themselves. However, the acknowledgement that these adverse effects were transferable to the baby and had the potential to jeopardize their infants' growth and development offered significant incentive to reevaluate smoking behaviours. For instance, one young woman

stated, “I felt like it wasn’t just me smoking the cigarette. Like, that’s how I always thought, like, during the pregnancy, it’s not just me. Like, when you’d be, like, intaking stuff” [ID002]. Another young woman elucidated, “I was comfortable with knowing that whatever I took in my body would affect me but the fact that it...affected someone else made me think twice” [ID010]. Another study participant spoke specifically about how the air one breathes when pregnant is the same air one’s baby breathes:

Well, because I know that...everything that you breathe in, that’s what the baby’s getting and it’s like... if I’m smoking, I’m breathing that in, so that means she’d be getting that...I didn’t want to [smoke] because I was thinking, like, well instead of poison...instead of poisoning my body, now I’m going to be poisoning, like, a little one’s body so I didn’t...I wasn’t too keen on that idea so I stopped. [ID006]

Young women did not want their decisions to negatively impact their babies’ health and expressed great concern that the chemicals within cigarettes would transfer to their babies’ developing lungs, “poisoning” them from within the womb.

### **Being Ostracized or Choosing Isolation**

Becoming pregnant was a pivotal event that impacted the young women’s social network. It had power to make or break their previously established relationships with peer groups. Some study participants expressed that after becoming pregnancy, they were excluded and ostracized by their friends. Although this could have had negative ramifications on the young women’s support network, one young woman described how this turned out to have positive repercussions:

Ever since I got pregnant, I don’t hang around with a lot of people I used to hang around with because they stopped talking to me because I was pregnant, so... It just took a lot of negative energy and stuff away from my life and... It made me just focus more on my daughter and being pregnant and enjoying my pregnancy. [ID011]

For some young women becoming pregnant was an opportunity to turn their lives around and make positive changes. This sometimes required them to leave their immediate friend groups that were negative influences on their lives. The action of withdrawing themselves from friends was viewed with critical importance, particularly when their friends were regular substance users. By disassociating themselves from certain friends they were able to successfully control their cravings and achieve their smoking cessation goals during pregnancy. One young woman remarked:

Well, I didn't really hang out with my friends that much, the ones I normally hung around with... Because I knew it would like, tempt me into like, smoking and stuff again so I stayed away from them and I hung out my friends that didn't smoke. [ID006]

Departing from the negative influences of certain friend groups was a temporary adjustment for some young women during their pregnancy. The rekindled connections soon after the birth of the baby coincided with the resumption of smoking. One young woman consciously chose to sever ties with her friends while pregnant and decided not to reconnect with them postpartum, knowing the negative influences they would have on her behaviours. She contended that this helped her to remain smoke-free almost a year after her child's birth:

I just, I don't know, like, I'm just finding now that I have my daughter and stuff, I just keep to myself. Because most of my friends, like, they don't have kids, right? So they...like, they're still partying and like, you know, living like normal teenagers but I obviously had to grow up so I'm just not into all that anymore, I guess, so I just keep to myself. [ID009]

This young woman was able to quit smoking cold turkey during pregnancy and abstain from smoking throughout postpartum. Only two study participants in the sample were

able to successfully quit and maintain smoke-free six months to over a year postpartum.

She explained how she did this:

In the beginning like, I couldn't hang around with anybody that would smoke because I would want to... I had to... distance myself from everybody that I knew that smoked just for... the first few months just so I wouldn't [smoke] because I know if I would still ... hang around people that did smoke...I would give in... I feel like when you first start to like, try to quit, it's best to just isolate yourself from the smoking completely, that way there's no temptations. [ID009]

### **Finding a Quit Smoking Buddy**

Two study participants recruited from the same prenatal group partnered together to abstain from smoking throughout pregnancy and aided one another to continue on the smoke-free trajectory postpartum. They were the only two individuals in the study sample to successfully quit smoking during their pregnancy and remain tobacco-free throughout early parenthood. One of these young mothers described how they supported one another to put an end to their smoking habits:

I always tell her I'm proud of her, that she was able to quit smoking for her baby, like, for her daughter and stuff like that and I'm always there for her, you know?... That's my best friend, so... we're always there for each other. [ID011]

When asked if their mutual support was a reason they both were able to remain abstinent, she confirmed that their similar values and beliefs about parenting made remaining smoke-free an easier decision: "I know that she...she quit, too, just for her daughter's sake; the same reason as me, you know, so like, it's just easier that we both quit. Like, it's kind of like people that have like, the same mentality kind of thing" [ID011]. Buddying together in their cessation efforts during and after pregnancy afforded both participants long-term success in quitting.

When asked what advice the young women would offer to someone who was determined to quit smoking, one participant replied:

Perhaps somebody doing it with you, even if it's not somebody who is living with you. Somebody that you can contact when you are having a hard time and you know that they are going through the same thing as you. And, just that extra support. Support is the biggest thing. [ID001]

### **Missed Opportunities For Providing Smoking Cessation Counselling and Support**

After discovering they were pregnant, participants sought out supports and resources within the community and from frequent interactions with hospital and community care providers to help prepare them for a healthy pregnancy. This theme 'Missed Opportunities for Providing Smoking Cessation Counselling and Support' captures the young women's recollection of interactions and discussions with community and obstetrical care providers regarding smoking, their awareness of and experiences accessing smoking cessation supports and services in the community, as well as their misconceptions surrounding smoking cessation aids and options. This theme included four subthemes: (1) Discussing Smoking in Young Parent Prenatal Programs, (2) The Nature of Provider's Discussions Regarding Smoking With Young Women, (3) Awareness and Accessibility of Local Cessation Supports/Services, and (4) Misconceptions About Quit Smoking Aids and Cessation Options.

#### **Discussing Smoking in Young Parent Prenatal Programs**

Regardless of whether the young women decided to continue or quit smoking in their pregnancy, it was not uncommon for them to reach out to others and seek community supports in their excitement and preparation for becoming a mother. Almost all of the young women attended youth prenatal classes and some attended parenting

classes. A number of young women spoke of the benefits of attending youth prenatal groups to learn about pregnancy, build relationships, and feel supported by health professionals and peers in similar circumstances. They voiced that the prenatal groups were a safe and supportive environment where they could escape the stigma and harsh judgments of others. For instance, one young woman said, “Everyone’s so judgmental these days so, like, the people at, like, the prenatal groups are not really trying to put you down but rather they’re trying to get you the help that you need” [ID005]. One participant boasted of her positive experience attending prenatal group, stating, “It was like, awesome and really, really supportive and stuff and I liked that one because it was actually a prenatal group that was actually geared for young moms” [ID006]. Participants reported that the prenatal groups offered only a brief lesson on smoking and other risk behaviours in pregnancy and postpartum:

In the pre-natal program they taught me about, like, they talked about labour a lot and they talked about what can help in labour and just mostly about your pregnancy in itself. They never brought up smoking, really, when I was there...well, the classes that I went to. [ID007]

When asked if they discussed smoking in any of their prenatal group sessions, one young woman replied, “Yeah, I think they did, like once when I was there” [ID006].

When asked if she remembered anything in particular she learned, she honestly asserted, “Not really” [ID006].

### **The Nature of Provider’s Discussions Regarding Smoking With Young Women**

For the majority of the young women, their pregnancy marked a time when they were most connected to the health care system. They believed that their smoking status was not an important or recurrent topic of discussion during prenatal or postpartum



appointments. For example, when asked if smoking was regularly discussed during her prenatal visits with her doctor, one young woman replied, “My doctor never really spoke about that to me [quitting smoking], like, I think he was basically just adamant, like, if your breathing it in, she’s breathing it in, type of deal” [ID004]. Another young woman said, “I never heard my midwives ever talk about it once. They just asked if I smoked and I said, ‘Yeah,’ and there was just the, ‘Oh, okay’” [ID003]. The collective opinion was that maternity care providers addressed smoking in pregnancy only by asking about smoking status and advising they quit. For example, one young woman spoke of her visits with several obstetrical care providers as follows: “They don’t really do...they don’t really discuss much...they just tell me to try to quit or just their opinion” [ID008].

When young women reported that they quit or cut down smoking during prenatal visits, they voiced that their maternity care providers did not probe further or inquire whether they needed additional supports or resources to sustain the behaviour. One participant described her conversation with her midwife as follows: “She asked but I said I quit and she said, ‘Okay, then we don’t need to talk about it’... because I told them that I wasn’t smoking so it wasn’t really a concern to them” [ID006]. Participants reported that their maternity care providers reinforced the need to quit smoking but did not go so far as to provide pregnancy-specific self-help materials, offer referrals to cessation services or integrate follow-up about smoking into routine visits. When asked if any health care providers had offered her information on resources or referrals throughout her pregnancy, one participant replied, “My public health nurse has and I believe that’s probably it” [ID004]. Participants recollected that conversations about smoking ended

abruptly after providers gave their opinion on quitting and there was rarely any in-depth information, counselling, or referrals provided.

Young women alluded to the fact that their maternity care providers took a more passive rather than proactive approach to smoking cessation in pregnancy. As one participant stated, “No, they just kind of gave me a pamphlet, ‘Okay, you're a smoker?’ and just, yeah, just basically, did other things...didn't really talk about smoking...” [ID012]. Participants indicated that they had to be adamant about quitting smoking and actively seek out smoking cessation information from maternity care providers in order to receive needed counselling, support or resources.

One young mother compared her conversations about smoking in pregnancy with care providers in her first pregnancy and her second pregnancy:

They could have done a little more but...like, my...my first pregnancy they did a lot more not-smoking talk than this pregnancy. This pregnancy, it was just kind of, ‘Are you a smoker? Okay, well you should just cut down or quit.’ And that was basically it... The one before...they just talked about it a bit more like, ‘You should stop smoking; it's not good. You should slow down and try to quit if you can.’ But they brought it up quite a bit more than this...this pregnancy. This pregnancy it was just talked about once, handed me pamphlets and never again where as last pregnancy, every appointment I went into, he asked me how many cigarettes did I smoke and if I've cut down or if I wanted numbers to call for help quitting or anything. [ID012]

This young woman had a four year old and a two-week-old baby and felt her maternity care providers were less effective in addressing the issue and offering necessary supports in her most recent pregnancy than in her previous pregnancy.

Several young women expressed their frustration with the ways in which their health care providers discussed smoking with them throughout their pregnancies. One participant stated:

Well some people make you feel guilty like doctors and health care providers... they try and make you feel guilty instead of trying to understand...most health care providers don't smoke. I don't know why; because they know it's so bad or it's because of other reasons but most of them don't smoke and they don't seem to understand. They just say, 'Well, you need to quit.' And that's pretty much all they give you...the doctors, they just...they tell you what needs to be done; they don't really help you get on the right track. [ID001]

According to participants, maternity care providers did not ask about smoking status in follow up postnatal visits. One postpartum participant said, "They didn't really talk about it so...nobody has asked me if I started smoking again or anything" [ID013]. Nearly all the young women interviewed who reduced or quit smoking in pregnancy resumed shortly after the birth of their babies. Their smoking status was never brought into question or re-addressed postnatally.

### **Awareness and Accessibility of Local Cessation Supports/Services**

Nearly all study participants were unaware of locally available cessation supports and services. When asked if they knew of any quit smoking services or programs to help reduce or quit, the normative response was "no". As one participant responded:

See when I quit smoking like, I didn't really know that there was places you can go to quit. So like, I thought that was just like, you know, you can chew like, the nicotine gum and stuff like that. I wasn't really like, aware that there was classes and programs that you can go to like, to help you quit smoking. [ID009]

Another participant contended, "I really don't hear anything about helping [quit], you know, other than the helpline [Smokers' Helpline]. I haven't heard of any programs or nothing" [ID011]. Only one participant was aware of some resources for helping her quit:

I have a couple of pamphlets, I just forget the names. There is one big yellow book that is supposed to help guide you through quitting during pregnancy because it is harder than when you are not pregnant. And then there is a program through the pharmacy. I know that and I believe Shoppers Drug Mart has a program as well. [ID001]

When participants were asked about accessibility of services, they acknowledged that lack of transportation was a key issue and barrier to attending cessation services:

For me it's not too bad because I am centrally located right now but soon I will be moving to the north end and that will make it harder for me to make it to the places that are down town which are pretty much every place ... that has the quit smoking spot [a smoking cessation service] - are all down town [name of community], not the north end or south end. [ID001]

### **Misconceptions About Quit Smoking Aids and Cessation Options**

Another finding was that the young women in this study were unaware of available smoking cessation options and cessation aids. As one young woman said, “I know there's some people nowadays, they don't know any...what's it called...like, different ways of doing it [quitting] other than actually smoking” [ID006]. Those that were aware of the option of using quit smoking aids were fearful of the side-effects and concerned that they would be more harmful than smoking cigarettes. This statement demonstrates some of the commonly held misconceptions about smoking cessation aids:

I was told that I could go talk to a pharmacist and that they may have quit smoking aids and I am afraid to even do that because I don't want to be on a nicotine patch or anything like that because I am still intaking it, I am just not breathing it in... and they are quite expensive products sometimes more than the smokes themselves... The patches or the gum or the inhalers, whatever they are going to try to offer me... all of the nicotine stuff. I feel like it can cause more problems than me smoking personally...but I know I am probably wrong... I am just concerned. [ID001]

Participants also were skeptical about smoking cessation programs and services. They seemed to think that smoking cessation programs and quit smoking clinics try to force people to quit:

I just want people to understand that you can't force somebody to quit, they need to...they need to want to...All you can do is give them support and give them your

opinion and show them why it's a good idea to quit and not do anything that makes it seem like they have to. [ID007]

### **Smoking: A Crutch and Key Coping Mechanism**

Some young women took to smoking originally to gain some sense of control; smoking was one thing they could control in their chaotic lives. The positive effects they associated with the act of smoking offered them comfort that they learned to crave. Once the young women were introduced to cigarettes and began smoking routinely, it became a crutch for them. They could not let go of these crutches because it was their only way of coping and handling stress. Most young women explained how current life stressors thwarted their efforts to quit during or after pregnancy. Within this theme the following subthemes were identified: (1) Wanting Control: Smoking is a Regrettable Form of Control; (2) Stress Relief; and (3). Life Stressors Taking Precedence Over Efforts to Quit

#### **Wanting Control: Smoking is a Regrettable Form of Control**

Some young women described feeling as though they had no control of the situations and circumstances they faced in their lives and explained that smoking was the one thing that they could control. This notion was well illustrated in the following quotation:

Because you're a teenager and the only form of control I had was to smoke. And then as I get older, I guess the feeling of being out of control. Like, I feel like I have no control over anything and I am stressed out to that point – I'll have a smoke because that is something that I have chosen – something I am controlling. But in the end, I am not controlling it, the cravings are. [ID001]

Although smoking initially addressed the longing for a sense of control, this rapidly had the reverse effect as addiction and dependence replaced any perception of control. Several study participants confided that they wished they had never took to smoking and regretted

becoming addicted, reasoning that they were very young at the time they first started smoking. One young woman divulged, “I just wanted to try it; I was young and stupid” [ID008] and other stated “Looking back on when I started smoking? It was stupid. I was young and immature.” [ID012]

### **Stress Relief**

All young women reported that smoking cigarettes helped to relieve their feelings of stress and, in some cases, was their only means of coping. Smoking was considered a short break from reality and the sole stress reliever. For instance, one young woman contended, “So whenever I got a moment to myself I’d just smoke a cigarette and relax” [ID002]. Another said, “It’s just a stress reliever; like, it’s the one thing I have. Like, for a couple of minutes, I can go have a smoke and relax myself” [ID004]. Many of the young women looked forward to brief lapses in the day when they could have some time to themselves and have a smoke. This was likened to a reward or a means of treating themselves after a long day or stressful event. For example, one young woman stated, “My mind is always set on, like, after I eat a meal, have a cigarette; after I do this, have a cigarette. It’s kind of like my quiet time, in a way, too, where I’m not bothered” [ID012].

Another study participant explained:

Like, being able to sit outside and have a cigarette becomes a calming thing to you even if it isn’t really calming. I guess, your brain kind of...your brain kind of tells you that’s your calm down time or that’s your time to yourself and that becomes your way to de-stress. [ID010]

Some young women felt smoking had a therapeutic effect on them, not only aiding in stress relief and relaxation, but also in regulating their mood: “I guess, like, it was just

like, a stress reliever. Like, I would smoke and it would just make me like, relax and calm down and just, you know, put me in a better mood, I guess” [ID009].

One young woman felt that she likely started back smoking again once her baby was born because she could not find another substitute to relieve her stress. She craved the feeling of relaxation which was produced when smoking: “When you're stressed, it just gives you that five minutes to calm yourself down and I think that's why I started again” [ID013].

### **Life Stressors Taking Precedence Over Efforts to Quit**

The young women described stresses and challenges in their day-to-day lives, which in some cases took precedence over their efforts to reduce or quit smoking. The most commonly reported cause of stress was “money” or financial concerns. Faced with challenging socioeconomic circumstances, study participants felt overwhelmed. They recognized that everything costs money and that necessary expenditures for daily living accumulated quickly: “There’s always, like more stuff that, like, I have to buy but I can’t; I don’t have the money. And I try to make sure that I keep money for my baby if she needs something. And that’s really hard” [ID006]. This concern of not having enough money to supply all of their new baby and growing family’s needs while paying the bills and budgeting money appropriately was echoed by all young women. One study participant remarked:

There’s always money; money’s always stressful. There’s not enough money in the world...now I have to buy so many things for somebody...somebody else [referring to her baby] that I have to support now that I need to manage my money rather than to just go and blow it all... I have to make a budget, I have to make...make sure I know how much I need for formula and how much I need for,

like, new bottles or new soothers or new socks and new outfits ...and just things like that. [ID007]

Smoking also was identified as an expensive addiction, which exacerbated their financial concerns. Some women remarked that quitting smoking would reduce their financial burden and this was a motivator for abstaining from smoking. As one participant stated, “There’s sometimes where I feel like I would want one [a cigarette] but then I’m just, like, well I don’t want to get back into that and I don’t want to waste my money on a pack of smokes” [ID007].

For some young women, stresses also were related to child welfare or litigation. A few young women spoke of the immense stress they felt postpartum while dealing with Children’s Aid Society (CAS), parenting alone or working through a legal custody battle with their baby’s father. One study participant pronounced that she was able to quit smoking during her first pregnancy but was able to only reduce her smoking in her second pregnancy due to the stressful events that were ongoing throughout the antenatal period. She explained, “With my first daughter I didn’t smoke at all while I was pregnant with her ... The second time I tried to stop a little bit but... I was going through a lot of stress so I just didn’t end up quitting” [ID003]. When asked what stresses contributed to her not being as successful quitting in her second pregnancy as in her first, she replied, “Financial, arguments, stress with my children because my oldest daughter, her dad...her other half is, like, really, I don't know, they’ve tried taking her from me numerous times and there’s stress” [ID003]. Because she was struggling with a custody battle for her first child during her second pregnancy, she was unable to put in the effort needed to successfully quit smoking again.



Another young woman explained that she could not quit smoking during or after pregnancy because she was dependent on it and used cigarettes as a buffer throughout the day. When one young woman was asked the reason she continued to smoke, her response was similar to the previously mentioned excerpt from a participant interview:

Stress; sometimes when I'm bored...And sometimes just an urge; when I want one I just take it because I've been smoking up for so long, right, it becomes a...a habit...just a bad habit...I have a lot going on right now but I've been trying to find other things to do to not always smoke... Right now, I have Children's Aid involved. So they're pretty stressful... I don't want to talk about that whole thing. [ID008]

Although this young woman did not wish to delve any deeper into her struggles dealing with CAS, it was evident that they caused her a great deal of emotional stress. For another young woman quitting or reducing smoking in pregnancy was not a priority as other uncontrollable issues took precedence. Trying to escape an abusive relationship with her partner to protect herself and her unborn baby was a more urgent matter and smoking provided her the one outlet to cope. She expanded:

Yeah, I was in a really bad, abusive relationship with my daughter's father and so, I mean, I left him when I was nine months pregnant and just the entire pregnancy was really...really bad...really hard and, I mean, I was really stressed out and then especially for the first six months after she was born, it was really hard because I was by myself so it was...it was hard. Like, quitting smoking wasn't on my mind at the time...I had enough on my plate at the time. [ID004]

Participants were overwhelmed with additional stresses adjusting to life after the birth of their babies and discussed their challenges transitioning to motherhood. All young women described how parenting was much harder than they had anticipated. One young woman said:

I think it's just exhaustion. I don't really get any time to myself. I'm with my daughter twenty-four/seven so it's...it's tiring, to say the least and I think that's just stressful, not getting any time for yourself. [ID004]

From these excerpts it is evident that these young women had many stressors in their lives and challenges during and after their babies were born, which were compounded when they had not developed healthy strategies for coping to replace smoking. The stressors the young women faced in pregnancy and postpartum hindered cessation efforts and prevented long-term smoking abstinence.

### **The Stumbling Block: After the Birth of the Baby**

The birth of their infants was a stumbling block for study participants. This event caused them to re-evaluate the positive changes they had made to their smoking behaviours as they tried to adjust to new demands, pressures, and responsibilities of parenthood. The sub-themes that unfolded in this theme included: (1) The Breastfeeding Debate, (2) Re-thinking Consequences After Baby, and (3) Conceding to Cravings and Returning to Old Habits.

### **The Breastfeeding Debate**

Young women's smoking behaviours were strongly influenced by their decisions to breastfeed or formula feed their babies. For young women who chose to breastfeed, their smoking cessation efforts continued until they stopped breastfeeding because of concerns for exposing their newborn to third-hand smoke. As one participant explained, "I'm breastfeeding so if I was to go outside and smoke a cigarette and then come inside and then feed her and then she'd get like, the smell and the smoke like, off of my clothing" [ID009]. The majority of participants expressed that they were uncertain if or

how smoking would impact their ability to breastfeed or the effects of smoking on a breastfeeding infant. Only one young woman reported being aware and concerned about the transfer of nicotine through breast milk to their baby. She explained her rationale for remaining smoke-free and postponing relapse until after she was no longer breastfeeding:

Because you don't want it going into the baby through the breast milk... You...you don't really have time to go for a smoke unless you're smoking while you're breastfeeding with the baby on your breast and that's kind of gross so...so that's why I can't see many people doing that. [ID003]

There were several young women who slowly reverted back to pre-conception smoking patterns once they were no longer breastfeeding because they felt it safe and acceptable to start smoking again. All but two study participants resumed smoking casually or occasionally postpartum and gradually worked up to pre-conception levels of cigarette intake. When one young mother was asked how long she was able to stay quit postpartum, she replied, “About a month and a half after because I was breastfeeding for the first couple of weeks and so I didn't want that to...I'm not sure if it would interfere or not but I didn't want it to at all” [ID005]. When asked the same question, another young mother spoke of her return to smoking because her diminishing breast milk supply was causing her overwhelming stress:

I was breastfeeding so I didn't have time to go out for a cigarette so that plays a good role in quitting... Like, when I was in the hospital having [name of baby], like I wasn't a smoker at that point really, like, but afterwards, like, when my breastfeeding started to go downhill and my midwife was, like, ‘Oh, you're starving her,’ then I started smoking again because I got stressed out again. So I can see why, like, if moms aren't breastfeeding, that they would start smoking again...if it was easier to breastfeed, people wouldn't start smoking up as easy afterwards. [ID003]

Although some young women needed to supplement with formula, all attempted breastfeeding their baby but one. For this young woman formula feeding was the more appealing option because it allotted her more freedom in her lifestyle choices, which she explained in the quotation:

No, formula...I had thought of it [breastfeeding] but I didn't want to because I was uncomfortable with it and because I was a smoker and I wanted to be able to drink...She was formula fed because she was right around my nineteenth birthday, so two months after, I wanted to be able to drink and I didn't agree with drinking and breastfeeding because I didn't know how to do that... You have to watch what you intake and stuff so, to me, I didn't want to do that. And I...I wanted somebody else to be able to feed [her baby] instead of having it just me all the time, too. [ID012]

### **Re-thinking Consequences After Baby**

Most young women did not perceive there to be the same consequences of smoking for the infant as they did when they were pregnant. One young mother elaborated:

Well, the whole reason why I quit smoking was like, when I'm pregnant 'cause I like, know it's not healthy for my child and so, like, after when I'm like, no longer pregnant and stuff, it's just going...it's just me taking in that nicotine and tar and whatever so... [ID002]

Another young mother offered similar rationale for starting up smoking again postnatally: “Afterwards when I decided to go buy a pack of smokes, it was kind of like, I guess I can now; I'm not pregnant anymore and now I can. That's kind of how I feel” [ID013]. Young women weighed the pros and cons of remaining abstinent after their babies were born. For study participants, the benefits of smoking often outweighed the negative health consequences, which triggered their relapse. One young woman confirmed that the notion of there being fewer harms related to smoking after pregnancy was a common ideology

held by many young women: “A lot of people feel like after they are like, they have their child they feel like, you know... smoking can’t really affect my child anymore which isn’t really true, right” [ID009]?

### **Conceding to Cravings and Returning to Old Habits**

The majority of young women who reduced or quit smoking in pregnancy regretfully relapsed again postpartum. For some, quitting smoking during pregnancy was a temporary lifestyle change and the resumption of smoking postpartum was a highly anticipated event:

The longest I’ve been without a cigarette? Yeah, about two to three days. Every time I was at the hospital with my newborn and I had to stay there for two or three days, I didn’t [smoke]...wasn’t able to go outside or anything so...for me that’s...two to three days is the longest I’ve gone without a cigarette. But I still look forward to it when I come out. [ID012]

Even for young women who quit smoking during pregnancy, the craving to smoke continued. Most reported resuming smoking regularly shortly after birth, within the first few months. For example, one participant said, “when she was a couple of months old, I was smoking again fulltime” [ID003] and another resounded, “I started back up when he was two months old” [ID013]. Many felt afflicted after reverting back to smoking postpartum. They were oftentimes upset with themselves, disappointed that they let their cravings get the better of them, and annoyed that they craved nicotine after going so long without having a cigarette: “Even like when I started again, I was like, really embarrassed and I didn’t want to tell anybody because I was so proud of myself that I did quit so well when I was pregnant” [ID013]. Another woman who reverted back to smoking postpartum alluded to being addicted to cigarettes:

I definitely wish I never had started smoking in the first place, but I...I don't know, I think the thing is, I feel like I just won't be able to [quit] so I don't really bother to try. I just feel like, oh, you know, I'll go a week [without smoking] and then just start again. But, I think it's [quitting] definitely a good thing...I would like to quit eventually. [ID004]

As previously mentioned, only two young women were capable of remaining abstinent from smoking for a year to two years since their decision to quit smoking once becoming pregnant. One described her motivation for ending her smoking addiction as follows:

From the day I found out I was pregnant until...like, I don't even smoke now, so over two years... Yeah, it was kind of hard at first but I was doing it for my baby so that was my motivation... I just don't want to go back to doing it. I think it's just a dirty habit so when I see them [cigarettes] it doesn't really bother me anymore. [ID011]

Knowing that they were successful in quitting for so long boosted the confidence of these two young women and provided them with the inner strength and motivation to persevere in their endeavors to stay quit. One of these young woman still experienced cravings:

I would wake up and be like, okay well... I can't smoke any cigarettes today and I just... just keep reminding myself that like, I can't smoke anymore. So like, it was difficult because I was so used to it...I stopped for so long after I had her, like I wouldn't want to go back to smoking because if I can stop for so long, then there's no reason to go back but sometimes like, I still like, get the cravings and stuff to smoke but... there's really no reason to go back to smoking. [ID009]

### **Wanting to Protect Their Children And Prevent Them From Smoking**

This theme describes the young women's new outlook on life after their babies were born and how every action and thought related to smoking became about their children. Young women desperately wanted to protect their children from cigarette smoke and prevent them from taking up smoking. This theme has three subthemes: (1) Future

Plans for Quitting so Children Don't Smoke, (2) Reducing Children's Exposure, and (3) Thoughts on a Smoke-Free Ontario.

### **Future Plans for Quitting So Children Don't Smoke**

After having their babies and returning to old habits, the young women did not foresee quitting smoking to be in their immediate future. They believed quitting would be a possibility down the road:

I just have the attitude, like, 'Whoa, I can quit whenever I want so when I feel like I don't need to smoke anymore, I'll quit in, like, five years.' But, that being said, I'm sure that the longer you smoke, the harder it is when you try to stop so... [ID004]

As most young women were successful with quitting or drastically cutting down smoking during their pregnancies, they felt they would be capable of quitting in the future without a great deal of effort. As one young woman commented:

I don't know, like, I probably could, like, quit smoking. The thought of it doesn't really bother me, like, I probably could if I really wanted to but at this point I don't really have a desire to quit smoking...I know I can quit smoking if I really wanted to. [ID002]

Although postpartum relapse was common among almost all study participants, all young women were adamant that they did not want their children to become smokers.

I was always raised around my mom smoking inside. Me, I've never personally smoked inside any of my places because I don't like my furniture stinking. And I remember my mom partying when I was younger and she'd always be smoking and stuff like that so I just...I think that that's maybe why...that's why I don't really show my children... Because I don't want them to smoke...I would like, take smokes from my mom and stuff and so that's why I'm trying to quit smoking because I don't want my kids to do that. [ID003]

Many mothers talked about wanting to role model positive health behaviours for their children. One young mother explained how she planned on talking to her daughter

about the harmful effects of smoking and to eventually quit so that she would be able to lead by example for her children and help prevent them from starting:

My thoughts now are trying to quit... Because, growing up, my mom and my brother were smokers and I figure if I'm not a smoker, my children won't want to smoke... In a sense, like, because I watched my mother and my brother, I wanted to be like them so if my daughter and my son don't see me smoking all the time, they kind of won't have that thought. So maybe I'll help prevent them from smoking. [ID012]

### **Reducing Children's Exposure**

Young women described the extensive steps they took to reduce their children's exposure to second-hand and third-hand smoke. One study participant said, "I smoke outside all the time and wash my hands when I come in and I would take off the stuff that I'm wearing when I was smoking to, hopefully, prevent it. It probably doesn't prevent it a hundred percent but prevent it for the most part" [ID005]. There were also some pronounced misconceptions about second-hand and third-hand smoke. For example, some young mothers believed that if they smoked outside their children were not at any risk of tobacco smoke exposure. This is evidenced in the statement: "There's no risk of her being exposed to it if we're outside and I'm smoking" [ID004].

Although young women did not express knowledge of third-hand smoke, many described hand hygiene and other rituals surrounding smoking they practiced that reduced their children's exposure to tobacco residue and toxins. Many young women elaborated on the importance of washing their hands and changing their clothes to reduce their children's exposure to smoke. One study participant stated, "I always wash my hands because I'm paranoid or I'll always have gum or mouthwash because I don't want any cigarette smoke on them" [ID012]. These practices were all considered protective



measures that the young women religiously adhered to in an attempt to reduce their children's smoke exposure and often were most extensive when they were first home with their newborns. A number of these practices changed and became less stringent as their children got older:

I don't sanitize my hands as much as I used to. Like, I used to sanitize them right after, like, I'd be coming in from a smoke, before I'd pick up the baby... When they were first born, like, when they were little babies, for like, the first couple of months we actually went the whole nine yards with the hand sanitizer and the dish soap; washing our hands, changing our shirts. [ID002]

The young women also explained that they would try to protect their children from tobacco smoke exposure by not bringing them to households where smoking inside the home was permitted. One young mother commented:

There's some places that I don't really take my kids because they're okay with smoking around their kids, like, inside the house... Even if, like, they decide to put a fan in the window or open up the window an hour before...I still won't take them over there because, like, the smell, that could be in the fabric. [ID002]

This young women, although unknowingly, connected smoking in the home to third-hand smoke. All young women felt strongly about keeping their homes smoke-free to try to protect their children from tobacco smoke exposure.

### **Thoughts on a Smoke-Free Ontario**

The young women in this study were asked to share their views of the Smoke-Free Ontario Act to gain their perspectives of the provincial policies and legislation regarding tobacco control. They provided their opinion on legislation making it illegal to smoke on and around children's playgrounds and publicly owned sport fields and surfaces. One young woman reasoned it was a good thing "so there's not cigarette butts all over the playground and because kids don't need to be around those things" [ID008]. One

mentioned that this legislation would make her less tempted to smoke at outdoor public places such as the soccer fields she takes her children to because “there’s not going to be any smoking there so there would be more places for me to go with my children and there’s no smoking allowed so it’s really good” [ID003]. Another young woman elaborated on this idea and shared a different perspective on why it is important to keep parks and playgrounds smoke-free:

I think it’s a good idea. Because ... kind of what we were talking about, being around it makes me want to, right? With everybody smoking, it makes me want to do it. Especially when you're younger, you want to be like the bigger kids, right?... If you’re not allowed to smoke when you're around areas for kids and that sort of thing, it might help a little bit. Then maybe they [children and youth] won’t really want to [start smoking]. They won’t maybe if they're not seeing it as often. [ID013]

One participant believed this law to be somewhat helpful but that it needs to be better enforced to be more effective at altering individuals’ smoking behaviour:

They make you have to do a little more exercise to light a smoke - because if people want to smoke they are still going to. And some people won’t listen to the laws, they will just wait for the cops to go away, if they are there or watch out just in case. [ID001]

Study participants also were asked their views about legislation making it illegal to smoke in motor vehicles with children under 16 years of age present. One young woman explained why this was a beneficial law by sharing one of her childhood experiences:

That’s a good idea because I always remember when I was little and my parents smoking in the car and it just reeked...it just sucked, being stuck in the backseat and the windows rolled down but the smoke blowing down at your face anyway. [ID013]

Other study participants shared similar views, reciting why smoking within the confined space of the car is rightfully illegal. They explained how the effects of second-hand smoke are magnified in tighter, more enclosed spaces and expressed strong opinions about where it is unsuitable to smoke. One young woman likened smoking in a vehicle with children inside to smoking in an elevator [ID012]. Another stated:

I think that one's good, too, because you're in such an enclosed space and if you are smoking...like you're child's getting like so much or, all of that smoke; like, it's all... floating around in your little car so it's just like, it's bad for them.  
[ID009]

When asked why they considered Smoke-Free Ontario legislation to be just and valuable at local and provincial levels, one young woman thoughtfully answered: “Because for the same reason that I quit smoking is because children don't have a choice. It does have negative health effects on them ...it's okay to do it to yourself but you can't do it around kids” [ID010]. Another participant commented:

If I could make up a law, it would be don't smoke in your house when you have children but I think that's kind of hard to do if it's your house...I think it's terrible, people that smoke in their homes when they have children, especially really small ones. [ID004]

Finally, study participants were asked to comment on whether there should be laws that enforce smoking cessation education or attendance at quit smoking services for pregnant or parenting women to reduce smoking in pregnancy and relapse postpartum. One young woman made the suggestion that it could be beneficial to have a public health nurse mandatorily assigned to tobacco-using women to visit them regularly. She expanded that this public health nurse could assist them in learning new coping strategies, accessing community resources, aligning supports and following up with them

to ensure they are slowly but surely taking steps towards making positive behavioural changes with regards to their smoking behaviour:

I know a lot of younger moms have like, nurses... I think like, those things should be mandatory and then like, dealing with a public health nurse would kind of... help you... Any time I need anything...if I need any information on anything, I just message her [the public health nurse] and she brings it for the next visit. And like... because she gets...she gets to know us, right, and she works with us throughout our pregnancy and after the baby is born... I think, if they made it mandatory for younger moms to have someone like her...then they would get to know her and then the people that are kind of like, smoking and drinking and doing drugs and all that sort of stuff, the public health nurse could take that...that information and like, get them into a program [ID013].

Another study participant believed that more emphasis should be placed on empowering women with education and instilling strategies to enhance awareness of the adverse effects of smoking in pregnancy and postpartum. She also mentioned that it would not be ethical to impose legal barriers to hinder women's smoking during pregnancy because if women wish to continue smoking, that is their own prerogative.

I think a law should be like...making pregnant people and people with children...make them more aware of like, how serious the risks are but I don't think they should make it illegal because people still have free will, right? [ID009]

### **Reflections and Recommendations for Support**

The closing question in the interviews asked young women to reflect on their interactions with maternity care providers to offer advice and suggestions for ways in which they could better support pregnant and parenting young women in their efforts to reduce or quit smoking. Young women also made suggestions for how individuals in their support networks could assist in their cessation efforts. Within this theme, five subthemes emerged: (1) Wanting More Meaningful Interactions and Regular Discussions (2) What Young Women Want: Comprehensive Support in a Group Setting, (3) Offering

Incentives, (4) Spreading Awareness and Improving Accessibility, and (5) A Plea for Partners, Friends and Family.

### **Wanting More Meaningful Interactions and Regular Discussions**

The participants reiterated numerous times that health care providers should adopt a gentler approach to discussing smoking in pregnancy. Rather than judging and reprimanding the young women for having difficulty reducing or quitting smoking, and making them feel guilty about their decisions, they commented that maternity care providers should be supportive and encouraging to make smoking cessation an easier option. As one young woman remarked:

They need to take a gentler approach, not make you feel so guilty...just maybe not make you feel so, like, such a horrible person about it... I think maybe instead of focusing on all the negatives, maybe go over, like, the benefits for you and especially, you know, your child because...because I think that's the biggest incentive moms have is to do it for their little ones... Like I said, just maybe a more gentler approach and focus on the positives of quitting as opposed to how much negative you're doing. [ID004]

Another study participant similarly emphasized that providers need to change their angle of approach. She suggested providers convey:

A bit of understanding because the ones that have never smoked that just say well quitting is what you need to do - that's not really helpful. They need to understand that it's not easy and that I may need support along the way... to give me coping methods and people that actually try to help and not just try to tell you what to do...It does work to feel a little bit guilty. But not to feel like you are a pariah - like you are diseased just because you're smoking. [ID001]

One study participant identified the need for obstetrical providers to take the time to discuss all the reasons for quitting for themselves and their babies and to provide complete, comprehensive health teaching regarding the options for quitting:

A lot of girls need more coaxing so I definitely think that when the doctors are very blunt about it, it's not really going to get through to them; they're not going to want to do it if the doctor's just being very straight up. They'll want to have a discussion with them about it. [ID010]

It also was suggested that rather than reprimand and reinforce the need to quit smoking, care providers should offer positive reinforcement and celebrate small, incremental changes as well as larger, positive behavioural changes to help young women feel motivated to continue to cut down or quit smoking in pregnancy. One study participant stated:

I think just encouraging them. Like, giving a lot of positive feedback, it's for sure validating that...the good choices that they're making. I know a lot of moms that quit don't hear enough of how good of a job that they're doing. And it's...it's nice to have positive feedback. It encourages you to keep going. [ID010]

The young women in this study expressed that they wanted to have a discussion with their prenatal health care providers about smoking in pregnancy. They wanted to be educated on the side effects of smoking, the possibility of adverse outcomes, and pregnancy-related complications. One young woman highlighted the necessity for health care providers to “[talk] about it more, definitely, because nobody, like, if I wasn't interested about it, they weren't talking about it. Like, even just a little bit... like, ten minutes in each visit; if they're a smoker, talk about it” [ID003]. Similarly, another young woman urged the need for regular discussions about smoking in each prenatal visit:

I think like, their health care providers like, their OBs and stuff should like, educate [pregnant women] every time they go in for a doctor's appointment like...like, give them the information and give them all the pamphlets and discuss how bad like, smoking is and then give that...them the choice...when they realize how bad smoking is encourage them to go to the classes and do the stuff to quit but, again, like, it's whether they want to or not. [ID009]

Study participants also wanted to know about their options for quitting smoking, quit smoking aids, and cessation programs and services available locally. The young women believed it important that their maternity care providers regularly discussed their smoking habits and followed up on whether their smoking behaviours had changed. One young woman noted:

Maybe just like, talk about it more and like bring it up more often. Like, make sure you're still like, on track if you're quitting. Like, bring it up more at your appointments and offer services or anything that they could help with. [ID013]

Participants emphasized the need for regular discussions on smoking status because not all young women who said they quit during their prenatal visit were able to stay quit throughout their pregnancy or relapsed postpartum. As such, they believed that regularly revisiting smoking habits in pregnancy and postpartum is necessary to ensure the young women are getting the help they need, when they need it. For instance, one young woman stated, “You don’t really like, hear about it postpartum; you usually just hear, like, you know, quit while you're pregnant but...yeah, I...I imagine that possibly could help” [ID004].

### **What Young Women Want: Comprehensive Support in a Group Setting**

When asked what supports or services would be helpful in their efforts to reduce or quit smoking, study participants recommended having a quit smoking community support group offered during pregnancy and the postpartum period to facilitate positive behavioural changes. When asked what types of cessation supports or services would be most helpful, one study participant responded, “Group support because I think if they're doing it with other people that are trying to do it as well, it’s a lot easier if you don’t feel

like you're alone trying to do it” [ID004]. Group cessation was considered essential because young women felt that meeting with women in similar circumstances and struggles in a safe, supportive environment would help to eliminate the stigma around smoking and fear of judgment. One young woman commented:

I guess more of a community group, so that people could come and talk and be honest with each other and not be judged and have people they can connect with. Because sometimes when you have a counsellor, you may not like the one counsellor but say if you have a circle of people in and around your age or even people who are older who have been through it before, you can talk openly with them and not be afraid. [ID001]

Several other study participants resounded the need for a community support group that met regularly. One participant wanted “A support group with people my age trying to quit or anybody trying to quit...Like, talking together and...yeah, meeting weekly; finding different things to do that don’t involve going around people who smoke” [ID003]. The young women thought it would be beneficial to have a community group support not just in pregnancy but postpartum as well: “Instead of just while they're pregnant, after as well, because I know a lot of people that have just smoked after their pregnancies instead of during” [ID003].

Some young women described what they envisioned an ideal quit smoking program would look like. Several described a group support program that could be formatted similar to Alcoholics Anonymous (AA) “where people who are trying to quit can like sit down and all talk to each other and help each other and give their support” [ID011]. One young woman expressed that such a program should focus on positive experiences of quitting smoking:



I'd kind of set it up like an Alcoholics Anonymous group, you know, moms that quit smoking and they come in and talk about their experiences quitting and what positive effects it's had on their life, what struggles they've had and they can all kind of share their experience and learn from each other...I don't know, just maybe sharing positive stories and articles about moms that have quit and what they share about their experience quitting and how it's had a positive impact on their child's life. [ID010]

Another study participant commented that hearing others' stories could provide useful advice and insight regarding smoking cessation strategies:

Have a bunch of like, people come in that have like, gotten pregnant and quit smoking and stuff and come in and talk to them about how they did it and give them like, different examples of how other people did it and try to give them like, tips and skills and stuff that can help them quit. If they like, smoke because they're stressed like, other things that they can do when they're stressed so they don't have to smoke and just stuff like that...because I guess like, they can share their stories and they can see they're not alone and not the only one that struggles with this. [ID009]

When asked who the ideal person or people to get advice from would be, they replied that they wanted assistance and guidance from women who have been in similar circumstances, and who had successfully quit smoking and remained abstinent. One young woman recommended having "somebody there that maybe has conquered it so they can show you that it's possible" [ID012].

The young women that advised of the need for a support program offered in a group setting were asked what types of things they would like to learn and the activities they thought would be helpful. One young woman stated she would like to learn "the effects [of smoking] and...like, everything for when you're pregnant and breastfeeding, too. Because I don't know anything about the effects breastfeeding and smoking" [ID013]. Another study participant described what activities and demonstrations would

have a powerful influence on young women and help to make an effective quit smoking group program:

Maybe, like, videos of past people who smoked and they had, like...like, people come in and they talk about their experiences who have lost something; lost a loved one from smoking or had...I'm not sure what it's called...but that hole in their throat from smoking or lung cancer. Like, people who have had past experiences where it's gone wrong with smoking so people know, like, it does happen. Like, these are things that will happen if you don't quit. [ID005]

Some study participants explained how the focus of a group program should be on learning "life skills and ...offer techniques and stuff that you could do to help [you] quit smoking and...Really get into all the risks and all the stuff that can happen...to you and your child because of smoking" [ID009]. Others argued that cessation support should place emphasis on learning the non-pharmacological and pharmacological avenues for trying to quit:

Like, there's like, nicotine patches and stuff like that. I know there's like, people who know nothing about that stuff so they can have like, a program that tells them about it and they can have, like, free samples so they can actually try it...to see if it works. And if it does then they can, like, go out and buy it and stuff like that and then it would be easier. Because I know of like, some...like the nicotine patch...then you're not smoking. Like, you're still getting it into your system but you're not actually doing it in front of [the children]. [ID006]

The issue of gaining weight while making an effort to quit smoking during pregnancy or postpartum was brought up several times. Several study participants discussed the need for a more holistic approach to smoking cessation, incorporating exercise and healthy coping strategies:

Maybe have, like, workout sessions every once in a while during the weekly groups to help stay fit while quitting smoking because you do gain weight and that's also another reason why people don't want to quit is probably because they gain weight afterwards because you're eating so much. [ID003]

## **Offering Incentives**

Participants felt strongly that offering incentives was important for encouraging participation and on-going engagement in support groups. For example, one participant said:

Money incentives would be the best for somebody to quit. People would go...people would want to get together if...it would be a motive, for sure. If the government can put the cigarettes out there for people to buy they can help people quit by putting money out there, too. I don't know, like, pretty silly that they're even on the market. [ID003]

Most young women recommended incentives similar to those they received in their pregnant youth support groups. Some programs that were identified were Food for Thought, the Canadian Prenatal Nutrition Program (CPNP) and the Teen Prenatal Supper Club. One participant elaborated on how much she appreciated receiving incentives for attending the Food for Thought program:

They are once a week. Every Thursday and you don't have to show up at the very beginning... you can show up late if you want, you can stop in for fifteen minutes. They offer you a bag of food a week. They give you a milk bag and a veggie bag and they say it is about \$10 worth of groceries but it extremely helpful when you are low on money. [ID001]

This participant emphasized the value of incentives for young women such as herself contending that young women need:

More help. Like, whether it be food or lower housing costs or reasonable transportation costs. Like, anything like that would make it easier or help with certain baby supplies because some baby supplies just cost an arm and a leg and you have to keep supplying them. [ID001]

Participants suggested that providing daycare services or offering gift cards, grocery bags, a free healthy meal or vouchers for transportation would be immensely helpful.

### **Spreading Awareness and Improving Accessibility**

Many of the young women were not aware of local quit smoking supports and services. They contended these supports need to be made more visible and that multiple strategies need to be employed to increase awareness and ensure they are reaching their target audience. It was consistently reported by the young women in this study that they had little knowledge or awareness of any quit smoking supports or services locally available to them. For example, one participant said, “I believe there should be better [quit smoking] support ... Because I haven’t heard of anything around to help [quit].” [ID011]. Another participant urged for more comprehensive advertisement strategies to make cessation programs more visible:

Maybe like, if there’s groups out there, like, I don’t see anything advertised anywhere about any of them so more advertisement to get the groups through to people. I think that there should be more, like, maybe fliers or something or like, websites, links of Facebook or something to show them. [ID005]

Another young woman accentuated how social media could be effectively used to spread the word of quit smoking supports and services for youth: “Pamphlets are good; like, they do hand out but I think that social media’s a...a better way to get to them. Things go viral very quickly; it’ll come up on every website, Facebook page” [ID010]. One young woman suggested that quit smoking supports for pregnant and parenting women should be well advertised on billboards and on public transportation: “They should put advertisements on, like, the buses and stuff because there’s a lot of people who take buses and on bulletin boards...or not bulletin boards...billboards” [ID006].

Study participants recommended promoting awareness and offering free quit smoking aids to capture the attention of young women and to make the programs and

services more appealing: “Make people very aware...like, really promote it and give free quit smoking aids, like patches or gum, like, whatever, like, stuff to help them” [ID003]. One young woman who successfully quit smoking acknowledged that women should be offered the right tools, information and resources to build their support system and increase their self-efficacy for quitting:

See when I quit smoking...I wasn't really like, aware that there was like, classes and programs that you can go to like, to help you quit smoking. So I guess, just make them more aware of that...Just giving her all the right like, tools needed to quit I guess, like, giving her all the right information, like, you know, like, programs and places that she can go to help her and just like, a solid support system and stuff like that. [ID009]

The young women also alluded to accessibility issues and described that a support program should offer a transportation service or vouchers to make ‘quit smoking’ programs easier to attend. One young woman explained why offering a transportation voucher would be helpful: “because I barely have any money for the bus...’Cause, like, I spend all my money on food and rent and stuff like that and for the baby. I don’t really have anything left over for the bus” [ID006]. Some young women mentioned that it may also be helpful to offer in-home support for young mothers who would not benefit from cessation support located in social settings. For example, one participant alluded to challenges faced by single, young women in trying to access services to help them quit and proposed in-home visitation as a suggestion for increasing accessibility of cessation support:

I know a few of my friends that...that don’t have, like, a father in their child’s life; makes it harder for them to, like, go places. Like, even if they had, like, home visits for those kind of [cessation] programs, too. I guess that would help them out. [ID002]

### **A Plea to Partners, Friends and Family**

Many of the young women expressed that they struggled with trying to change their smoking behaviour because so many people around them smoked. When asked who would be their greatest supporter if they decided to quit smoking again, one young mother replied, “Probably myself. I wouldn’t really say my family or friends because they smoke too, so how are they supposed to help someone who wants to quit, when they're still smoking” [ID005]? Many of the young women attributed their postpartum relapse to being in tempting situations with their partners, friends or family. Many reiterated that in order for them to feel ready and capable of quitting smoking, they would need:

The support from the people that are closest to me – the people that I am going to be around- if they could not smoke around me and not talk about it - it would make it a lot easier for me to stop thinking about it. [ID001]

When asked how friends and family could support her better in her quit attempts, another participant similarly proclaimed, “Yeah, don’t talk about smoking; don’t come around me; don’t have a cigarette around me. If it has to do with smoking, stay away” [ID003]. Another young woman described how her friends and family would try to help her quit but being that they all smoke themselves, they would not be helping as much as hindering:

They would motivate me but then smoking wouldn't help in a way. If you understand what I mean; like, them having a cigarette in front of you and telling you it's good not to smoke but hence they're not trying to hide their cigarettes to help you quit ... To me, avoiding family and friends would be better sometimes. [ID012]

One of the young women who quit smoking mentioned how it was easier to achieve abstinence because her mother quit as well, which removed some temptations to start back up. She said:

I just don't smoke. I don't know. I kind of don't let myself do it. My mom actually just quit, too, so it's a lot easier without her smoking at home...it's a lot easier without each other smoking. You don't have to smell it on other people or see the cigarettes laying around the house. [ID010]

In summary, the pregnant and parenting young women in this study elucidated the complex and multi-faceted nature of the personal and contextual factors that influenced their smoking from pre-conception throughout pregnancy and within the postpartum period. Young women felt the health of their babies was most important, and when pregnant the potential for negative health consequences had a powerful influence on making positive changes to their smoking behaviour by either quitting 'cold turkey' or significantly reducing their cigarette consumption. Study participants described their attitudes towards and perceptions of health care provider interactions during and after pregnancy, particularly in relation to their discussions about smoking and their knowledge of smoking cessation services and supports within the community. Lastly, young women elaborated on what they believed may have aided them in making positive behavioural changes with regards to their smoking habits and proposed strategies for providing young women, such as themselves, with more comprehensive smoking cessation support during and after pregnancy.

## **CHAPTER FOUR: DISCUSSION**

Although there is a vast amount of literature on smoking in pregnant adult women, this was among the first few qualitative studies to explore in-depth the personal and contextual factors that influence pregnant and parenting young women's smoking behaviour. This also was one of the first studies to elicit the voices of pregnant and parenting young women to understand their perceptions of smoking cessation services as well as gain their insights on how cessation supports could be improved to better meet their unique needs. These study findings have implications for informing targeted and effective cessation interventions.

The personal and contextual factors influencing smoking behaviour reflect the five levels of influence described in McLeroy's (1988) social ecological model (intrapersonal, interpersonal, organizational, community and public policy) and are discussed in this context. Application of this model helps identify health determinants at each system level and demonstrates the complex interconnections among these determinants. Determinants at each level of analysis not only influence smoking behaviour individually but also in combination and the strong interplay between determinants may magnify the effects of one another (Kothari et al., 2007). Subsequently, the findings related to young women's awareness, access to and perceptions of smoking cessation services and supports in the community as well as intervention strategies to promote positive behavioural change are discussed. Following the discussion on opportunities for improving smoking cessation supports and services identified by pregnant and parenting young women, implications



for policy, practice and programming will be identified and finally, study strengths and limitations and considerations for further research will be addressed.

### **Intrapersonal Level**

Intrapersonal factors that influence health behaviour include characteristics of the individual such as knowledge, beliefs, values, motivations and self-concept (McLeroy et al., 1988). Individual characteristics that contributed to young women's smoking behaviour were identified. Intrapersonal factors, including young women's knowledge and beliefs, were important in influencing their smoking behaviour.

Knowledge of the negative implications of prenatal tobacco exposure and concern about the health of their babies was a key factor influencing the cessation efforts of study participants. Participants believed there to be deleterious consequences and likened smoking to poisoning their babies. An Australian study by Hauck et al. (2013) similarly found such knowledge and concern over the health of their babies to be an enabler for positive behavioural change amongst young women, yet Leiner et al. (2007) found that pregnant adolescents had poor understanding of fetal health consequences. Young women in this study demonstrated knowledge and understanding of the negative consequences of smoking during pregnancy. The perceived severe, negative ramifications effectively altered their desire to smoke prenatally.

The guilt young women felt for smoking, before finding out they were pregnant, also was an influential factor driving their cessation efforts. Participants reasoned that if their pregnancies had been planned they would have pre-emptively abstained from smoking prior to conception, which may have been a strategy to reduce their guilt. Guilt

has been identified as a motivator to quit in some studies of pregnant adult women (Radley et al., 2013; Tod, 2003). However, findings from this study contrast those of a recent systematic review of the qualitative literature on barriers and facilitators to women's smoking cessation during and after pregnancy that found feelings of guilt did not act to facilitate quitting (Flemming et al., 2015). This finding suggests young women may be more inclined to quit in pregnancy, feeling guilty for smoking when they were unknowingly pregnant, and commit to abstinence for the duration of their pregnancy to reconcile this feeling of guilt.

Almost all young women in this study reported that they either committed to quitting completely or significantly reducing their cigarette intake during pregnancy. Although a number of studies have attributed the higher smoking cessation success rates of young women (less than 25 years of age) to shorter smoking histories and being less addicted to nicotine than older women (Gilbert, Nelson, & Greaves, 2015; Greaves et al., 2011), this current study offered some alternative reasons young women decide to and successfully quit smoking during their pregnancies. The young women's knowledge and beliefs regarding the effects of smoking on their babies had a powerful influence on their motivation to quit and ability to successfully abstain from smoking throughout pregnancy.

Becoming pregnant was an impetus for positive change and as the young women began to self-identify as soon-to-be-mothers, they were able to make positive lifestyle and behavioural changes. These young women considered pregnancy an opportunity to make better lifestyle choices, get their lives in order and start acting like a grown up. The enhanced motivation to quit smoking in pregnancy is supported by research with adult

populations (Greaves et al., 2011; Hannöver et al., 2008; Massey & Compton, 2013; Pregnets, 2012). However, few studies have explored pregnant young women's propensity for positive behavioural changes in relation to their smoking and other behaviours. Similar to a Canadian study on pregnant and parenting young women and antisocial behaviour (Breen, 2014), this study found young women developed a positive self-identity while transitioning to motherhood, which altered their personal values and priorities. Although Breen (2014) did not evaluate young women's positive behaviour change in relation to smoking, this current study found the positive changes to young women's personal identity was reflected in positive behavioural changes, especially with regards to their smoking. Study findings suggest pregnancy is an opportune time to assist young women in establishing positive health behaviours such as healthy alternative stress reduction strategies and coping mechanisms to replace smoking. Helping to instill positive health behaviours during pregnancy may be highly effective because young women are more inclined to make healthy lifestyle changes in the midst of their changing self-image from teen to mother.

Smoking was a buffer against stressful situations for young women and endeavouring to change their smoking behaviour while adjusting to stresses associated with pregnancy amplified this stress. Although all young women discussed precarious plans to quit smoking and most were successful, some refocused their efforts on cutting down as an alternative, as quitting completely was too stressful. This finding that cutting down was conceptualized as a positive behaviour change in lieu of hastily quitting during pregnancy, particularly in the context of compounding stressful circumstances, is

consistent with findings from a systematic review by Graham et al. (2014) that explored the experiences of cutting down among pregnant adult smokers. In this current study, the compounding effects of stressful events during pregnancy (such as leaving an abusive partner, custody battles and being under investigation by children's aid services) complicated cessation efforts and made "quitting smoking not a priority." Systematic reviews have similarly identified stress to be a leading barrier to smoking cessation in pregnancy (Flemming et al., 2013, 2015; Hauck et al., 2013). This study adds insight into the magnitude of stressors young women faced during their pregnancy that made the prospect of quitting more burdensome.

After pregnancy, the pressures of adapting to new roles and responsibilities as a young mother positioned young women in arduous and stressful circumstances, and the accumulation of stressors often led to early postpartum relapse. In postpartum, young women were laden with challenges including financial concerns, relationship issues, single parenting, having little sleep and limited support. The stress associated with becoming a new parent and taking care of a newborn also was identified as a barrier to sustained abstinence in a recent systematic review on smoking in adult women (Notley et al., 2015). This current study offers deeper understanding of the context-specific stressors associated with becoming a young mother and ties to postpartum smoking relapse.

The young women desired the positive physiologic and emotional effects gained from smoking, not only in response to stressful situations but also to remediate negative emotions. These positive effects reinforced smoking as a key coping mechanism. Another study exploring non-pregnant adolescents' perceptions of the need to smoke also found

that adolescents took to smoking as a means to relieve stress, promote relaxation, and dissipate feelings of sadness, anger, helplessness, and loneliness (Johnson et al., 2004). Smoking to regulate mood was more pronounced among study participants who struggled with mental illness. Several young women in this study identified they had anxiety and depressive disorders, and made connections between their mental illness and their smoking behaviour. The relationship between young women's psychological wellbeing to their smoking behaviour reflects findings from other studies that adolescent smoking appears to be linked to depressive and anxious symptoms, and also that substance-using behaviours may be consistent with self-medicating (Audrain-McGovern, Rodriguez & Kassel, 2009; Buckner & Vinci, 2013; McKenzie et al., 2010). Although the aforementioned studies focused on non-pregnant adolescents, more recently studies have explored the psychological distress experienced by young mothers (Chapman & Wu, 2013; SmithBattle & Freed, 2016) with one review finding that distress increases the risk of maternal substance use (Chapman & Wu, 2013). In comparison with this finding by Chapman and Wu (2013), who studied adolescent mothers' substance use in a general sense, the current study identified connections between young women's mental illness and their smoking behaviours. The findings from this study add to our understanding of how mental illness and psychological distress can influence smoking as well as efforts to quit before, during and after pregnancy.

Prenatal smoking cessation efforts proved to be short-lived as many of the young women relapsed shortly after the birth of their baby. A key factor that contributed to this relapse was young women's reconceptualization of the harms associated with smoking

postpartum versus when their babies were in-utero. They were indifferent about their own health and reasoned that smoking after pregnancy caused only them harm, as they were no longer breathing for two. Young women's altered perception of smoking-related harms to their baby postpartum and disregard for their own health is similar to findings from a study by Albrecht and Caruthers (2002) that found pregnant smoking teenagers focused on quitting because of concern for their baby, but felt indifferent with respect to the negative impact of smoking on their own personal health. Throughout the narratives of young women in this study we can see how, after pregnancy, the perceived benefits of smoking (smoking as a means of stress relief and coping strategy) outweighed the immediate maternal, newborn and infant health consequences, which adds to our understanding of why young women relapse early postpartum.

Although young women presented with varying degrees of knowledge regarding second-hand and third-hand smoke, they believed it was important to make efforts to reduce their infants' and children's tobacco smoke exposure. They felt comforted knowing that even though they resumed smoking postpartum, they could take actions to reduce second-hand smoke exposure. They were adamant about smoking outside, away from their children and avoiding smoking in closed, confined areas such as their car. Participants even alluded to attempts to reduce their children's third-hand smoke exposure by keeping their home smoke-free, avoiding homes where smoking was permitted indoors, showering after smoking, changing their clothes, brushing their teeth, and washing their hands. Other studies have not yet explicitly explored mother's attempts to reduce children's exposure to third-hand smoke but a few have explored adult mother's

beliefs regarding protecting children from second-hand smoke. This finding regarding harm reduction efforts is similar to that of Von Kohorn et al. (2012) who found that postpartum women believed they could protect their children from the harms of smoke exposure, making postpartum relapse a more appealing option among postpartum adult women. Similarly, a recent systematic review of qualitative studies on the postpartum smoking relapse patterns of adult women found that women who quit smoking during pregnancy commonly stated they relapsed postpartum because they no longer needed to protect their babies in-utero and could refocus on protecting them from second-hand smoke (Notley et al., 2015). Young women were comfortable with their decision to resume smoking postpartum based on their underlying beliefs that smoking was harming only themselves and they could take measures to protect their children from second-hand smoke and third-hand smoke exposure.

All of these practices that they employed based on good intentions to offer some protection from smoke exposure became less routinized as their children aged. These practices among parenting young women have not previously been identified in the literature. The protective measures young mothers adopted to reduce their infants' and children's exposure to tobacco smoke adds to our understanding of young women's knowledge, beliefs and possible misconceptions about protective practices to reduce their infants' and children's second-hand and third-hand smoke exposure postpartum. The finding that young women become less concerned with imparting protective measures to reduce their child's smoke exposure, as their child advances from infancy to early childhood, adds to our understanding of young women's beliefs on harm-reduction

practices and identifies a need for further health teaching.

Another factor that influenced the young women's smoking behaviour in the postpartum period was whether or not they were breastfeeding. Although they were unaware of the impact of smoking on their breastfeeding ability or their baby, young women's discontinuation of breastfeeding coincided with their time of smoking relapse, which was often early in the postpartum period. Several studies that explored the relationship between maternal smoking and breastfeeding found that women who breastfed smoked less than those who formula fed (Lauria, Lamberti, & Grandolfo, 2012) and that breastfeeding may be a protective factor for sustained smoking abstinence postpartum (Kendzor et al., 2010; Leclair et al., 2015; Notley et al., 2015). Study findings support literature suggesting that breastfeeding is an important factor in postponing relapse. The findings from this study also identified a gap in young women's understanding of how smoking affects a breastfeeding infant or negatively impacts their ability to breastfeed.

After having successfully modified their smoking behaviour temporarily during pregnancy, the young women had renewed confidence in their abilities to control their smoking and believed they would have little difficulty quitting in the future, which could have made resuming smoking postpartum a more attractive option. This finding that young women perceived quitting smoking to be more attainable after positively altering their smoking patterns during pregnancy has not previously been identified in the literature. Young women's perceived control of their smoking addiction after temporary abstinence in pregnancy adds to our understanding of the beliefs that influence young



women's resumption of smoking after the birth of their baby. Young women believing that they could quit on a whim without difficulty may be painting an unrealistic image of abstinence, setting them up for future failure and perpetuating life-long smoking habits.

### **Interpersonal Level**

McLeroy's (1988) social ecological model guided the examination of mechanisms through which close relationships with peers, partners and family members influenced young women's smoking behaviour in pregnancy and postpartum. The characteristics and dynamics of young women's relationships correspond to the interpersonal level of influence within McLeroy's model. Young women considered interpersonal factors and social support to be most important in influencing their smoking behaviour.

The young women in this study described traumatic experiences and adverse events in childhood or adolescence (including losing a parent, domestic violence, abuse and household dysfunction) that influenced their smoking patterns as smoking became their sole coping strategy and means of self-medicating. Experiences of trauma were likely the root cause of young women's maladaptive coping and psychiatric distress (depression and anxiety disorders being chief among them) leading to the adoption of health-risk behaviour of smoking and patterns of self-medicating (Canadian Centre on Substance Abuse [CCSA], 2009). Other studies have similarly identified that traumatic life events are significantly and positively associated with smoking (and other substance misuse) and that the positive physiologic effects of smoking function as a coping or self-medicating behaviour that counters psychological distress, which imposes barriers to quitting (Garland, Pettus-Davis & Howard, 2013; Pampel et al., 2015; SmithBattle & Freed,

2016). This current study adds to our understanding of how young women's exposure to adverse events in childhood or adolescence can influence their smoking behaviours and how these traumatic experiences can act as a barrier to quitting in pregnancy and postpartum, especially when smoking is considered an essential coping mechanism.

All young women had grown up with their parents smoking and believed that they were normalized to the effects of tobacco dependence from an early age. Participants explained that parental modeling of tobacco use and permissive attitude towards smoking made them more inclined to smoke. This finding coincides with that of other studies that found parental smoking was correlated with earlier smoking initiation, increased susceptibility to tobacco addiction and developing a life-long habit among adolescents, unless their parents quit smoking (den Exter Blokland et al., 2004; Mays et al., 2014; Selya et al., 2012). Participants also alluded to the influence of their siblings and other individuals within the household in the development of their smoking habits, which is consistent with a study by Scherrer et al. (2012) that explored influences on adolescent smoking initiation. The young women in this study believed their family members were not particularly helpful in supporting their efforts to quit during pregnancy even though they tried to be encouraging, which adds to our understanding of family influence on cessation efforts.

This study found peer pressure to have a powerful influence on young women's uptake and frequency of smoking. Participants explained they started smoking to fit in, make new friends and be considered 'cool' amongst their peers in school. Literature supports a strong correlation between adolescent smoking and the number of friends in

one's social network who smoke; having more smoking peers corresponds with more perceived pressure to smoke, increased smoking onset and increased odds of becoming a regular versus occasional smoker (Ali & Dwyer, 2009; Harakeh & Vollebergh, 2012; Leatherdale et al., 2005; Scherrer et al., 2012). Group membership and social belonging aid in identity formation and it is important to take into account adolescents' increased susceptibility to peer pressure as a means of maintaining group identity (Simons-Morton & Farhat, 2010). Study findings highlight peer pressure to have a strong influence on smoking from pre-conception, during pregnancy and postpartum.

Study participants remarked that becoming pregnant destabilized their relationships with friends and they acknowledged the impact this had on their smoking patterns. In some instances the young women were ostracized from friend groups. SmithBattle (2013) contended that pregnant adolescents' seclusion from peers could be related to the stigmatization associated with early-aged pregnancy. In other instances, the young women consciously decided to withdraw from friends who smoked to provide themselves with the best chance at quitting while pregnant. To the researcher's knowledge, no previous studies have identified pregnant young women's propensity to leave their smoking friend groups to aid their cessation efforts. In comparison to the study by Nguyen et al. (2012) that found pregnant adult women's relationships changed with the smokers in their social networks as a result of their non-smoking status (losing a connection with smoking friends or being temporarily isolated from them), the majority of young women in this study made deliberate attempts to segregate themselves from smoking friends. However, the young women in this study who returned to smoking

friend groups postpartum reported relapsing. This study finding adds to our understanding of peer influence on young women's cessation efforts in pregnancy and postpartum as well as the proactive measures they are willing to take to improve their chances of abstaining from smoking prenatally.

The only young women in the study who managed to quit during pregnancy and remain abstinent for over a year postpartum had bonded together and supported each other throughout their cessation efforts, acting as each other's 'quit buddy'. This finding is congruent with the findings of a randomized controlled trial of a smoking cessation intervention for pregnant adolescents (Albrecht et al., 2006) as well as a meta-analysis of text messaging interventions for smoking cessation (Spohr et al., 2015) that found a 'quit buddy' can aid efforts to quit smoking in conjunction with other interventions. Having a close companion equally commit to smoking cessation reduced the burden of quitting, allowing the young women to overcome withdrawal symptoms and ultimately their addiction because together they had stronger willpower and motivation to stop smoking permanently. This study finding highlights the necessity of having a strong supporter to unite with throughout cessation efforts to enhance motivation, hold one another accountable and foster a lasting commitment to quitting. Study findings suggest having a quit buddy to be a highly effective way to sustain abstinence amongst postpartum young women.

Study participants emphasized the influence their partners had on their smoking behaviours and efforts to quit. They were adamant that they required their partners' full support to quit smoking and those whose partners either didn't smoke or quit with them,

were most successful. This finding is consistent with other study findings that adult women were more likely to stop smoking during pregnancy and remain abstinent for longer in the postpartum period when their partners quit or did not smoke (Flemming et al., 2015; Notley et al., 2015). Interestingly, the young women in this study believed their partners should emulate their smoking behavioural changes so that they would be equally impacted, reasoning that it was only “fair”. To date, this notion of fairness has not been noted in the literature and thus it is unclear if this belief is distinct among young women in this study. Participants desired more understanding and assistance from those closest to them (particularly their partners) to facilitate their cessation attempts, which adds to our understanding of young women’s perceived needs for support and the interpersonal relationships influencing their ability to successfully quit and remain smoke-free in pregnancy and postpartum.

### **Institutional/Organizational Level**

This study examined the ways in which young women perceived that institutional and organizational factors, such as schooling and employment, directly and indirectly influenced their smoking behaviour in pregnancy and postpartum. All study participants dropped out of school or postponed their schooling and all but one were unemployed as a result of becoming pregnant at an early age. They expressed frustration with their socioeconomic circumstances, recognizing the need to pursue higher education. This acknowledgment was matched with concern that their financial situation would hinder their ability to go back to school, which was a stressor influencing their smoking behaviour. Hosie (2007) found young women who disliked school and disengaged from

education pre-pregnancy held negative attitudes towards schooling after pregnancy. This finding by Hosie (2007) is contrary to this study's findings in that the young women shared greater appreciation and acknowledged the benefits of schooling to better their life situation. Although the young women in this study did not directly link their lower socioeconomic status to their smoking patterns, studies have found lower educational attainment, low income and unemployment to be strongly correlated with smoking (Marmot, 2005; Senterfitt et al., 2013) and that higher education and occupation level are positively correlated with quitting among pregnant women and the general population (Cui et al., 2014; Hiscock et al., 2012).

The young women in this study faced a multitude of challenges related to living independently and securing or maintaining gainful employment, having limited or no source of income and relying on government financial assistance plans such as Ontario Works. The fact that the majority of young women were regrettably unemployed is concerning as many participants voiced that having a job and keeping busy deterred them from smoking. Several studies have identified that social and economic disadvantage increases vulnerability to smoking amongst women in pregnancy and postpartum (Cui et al., 2014; Businelle et al., 2013). To date, studies have not explored with young women their struggles and perceived limitations to improving their socioeconomic circumstances. This study sheds some light on pregnant and parenting young women's perceptions of employment opportunities and prospects for furthering their education in the years following the birth of their baby. Viewing the issue of socioeconomic disparity from the vantage point of young women adds to our understanding of challenges pregnant and

parenting young women face when attempting to secure employment or pursue education aspirations, perpetuating a cycle of poverty, stress and smoking dependence (Basch, 2011).

### **Community Level**

The community level of the social ecological model explores the settings in which social relationships occur and seeks to identify how the characteristics of these settings relate to an individual's smoking behaviour (CDC, 2015; McLeroy et al., 1988). The young women in this study spoke of embedded stress-causing living conditions and residing in a “rough” neighbourhood, which made smoking an easy habit to fall into but difficult to quit. They reasoned that they were predisposed to smoking from an early age because smoking was a normalized behaviour in their communities. It has been suggested that smoking could be a socially and culturally ingrained behaviour in deprived and poorly resourced neighbourhoods because it has been cemented into daily living as a result of social reinforcement and a stressful living environment (Ahern et al., 2009; Cubbin et al., 2008; Dunn et al., 2015; Snedker, Herting, & Walton, 2013). This study found that pregnant and parenting young women's smoking behaviours manifested as a result of environmental cues and their cessation efforts were heavily impacted by neighbourhood influences. Young women's depictions of how neighbourhood and community characteristics impacted their health and health behaviour adds to our understanding of how the “neighbourhood effect”, which is the term used to describe the influence of neighborhood characteristics on health equity and health behaviours

(Sampson, Morenoff & Gannon-Rowley, 2002), shapes young women's smoking as well as positively or negatively impacts smoking cessation.

The young women expressed negative views towards their neighbourhoods and a lack of community belonging. One cross-sectional study from Hamilton, Ontario investigating the association between perceptions of neighbourhood and health outcomes found individuals' negative perceptions of their neighbourhoods to be correlated with lower socioeconomic status, unhealthy lifestyle behaviours, and poorer physical and emotional health, compared to individuals whom held positive perceptions of their neighbourhood (Wilson et al., 2004). In a more recent Canadian study, enhanced community support and belonging were found to be associated with positive behaviour change (Hystad & Carpiano, 2012). Relatedly, smoking rates are highest in communities that lack community support (Blackman, 2008; Hiscock et al., 2012).

Ahern et al. (2009) found that in neighborhoods where social norms are strongly anti-smoking, there is greater individual effort and higher collective efficacy to smoke less compared to neighborhoods where social norms are permissive. This current study found young women shared feelings of disdain towards the neighborhoods in which they resided, believing the social and physical conditions in their immediate environments perpetuated their smoking behaviours by imposing stresses without supports to aid efforts to quit. This study finding adds to our understanding of community-level influences on young women's smoking behaviour and stresses the importance of implementing community capacity building strategies to reduce physical environmental concerns that impose as barriers to quitting and change social norms that reinforce smoking behaviour.



The finding also suggests a need to build youth-based community supports that foster the adoption of positive health behaviours and promote a sense of belonging, particularly for pregnant and parenting young women.

The young women in the study attended prenatal groups in their communities but identified that there was minimal discussion about smoking during pregnancy. Although the young women in this study could not recollect specific information learned about smoking during and after pregnancy in the prenatal classes, a recent Canadian study found attending prenatal classes was a predictor of smoking cessation during pregnancy among adult women (Gilbert, Nelson & Greaves, 2015). This study finding suggests that prenatal classes (young parent prenatal classes, in particular) should offer more information on smoking, cessation services and available supports to reinforce messages of the benefits of quitting smoking for the health of the young women, their infants and children. This strategy would help to increase young women's knowledge of maternal and child smoking-related health consequences as well as enhance their awareness of locally available smoking cessation supports and services.

### **Policy Level**

The fifth and final level of the social ecological model is the policy level (McLeroy et al., 1988), which in this study focused specifically on smoke-free Ontario legislation. Smoke-free laws and policies exist to primarily protect nonsmokers from the harms of secondhand smoke (USDHHS, 2006). Several studies have shown that smoke-free legislation and policies can help motivate smokers to quit, increase cessation rates and reduce smoking prevalence in the general population and may also reduce smoking

initiation among youth (Hopkins et al., 2014; International Agency for Research on Cancer [IARC], 2009; Siegel et al., 2008; USDHHS, 2006). The OTRU (2012) found public support for smoke-free policies to vary greatly depending on setting, using data from the Centre for Addiction and Mental Health Monitor in 2011. For example, they found 87% of current Ontario smokers supported banning smoking at outdoor children's playgrounds and parks. However, current smokers were significantly less likely to agree that smoking should be banned in public parks and on beaches (25%), at outdoor special events (such as concerts or festivals, 41%), or near outdoor recreation facilities (such as sports fields and stadiums, 51%; OTRU, 2012). The young women in this study shared their attitudes towards smoke-free policies that prevent smoking in motor vehicles with children present, schools, children's playgrounds and publicly owned sports fields. There is a paucity of literature on pregnant and parenting young women's attitudes towards Ontario's smoke-free policies and this was among the first studies to include an exploration of the perceived impact of smoke-free policies on smoking behaviours of pregnant and parenting young women.

The young women in this study were very accepting and supportive of Ontario's smoke-free policies, especially those that protect infants and children by imposing restrictions to reduce their tobacco smoke exposure. They also strongly supported newly passed legislation making it illegal to smoke on or near children's playgrounds, parks, sports fields and other recreational outdoor spaces. The study participants contended that these legislations should be strictly enforced. Similarly, a review on public support for smoke-free outdoor legislations in the USA and Canada found high support for outdoor

smoke-free policies amongst women, regardless of their smoking status (Thomson et al., 2015). Young women felt so strongly about mandating smoke-free policies to protect children from second-hand smoke exposure, they voiced these laws should extend into the household and smoke-free home policies should be enforced. The OTRU (2012) reported significantly higher agreement from survey respondents (80% in 2011) that there should be a law that parents cannot smoke inside their home if children are living there (compared to 70% reported in 2006). Although it is highly unlikely young women are aware of the evidence on policy impact, the young women's acceptance and appreciation for Ontario legislation enforcing smoke-free environments suggest that pregnant and parenting young women smokers are strongly supportive of smoke-free policies because of their powerful potential to protect infants and children from the dangers of smoking.

The young women also believed the reduced visibility of cigarette smoking in public would make smoking a socially unacceptable behaviour and reduce the temptation to smoke for children and smokers, such as themselves. The IARC (2009) similarly found public attitudes towards smoke-free restrictions on outdoor smoking were largely supportive and reasons cited by the public to support these policies included the avoidance of SHS exposure, reducing youth opportunities to smoke and positive role modeling for youth. This finding also supports the Canadian literature suggesting that smoke-free Ontario policies create healthier environments for non-smokers and the reduced visibility can aid smokers who want to quit by removing temptations (Kaufman et al., 2010). Growing public support of smoke-free outdoor policies are helping to change norms to reduce smoking prevalence by reducing the visibility and acceptability

of smoking at the community level (Thomson et al., 2015). This study offers a new perspective from an understudied population of pregnant and parenting young women smokers in relation to the perceived impact of provincial smoke-free policies on maternal and child health.

### **Awareness, Access to and Perceptions of Smoking Supports and Services**

The young women in this study were largely unaware of local smoking cessation supports or services, and had limited knowledge of cessation resources or self-help materials available online to help them quit. No previous studies were found to have explored pregnant and postpartum young women's awareness of smoking cessation services or supports. This finding that young women were unaware of any cessation support or services available to them suggests the need for greater promotion, advertisement, media campaigning and integration of quit smoking services into community prenatal care and obstetrical practice to enhance knowledge and awareness of cessation options. Maternity care providers are well situated to inform and refer pregnant and parenting young women to appropriate cessation resources and supports.

Accessibility of smoking cessation services was a concern for pregnant and parenting young women in this study. Many of them relied on public transportation, had to consider child-minding services and daycare availability, and could attend cessation services only if they were within close proximity or walking distance. Other studies also have noted lack of transport and childcare demands as barriers to attending smoking cessation services (Borland et al., 2013; Tod, 2003). Geographic distance among women living in rural and remote areas has been cited as the reason for some accessibility issues

(Borland et al., 2013) whereas young women in this study identified having very limited ability to attend any services outside of their immediate vicinity. This finding adds to our understanding of young women's accessibility concerns and transportation needs.

Young women also candidly shared their perceptions of smoking cessation supports and services. Young women believed their maternity care providers did not offer adequate cessation counselling. They remarked that their providers merely asked about their smoking status in the first prenatal visit and were satisfied as long as they reported they quit or cut down smoking (whether or not this was true). The providers did not question or counsel further, and there was no follow up on smoking status. Hotham, Atkinson and Gilbert (2002) also found that when pregnant smokers reported they were 'cutting down' maternity care providers generally avoided further inquiries about smoking. Similarly, Coleman-Cowger et al. (2014) found obstetricians reported asking all pregnant women about tobacco use during the initial visit, yet few followed up on their smoking status in subsequent visits. The varied, inconsistent approach to offering cessation counselling by maternity care providers (Borland et al., 2013; Hotham, Atkinson & Gilbert, 2002) is a departure from Canadian smoking cessation best-practice guidelines (CAN-ADAPTT, 2011).

The 5A's (Ask, Advise, Assess, Assist, and Arrange) is a best-practice and evidence-based approach for delivering cessation counselling to all smokers (Fiore, 2008; Chamberlain et al., 2013), including pregnant women who smoke (De Wilde et al., 2015; Melvin et al., 2000). It is the most frequently cited evidence-based cessation intervention (Cantin et al., 2014; Fiore et al., 2008). The American College of Obstetricians and

Gynecologists (ACOG) specifically encourages maternity care providers to utilize the 5A's model (Ask, Advise, Assess, Assist and Arrange) as the primary intervention strategy to support smoking cessation during pregnancy (ACOG, 2010). The 5 A's intervention is also the top clinical practice recommendation endorsed by national and provincial practice-informed, evidence-based smoking cessation guidelines in Canada (CAN-ADAPTT, 2011; RNAO, 2007). This mnemonic necessitates that providers: ask and document tobacco use status for at every visit both prenatally and postnatally; advise the pregnant or postpartum patient about risks with smoking; assess her willingness to quit or make a quit attempt; assist those ready to make a quit attempt by offering counselling, pharmacotherapy or referring to other cessation options; and lastly, arranging follow-up to re-evaluate smoking status (Albrecht et al., 2004; CAN-ADAPTT, 2011; Cantin, 2013; Coleman-Cowger, et al., 2014). Several studies based in the US have evaluated the efficacy of using the model with pregnant women, finding the 5 A's model to improve quit rates during pregnancy in primary perinatal care (ACOG, 2000; Albrecht et al., 2011; Kim, England, Kendrick, Dietz, & Callaghan, 2009).

Young women in this study reported that their care providers implemented only the first two components of the 5 A's model, namely asking about smoking status and advising young women to quit, and failed to assess, assist or arrange for follow up. The finding in this study that young women perceived the amount and quality of smoking cessation counselling they received from their maternity care providers to be minimal and unhelpful suggests providers are not providing effective counselling that adheres to the cessation recommendations for pregnant women and youth (CAN-ADAPTT, 2011).

Although a growing body of literature suggests that even minimal intervention by health-care professionals can drastically reduce rates of smoking (RNAO, 2007; Wong et al., 2011), study findings indicate that young women did not perceive that their maternity care providers provided in-depth discussion or comprehensive information about smoking. This finding adds insight to the cessation support provided to young women by maternity care providers and suggests that young women may not be receiving adequate cessation counselling during pregnancy or postpartum.

Some barriers to the provision of adequate cessation counseling by maternity providers identified in the literature include the lack of time to counsel, patient resistance to treatment or lack of readiness for changes and lack of remuneration for tobacco assessment and counselling (Blumenthal, 2007; Coleman-Cowger et al., 2014). Maternity care providers have described having inadequate resources to counsel on cessation and expressed the need for additional training on smoking cessation with regards to identifying local resources for making referrals and prescribing smoking cessation aids (such as NRT) during pregnancy (Blumenthal, 2007; Coleman-Cowger et al., 2014). The findings from this study related to young women's perceptions and experiences with smoking cessation in pregnancy and postpartum raises the question of whether maternity care providers across Ontario experience these and other barriers in addressing smoking during pregnancy and offering cessation counselling to young women pre- and postnatally.

The young women held misconceptions about their smoking cessation options in pregnancy, particularly the use of nicotine replacement therapies (NRT). They expressed

doubts about the effectiveness and safety of NRT, believing smoking in pregnancy to be less harmful than using various forms of NRT to aid their efforts of reducing or quitting. Unlike the study by Hotham, Atkinson and Gilbert (2002) that found the use of quit smoking patches (NRT) was generally accepted among pregnant adult women, this study found that young women expressed concern and skepticism about their safety. Some young women also questioned whether smoking cessation services would be helpful as they perceived their aim was to exert control over individuals' smoking behaviours and force them to quit. This finding has not previously been identified in the literature. The young women's perception of smoking cessation programs as authoritative may be a barrier to them using the programs available and may indicate a need to more effectively market smoking cessation programs to this population. Effective mass media campaigning and public health messaging might reinforce the benefits of attending a cessation program, improve outreach and effectively reduce misconceptions. These findings highlight the importance of providing education to address negative views and misconceptions about quit smoking services as well as smoking cessation aids.

### **Suggestions for Intervention Strategies to Support Positive Behavioural Change**

The young women offered suggestions of how maternity care providers could better support them in their efforts to quit smoking and recommended strategies for developing effective cessation services during and after pregnancy. They wanted care providers to take a gentler approach to facilitate a comprehensive understanding of the effects of smoking on themselves and their babies, and offer non-judgmental guidance without making them feel guilty about their decisions. This study finding is supported by



other studies on pregnant adult populations that recommended cessation support should be positive, not punitive (Bond, 2012; Coleman-Cowger et al., 2014), woman-centered and non-judgmental (Borland et al., 2013), sensitive to the stigma associated with smoking in pregnancy and the women's probable feelings of guilt (Ingall & Cropley, 2010; Jordan, Dake & Price, 2006), and address concerns about smoking consequences for mother and baby (Chamberlain et al., 2013; Flemming, 2013). The young women's insights and opinions of effective strategies to foster positive behavioural change enhances our understanding of young women's cessation needs, specifically during pregnancy and postpartum.

The young women shared ideas for tailoring cessation interventions. Firstly, they voiced that they wanted community-based support, which aligns with a best-practices review of cessation interventions for pregnant and postpartum women (Greaves et al., 2011). According to this review, women tend to trust services held at community-based women's centres because of their focus on issues of self-efficacy and empowerment, and the underlying socioeconomic factors affecting their lives. The young women in this study proposed the idea of creating a smoking cessation program analogous to the format, structure and objectives of the world-renowned Alcoholics Anonymous (AA) program. This was the first reported finding to suggest a program likened to AA for smoking cessation and may have important implications for developing a targeted cessation program for pregnant and parenting young women. A study on the general population exploring the mechanisms through which AA reduces relapse risk by Kelly et al. (2012) found AA mobilized multiple strategies simultaneously to promote abstinence, primarily

through adaptive social network changes and enhancing self-efficacy. Given that social networks heavily influence young women's smoking behaviours, adapting a program similar to AA for smoking cessation may prove to be an effective intervention strategy.

All the young women in the study believed it was important for smoking cessation programs to be held in a group setting so they could share their motivations and experiences with quitting smoking, encourage one other, and work together to solve common problems reinforcing their smoking behaviour. They desired social interaction and thought group support would help to build relationships with other young women in similar circumstances. Many tobacco control professionals recommend group counselling for women because they tend to be much more comfortable learning cessation strategies in a mutually supportive group setting and more willing to share their stories within a women-only cessation group versus a conventional cessation program (Ortner et al., 2002; WHO, 2010). This finding that young women prefer a women-centered, group smoking cessation program over other forms of support suggests that they feel they would benefit most from learning cessation strategies and working towards quitting in a group environment.

The young women emphasized that cessation supports should be made more visible and recommended strategies to promote public awareness, such as media advertisement and promotional campaigns through various social media avenues. A review of the impact of mass media campaigns on promoting quitting among adult smokers found them to be effective in reducing smoking prevalence by educating about the harms, changing attitudes towards smoking and increasing intentions to quit (Durkin et al., 2012).

According to this review by Durkin et al. (2012) mass media campaigns are important investments in the context of comprehensive tobacco control programs. This study was among the first to elicit young women's perspectives on the need to enhance public awareness of cessation options and highlights several youth-informed strategies to promote awareness among pregnant and postpartum young women.

In order to address accessibility concerns, study participants suggested that offering a transportation service or providing transportation vouchers would be helpful and in-home visits with public health nurses would be beneficial, particularly for young, single moms. Borland et al. (2013) suggested other strategies for increasing access to cessation interventions that included daycare services and peer or provider telephone support. This study finding add to our understanding of how to make cessation supports and services more universally accessible for pregnant young women and young mothers.

The young women also encouraged the offering of incentives to promote smoking cessation, including monetary incentives (such as gift cards), grocery gift bags, a healthy meal and baby supplies to help address their financial needs. The provision of incentives in conjunction with other intervention components (e.g., tailored information, counseling, partner/social support) has been found to be effective amongst socioeconomically disadvantaged groups in aiding their efforts to quit (Donatelle et al., 2000; Greaves et al., 2011; Lumley et al., 2009). The young women's desire for cessation services to offer incentives suggests that incentives are particularly appealing to pregnant and parenting young women and may have added benefit for those in challenging socioeconomic circumstances.

### **Implications for Policy**

Smoke-free Ontario policies offer great promise for reducing second-hand smoke (SHS) exposure, protecting infants and children from the dangers of smoking, and encouraging smoking cessation amongst smokers (McIntosh, Collins & Parsons, 2015; OTRU, 2015). As identified by the young women interviewed in this study and in the literature, smoke-free areas may help to change social norms about where it is acceptable to smoke and may have a positive impact on smoking behaviour; however, strong enforcement of smoke-free policy is an imperative factor to ensure public compliance (Kaufman et al., 2010; Thomson et al., 2015). Compliance with outdoor smoking bans is difficult to measure as the places in which these bans apply are typically open and large-scale public spaces, rendering formal monitoring and enforcement difficult (McIntosh et al., 2015). Although individuals could be fined for non-compliance, the effectiveness of outdoor bans relies mostly on voluntary compliance by smokers and social enforcement by other members of the public (Bayer & Bachynski, 2013). Recommendations for improving smoke-free legislation, based on study findings, include: increasing public awareness of public smoking bans; further developing regulations that encourage cessation efforts of smokers and contribute to making smoking less visible to the public eye, particularly for youth; and formal enforcement of smoke-free policies across Ontario by implementing evidence-based strategies to maintain compliance.

Although smoking cessation services are available, the lack of coordinated services and cessation resources reduces provider awareness as well as public access (Borland et al., 2013). Pregnant and parenting young women are considered a high

priority population for the provision of smoking cessation programs and services as mandated by the Ontario Public Health Standards (Ontario Ministry of Health Promotion, 2010). However, this understudied group tends to fall between the cracks and is underserved in regards to cessation support in Ontario (Borland et al., 2013; Bottorff et al., 2014). Ontario lacks a unified smoking cessation strategy for pregnant and parenting young women and a provincial cessation treatment policy is warranted to standardize care. A provincial cessation strategy and cessation treatment policy would outline specific cessation counselling guidelines for maternity care providers, enhance coordination of local and provincial cessation resources (Borland et al., 2013), and define appropriate strategies for implementing and evaluating evidence-informed cessation interventions for pregnant and parenting young women. A provincial cessation strategy would also help to standardize education and resources for maternity care providers and the public, provide consistent public health messaging and public awareness campaigns as well as ensure cessation options (including the perinatal use of NRT) are made affordable and accessible. Ontario needs a comprehensive cessation treatment policy based on the best available evidence that outlines integrated, multi-component interventions with demonstrated effectiveness.

To improve the availability, accessibility and awareness of smoking cessation support for pregnant and parenting young women, there needs to be provincial, multi-disciplinary (public health, acute care, mental health as well as population health and primary health care) cross-sector collaboration (e.g., between government, health, education, non-profit sectors) and commitment for better integration of smoking cessation

policy and programming (Borland et al., 2013; OTRU, 2012; Provincial Health Services Authority [PHSA], 2005). Building and strengthening inter-sectoral, multi-disciplinary relationships via provincial anti-tobacco coalitions, young parent support networks and community action groups may help create significant, sustainable improvements in smoking cessation support for this high priority population. This collaboration requires provincial funding to build a coordinated cessation system and strengthen organizational capacity for regional delivery of cessation services by supporting staff time, training and resources to develop and sustain cessation services for young women during and after pregnancy (Borland et al., 2013). Province-wide cessation programming and policies addressing smoking prenatally and postnatally, especially in relation to priority populations, can foster social action by building partnerships between public health and local grassroots action initiatives as well as provide the foundation for community mobilization (OTRU, 2015).

As part of a comprehensive smoking cessation strategy and tobacco control program targeted toward pregnant and parenting young women, provincial policies should implement mass media and social marketing strategies (OTRU, 2012; 2015). Media and social marketing can enhance public knowledge and awareness of the harms and adverse maternal and child outcomes associated with smoking during pregnancy and after pregnancy; maternal and child health effects caused by the exposure to second-hand smoke; dangers of social exposure to tobacco use for children, and that influence social norms supportive of tobacco-free living (OTRU, 2015). Anti-tobacco marketing campaigns targeting young women smokers during and after pregnancy may help to

reduce smoking rates in pregnancy, encourage quit attempts and prevent postpartum relapse. Strategic promotional and advertising measures may also increase public and provider awareness and acceptance of cessation services.

Tobacco control policies across Ontario should mandate strategies to make cigarettes less financially attainable and cessation options more affordable and accessible (Tauras & Chaloupka, 2003). The OTRU (2012) has reported that although overwhelming evidence suggests that increasing taxes on tobacco products to be highly effective in reducing smoking rates, Ontario surprisingly has the second-lowest provincial tax on a carton of cigarettes among all provinces and territories. Increasing the tobacco tax rate may be a particularly effective strategy for low income, pregnant and parenting young women (Sherburne Hawkins & Baum, 2014). The effect of cigarette taxes on prenatal smoking has been well established in the literature (Colman, Grossman & Joyce, 2003; Levy, Mohlman & Zhang, 2015; Lien & Evans, 2005; Ringel & Evans, 2001). Young adults are sensitive to cigarette prices (Zhang et al., 2006) and raising the provincial and federal cigarette tax by \$1.00 per package has powerful potential to reduce smoking-related adverse maternal-child outcomes (Levy, Mohlman & Zhang, 2015). In tandem to increasing cigarette tax, changing policy to ensure perinatal nicotine replacement therapy (NRT) and postnatal quit smoking medications are affordable (Borland et al., 2013), may also improve cessation rates amongst pregnant young women and young mothers.

Quit smoking medications, such as nicotine patches, gum and prescription medications, increase the likelihood of long term abstinence alone and in combination

with cessation counselling (Fiore et al., 2008; Patnode et al., 2015) and should be easily available to pregnant and parenting young women. One meta-analysis of 111 RCTs determined that NRT use increases long-lasting quit rates by more than 50-70%, regardless of care setting (Stead et al., 2008). Clinical practice guidelines contend that all pregnant women who smoke should be offered psychosocial support as a first line of treatment, followed by a discussion of NRT as a supplementary treatment option for women experiencing difficulty quitting (Meernik & Goldstein, 2015; Wong et al., 2011). A recent Canadian study found that provinces with comprehensive coverage for NRT or medications policies, also referred to as subsidization policies, had increases in NRT use and quit success (White et al., 2015). There may be benefit in offering complementary NRT during pregnancy and quit smoking medications once women are no longer breastfeeding to prevent relapse. Offering complementary NRT and quit smoking medications to pregnant and parenting young women may increase cessation success rates and reduce their risk of becoming life-long smokers (King, Pomeranz & Merten, 2016).

Peer group influence was identified as a catalyst for early smoking initiation and later addiction, and therefore targeted smoking prevention strategies for girls and adolescents must become more intensive and impactful at the institutional and community level. One Canadian study found that students who attended a school with a focus on tobacco prevention and strong adherence to policies prohibiting tobacco use were less likely to smoke than students who attended a school without these characteristics (Lovato et al., 2010). Therefore, smoking prevention and cessation intervention strategies should be implemented at educational institutions across Ontario by enforcing stringent smoke-



free policies and comprehensive tobacco prevention and cessation education. Ontario communities must also enforce smoke-free policies and impart capacity building strategies to support tobacco-free living. At the community level, local schools, community centres, community action groups, young parent support networks and outreach programs should encourage and facilitate the development of youth-led peer support groups to offer help in quitting smoking by role-modeling, establishing a ‘quit buddy’ and encouraging negative health behaviours to be replaced by positive coping mechanisms. Comprehensive tobacco control policy and programming can influence factors at the institutional and community level to foster an environment and social support network that promotes non-smoking, as well as build tailored, evidence-based services for pregnant and parenting young women.

Given that tobacco use and dependence clusters within socioeconomically disadvantaged populations, policies that stretch beyond smoking cessation and influence social determinants of health can indirectly influence smoking behavior (Flemming et al., 2016). Several studies have suggested that the tobacco control community should change smoking behaviour by redirecting its focus towards policy that seeks to reduce health inequity and address the social conditions that shape smoking behaviour (Borland et al., 2013; Graham, 2002; Graham et al., 2006b). Policies that may be particularly useful in tackling smoking behaviours of pregnant and parenting young women are social policies. Specifically, social policies that act to reduce poverty for young families by eliminating food insecurity, increasing educational support, providing affordable housing, and creating more employment opportunities in order to reduce their dependency on welfare.

Education and employment are important determinants of health and health behaviour (Marmot, 2005) and key considerations for addressing young women's socioeconomic circumstances and health disparity. Developing policies to support pregnant young women in their efforts to finish high school and promote parenting young women's reintegration into the school system could help to promote health equity by relieving some of the contextual factors that contribute to negative health behaviours such as smoking. Moreover, government implementation of employment assistance and career advisor programs to aid parenting youth in attaining gainful employment would help to promote independence, social security, and improve health outcomes as well as promise a better future for the young woman and their families.

In conclusion, experiences of social and economic disadvantage throughout the life course shape and mold the smoking behaviours of women from adolescence to adulthood. As such, tobacco control policies must not only aim to alter smoking habits but focus on reducing inequalities in the embedded social conditions that are determinants for smoking (Graham et al., 2006a, 2006b; Borland et al., 2013).

### **Implications for Practice**

In order to better address the smoking behaviours of pregnant and parenting young women, a provincial standard for smoking cessation counselling among maternity care providers is needed. This proposed standard should be informed by an iterative collaboration and consultation between the Ministry of Health, other ministries, health care authorities, maternity care providers, pregnant and parenting young women and other stakeholders (BCMOH, 2011). A provincial standard would help to ensure the quality and

consistency of smoking cessation counselling, improve integration between hospital and community cessation services, and improves the information available about smoking prevention and cessation services (BCMOH, 2011). Standards should pertain to screening and assessment, provider education and resources for supporting evidence-informed decision-making of cessation options, provider training in working with vulnerable young women, and cessation treatment planning informed by evidence-based practice cessation intervention strategies in pregnancy and postpartum (Ottawa Model for Smoking Cessation [OMSC], 2012). Setting a provincial practice standard would support maternity care providers by establishing recognized criteria for delivering effective cessation interventions, services and supports across the province. Standardizing cessation support offered by maternity care providers may encourage more pregnant and parenting young women smokers to make a quit attempt and sustain their cessation efforts.

In order to remove barriers to the provision of cessation services, maternity care providers must be equipped with the skills, knowledge, training and resources to provide effective cessation counseling (Borland et al., 2013; OMSC, 2012). To eliminate practice gaps, maternity care providers may require additional training and professional development on providing cessation counselling tailored to meet the diverse needs of pregnant and parenting youth (De Wilde et al., 2015; Murphy, Steyn, & Matthews, 2016). Standardizing provincial training programs and incentives to promote brief cessation interventions and counselling by maternity care providers may help pregnant and postpartum women to quit and protect children from secondhand smoke (OTRU, 2015).

Within Ontario, the Training Enhancement in Applied Cessation Counselling and Health (TEACH) Project aims to improve treatment capacity for smoking cessation interventions by offering evidence-based, accredited and clinically-relevant curricula to a range of health practitioners and TEACH training is currently considered the training standard for primary care settings and community-based services (OTRU, 2012). Although this project offers specialty courses targeting interventions for priority populations such as pregnant women, all obstetrical and community-based maternity care providers across the province should be strongly encouraged to complete this specialized training in order to reduce variability in offering professional cessation counselling and support. In addition, maternity provider training regarding quit smoking aids and options during pregnancy and postpartum is necessary and a provincial strategy for the prescription of nicotine replacement therapy during pregnancy will reduce misconceptions and hesitancy of use of NRT in combination with other cessation strategies (Borland et al., 2013). Consistent and comprehensive maternity provider smoking assessment and intervention tools may be necessary to prompt questions related to smoking behaviour, encourage open channels of communication between young women and care providers, and ensure more meaningful provider-client interactions. Complete and consistent cessation counselling may help to provide pregnant and parenting young women smokers with the multi-level supports and multi-component interventions they need.

Regional public health units could develop an on-line integrated care pathway (ICP) for women and maternity care providers that maps out and facilitates the integration

of smoking cessation supports and services available throughout pregnancy and postpartum. Integrated care pathways outline a chronological sequence of steps to be followed in providing care for patients that help to ensure quality care standards are met and to reduce variability in practice (Balatsoukas et al., 2015). This strategy could expand outreach, connect underserved young women to quality cessation resources and facilitate the provision of tailored and sustainable support through various system entry points.

The Centre for Addictions and Mental Health (CAMH) endorses the ICP approach as it helps to personalize quality care by enlisting an interprofessional team and mapping out the treatment process, placing the person at the center of their care (CAMH, 2012). An ICP for pregnant and parenting young women smokers would help to inform maternity care providers of most recent, locally available smoking cessation supports and services (e.g., cessation programs, counselling services, quitlines, self-help materials) and help to streamline the treatment and referral process, making it easier for care providers to assist pregnant and parenting young women in their cessation efforts. An online ICP would aid young women and maternity care providers to navigate through community and health care services to meet their unique needs that are directly and indirectly related to smoking. By helping young women to identify their needs, become more aware of smoking cessation community supports and services, and informed of their options they will be better able to make decisions based on evidence, develop a plan for quitting, and take control of their smoking behaviour.

Growing evidence suggests that services need to be matched to distinctive, client-identified needs for more comprehensive treatment of substance use and addiction issues (Choi, 2007; Friedmann et al., 2004; Marsh, Smith & Bruni, 2011). Matching young women's co-occurring challenges and individualized needs to cessation services (Choi, 2007), or service matching, can address the social determinants influencing smoking behaviour and help to alleviate fundamental barriers to service utilization amongst vulnerable young women. Partnering with young women to determine appropriate strategies to address their health-related needs has important implications for improving cessation efforts. For example, young woman who have suffered traumatic life events (past or present) may require or request that psychological counselling and emotional support be incorporated in smoking cessation interventions. A tailored strategy for pregnant and parenting young women must build their confidence and capacity to quit through on-going support and positive reinforcement, and empower young women to plan their path to cessation by partnering with a trusted care provider to create personalized quit plans.

Stresses associated with the transition to parenthood have a negative impact on young women's motivation to remain abstinent and increases their susceptibility to early postpartum relapse. Thus prenatal smoking cessation interventions must extend well into the postpartum period. Young women need intensive, on-going cessation support when under high stress in postpartum to sustain efforts for quitting. Maternity care providers must offer continued, comprehensive cessation counselling and follow up support postpartum to young women in an effort to encourage on-going positive changes to their

smoking behaviour. Essentially, pregnant and postpartum young women smokers require more than health education about alternative coping mechanisms and options for quitting. From a social ecological perspective, reducing young parent stress requires multiple interventions at multiple levels, including poverty reduction, social support and effective community-based young mother postpartum support together with smoking cessation support. For example, smoking cessation interventions should be individualized, particularly when psychological distress (stemming from past trauma, chronic stress, social disadvantage and limited social supports) is intertwined with smoking patterns, in which case mental health treatment should be an adjunct to cessation support (SmithBattle & Freed, 2016). Multi-level strategies are needed to decrease young women's postpartum stress burden and the need to smoke to cope, thereby decreasing relapse. Public health and maternity care providers can facilitate linkages to the appropriate community supports, plan multi-component interventions with young women and provide continuous follow-up.

Because breastfeeding has been identified as a preventive factor for early smoking relapse postpartum (Constantine et al., 2014; Correa et al., 2015; Notley et al., 2015), young women should be offered more comprehensive lactation support in hospital and in the community to encourage exclusive breastfeeding. Breastfeeding and maternal smoking are less detrimental to infant health than bottle-feeding and smoking (Menella et al., 2007; Dorea, 2007). Therefore, even young women who decide to resume smoking postpartum should be encouraged to breastfeed (Giglia, Binns & Alfonso, 2006; Lauria, Lamberti & Grandolfo, 2012). One RCT involving young women of low socioeconomic

status compared a nurse home visitation intervention to usual care and found that the intervention group smoked 50% less cigarettes and were more likely to be breastfeeding at 6 months postpartum (Mejdoubi et al., 2014). Morgan et al. (2015) found professional support individualized to the woman's unique situation was reported as a facilitator for smoking cessation in pregnancy and breastfeeding, most notably when it was confidence-enhancing, consistent, accessible and timely. Therefore, public health nurses and maternity care providers should capitalize on opportunities to promote exclusive breastfeeding and offer more intensive lactation supports postpartum, supporting the transition from hospital to home. Offering lactation and cessation services specifically for young mothers (such as young parent breastfeeding clinics and an intensive home-visitation program delivered by public health nurses) may reduce the risk of relapse and significantly improve maternal, infant and child health outcomes (Mejdoubi et al., 2014).

Lack of appropriate support was identified as a major impediment to maintaining cessation efforts. Solidifying a therapeutic client-provider relationship is an important mechanism through which positive smoking cessation outcomes can be achieved (Marsh, Smith & Bruni, 2011). It is important for public health nurses and maternity care providers to establish an empathic, therapeutic relationship with young women, built on trust and mutual respect, to encourage quitting and facilitate cessation treatment. Young women may benefit from having one-on-one support from an assigned public health nurse, with specialized training in smoking cessation counselling, who can provide cessation support in-person or over the phone from pregnancy throughout postpartum. The Nurse-Family Partnership (NFP) is an evidence-based nurse home visitation



intervention program targeted towards vulnerable families, tailoring service needs for young, low-income, first time mothers (Dmytryshyn et al., 2015; Olds, 2002). The NFP program, which has been implemented and thoroughly evaluated in the United States, (Eckenrode et al., 2010; Kitzman et al., 2000; Olds, 2002; Olds et al., 2002) is currently being evaluated in the Canadian health care system. This program is unique in that it places emphasis on health promotion and prevention and is focused on meeting the complex needs of this underserved and high-priority population of women by providing frequent visitation support in pregnancy and up to two years postpartum (Jack et al., 2015). Within the NFP program, public health nurses follow an intensive schedule of frequent home visiting that comprises up to 14 prenatal home visits and up to 50 home visits during the postpartum period, based on the needs of the mother (Dmytryshyn et al., 2015). The NFP may be a highly effective intervention as it has the potential to attend to the context of young women's smoking behaviour and address the complexity and chronicity of issues that would translate to better health outcomes for mother and baby. Consistent, long-term support from a devoted health professional can enhance the intensity of cessation treatment and improve the continuity of care for optimal outcomes.

### **Implications for Programming**

Several studies have reported on the lack of community-based smoking cessation programs proven effective for pregnant and parenting young women in Ontario (Borland et al., 2013; Bottorff et al., 2014; Greaves et al., 2011). A recent Cochrane systematic review assessing the efficacy of specific interventions on preventing relapse during or after pregnancy found no evidence of benefit for any behavioural or pharmacotherapy

interventions implemented to date (Hajek et al., 2013). Ontario public health units wishing to implement more comprehensive smoking cessation supports must address the broader determinants of health. Rather than using a downstream behavioural approach, an upstream approach employing multi-level strategies that address the social determinants shaping smoking behaviour will have the greatest impact (Borland et al., 2011).

Prenatal classes are an important educational opportunity to provide information to soon-to-be young mothers on the effects of smoking during pregnancy and cessation programs (Al Sahab et al., 2010). Young women's lack of knowledge regarding smoking cessation options during and after pregnancy suggests the need for further health teaching in this area. Because young women are more inclined to attend prenatal classes compared to adult women (Kingston et al., 2012), further discussion regarding adverse smoking-related perinatal outcomes and smoking cessation strategies is needed to address these knowledge gaps. Adolescent and young women prenatal support programs should therefore consider enhancing curriculum on cessation and prevention strategies as well as dedicate more time and resources to providing comprehensive content on smoking and the adverse effects of tobacco use.

Young women endorsed the idea of offering a variety of cessation supports and predominantly encouraged intensive smoking cessation support offered in a group setting. Within this cessation support group they expressed the need for professional and peer support. A recent qualitative study exploring woman-focused smoking cessation programming (Minian et al., 2016) found females felt best supported if they had a choice from a variety of cessation services, allowing their treatment to be individualized to meet

their unique needs. Minian et al. (2016) also found women preferred when educational content was women-specific and when psychosocial support was provided both one-on-one with health care professionals and by peers in support groups. Offering support groups and a variety of programs in specialized smoking cessation clinics and community settings may help to improve treatment options for pregnant and parenting young women.

Young women felt it was very important to protect their children from the harmful effects of smoking, which has also been identified as a key concern for smoking adult mothers (Flemming et al., 2015). According to the findings of a systematic review on parental smoking cessation to protect young children (Rosen et al., 2012), women are most motivated to quit smoking to benefit their children. Cessation interventions should incorporate counselling to quit for the health of their children and take advantage of the motivating function of child welfare to promote cessation and long-term abstinence (Rosen et al., 2012). For young women and their partners not ready or able to quit, education by all possible means to protect their children from smoke exposure, particularly to second-hand smoke, should be a priority.

Program development should address the interpersonal influences on smoking behaviour. Integrating partners and family members into cessation interventions can enhance the potential positive role they could play in supporting women's cessation efforts (Flemming et al., 2015; Morgan et al., 2015). Partners and family members can assist pregnant and parenting women to quit and remain smoke-free through active support and by making positive alterations to their own smoking behaviour (Flemming et al., 2015). Smoking cessation programs can address peer group influences by altering

social norms, facilitating the development of support networks, encouraging positive social influences, and offering peer group mentoring. Young women could be partnered with another young smoker equally determined to quit to offer additional support and encouragement or partnered with a non-smoking peer mentor to encourage building a support network with non-smoking individuals.

The provision of financial and other incentives (such as grocery vouchers, healthy meals, complementary daycare services and transportation incentives) has been identified as a motivational factor to encourage engagement in smoking cessation programs for young women in pregnancy and postpartum, especially those in socially and economically disadvantaged circumstances (Chamberlain et al., 2013; Gamble, Grant & Tsourtos, 2015; Giles et al., 2015). Minian et al. (2016) found women felt best supported by smoking cessation programming when free NRT and pharmacotherapy options were made available to remove monetary barriers to use. Higgins et al. (2012) found offering financial incentives, wherein women receive vouchers exchangeable for retail products contingent on biochemically-verified smoking cessation, to be highly effective in promoting cessation among socioeconomically disadvantaged pregnant and postpartum women, also improving birth outcomes. More recently, Higgins & Solomon (2016) reviewed research published between 2012 and 2015 and found convincing evidence from a series of Cochrane reviews, syntheses and RCTs that supported the efficacy and cost-effectiveness of offering financial incentives to pregnant and postpartum women for sustained smoking cessation.

In order to improve accessibility, cessation programs should be offered in high-

priority neighborhoods with high rates of teen pregnancy, youth smoking and young parents. To reduce barriers that limit access for young women, transportation and childcare services should be provided and quit smoking hotlines should be promoted as a means of enhancing accessibility to services. As noted by Blumenthal (2007), there are substantial advantages to promoting telephone quitlines for low-income populations. The quit smoking hotlines are free, access is not reliant on transportation or childcare services, they provide personalized and private assistance, and they are available 24/7 (Blumenthal, 2007). These characteristics make them accessible to young women. By imparting measures to ensure smoking cessation services and supports are more accessible to pregnant and parenting young women, we can hope to increase their enrollment and continued engagement in these smoking cessation initiatives. It is important to note, however, that the provision of smoking cessation programming alone will not drastically improve young women's smoking cessation rates in pregnancy and postpartum and multi-level interventions are needed in a coordinated effort to actualize change in smoking patterns for this priority population.

### **Considerations for Future Research**

In terms of personal factors influencing smoking behaviour, young women's motivations, beliefs and intentions for deciding to continue, reduce or quit smoking during and after pregnancy have been understudied. Therefore, further inquiries examining how health messages can enhance young women's motivation to quit and remain abstinent can help to inform youth-centered intervention strategies, leading to better maternal, infant and child health outcomes. In addition, studies have yet to explore

in-depth the absence of healthy coping mechanisms among pregnant and parenting adolescent smokers. Studies should examine intervention strategies that incorporate learning of stress reduction strategies and healthy coping mechanisms with these young women. A holistic, multi-pronged approach is needed to tackle the complexity and chronicity of issues that perpetuate pregnant and parenting young women's stress burden. This approach should encompass strategies to address poverty, psychological distress, past history of trauma and lacking social supports. Counselling options that extend beyond smoking cessation should be explored.

With regards to interpersonal influences on smoking behaviour, research studies should trial strategies for integrating young women's partners and family members in smoking cessation interventions for enhanced cessation success and improved family health outcomes. In order to promote positive social influences for smoking cessation and enhance motivation for quitting, early and ongoing professional and peer cessation support may encourage continued abstinence and further study is warranted.

There are also many opportunities to expand and improve on smoking cessation policy, practice and programming to tailor services toward addressing young women's unique needs in pregnancy and postpartum. More research is needed to explore potential avenues for interdisciplinary collaboration within and across sectors and disciplines. This study did not explore the perspectives of maternity care providers on efforts to provide cessation counselling to pregnant and parenting young women. Future studies should explore maternity care providers' opinions on their delivery and effectiveness of smoking cessation counselling as well as their perceived barriers to offering cessation counselling

to pregnant and parenting young women. There is great potential for furthering research in the area of public health nursing intervention strategies for promoting cessation among young pregnant and postpartum women. More research also is needed to determine how prenatal classes can more effectively address smoking during pregnancy, educate on cessation options and facilitate connections to cessation services for pregnant women who smoke.

Lastly, further research is needed to identify how public health policy can address the social determinants that shape smoking behaviour by using an equity-oriented approach to reduce health disparities (Graham et al., 2006a). In order to implement and evaluate the impact of evidence-based cessation interventions for pregnant and parenting young women, future research that explores multi-level strategies to address social disparities that propagate smoking behaviour is needed.

### **Study Strengths and Limitations**

This study is unique in that it explored the contextual factors influencing smoking in pregnancy and postpartum from the perspectives of young women. It also elicited their input on what tailored smoking cessation supports should look like. Study strengths include the use of in-depth interviews and member checking on six of the thirteen cases. A number of strategies were implemented to promote overall trustworthiness, including reflexive journaling, keeping an audit trail, ensuring inter-coder reliability and peer examination by committee members. The varied purposeful sampling strategies used to select information-rich cases provided heterogeneity of experiences. This was a study strength because although there was variation in the young women's stories, many

common themes emerged that emphasized the inter-related, underlying factors influencing their smoking behaviours in pregnancy and postpartum. Findings also reinforced that certain contextual factors, including the cumulative impacts of chronic stress, socioeconomic disadvantage and limited social supports, are stable irrespective of differences in young women's smoking and cessation experiences during and after pregnancy.

The social stigma ascribed to smoking in pregnancy may have caused some women to falsely report their smoking patterns to represent more favorable behaviours, which may have negatively influenced the depth and variability of the data gathered. To reduce social desirability bias and the risk of eliciting normative responses, participants were given the opportunity to participate in a telephone interview. Telephone interviews helped to provide a sense of anonymity, allowing for more open, honest communication (Musselwhite et al., 2007).

The study was limited in that participants were recruited from only a few regions in Ontario. Recruitment from young parent prenatal groups in high-priority neighborhoods resulted in a sample of largely socioeconomically disadvantaged young women. As such, the study findings may not be transferable to young women residing in higher socioeconomic status neighborhoods. Another study limitation is that the participants were predominantly Caucasian. The perceptions and experiences elicited therefore may not reflect the issues faced by young women of different demographic backgrounds. Based on these limitations, study findings should be interpreted with caution if they are to be applied to other populations.



## **Conclusion**

This study captured the complexity of issues influencing young women's smoking behaviour, their experiences with quitting and their perceptions of and attitudes towards cessation supports in pregnancy and postpartum. The study also elicited young women's suggestions for building tailored cessation strategies that would most effectively address their unique needs. The findings from this study will help to inform new directions for developing multi-level cessation interventions, specific to the needs and preferences of pregnant and parenting young women. Implementation of multi-level strategies could maximize the synergies of smoking cessation and prevention efforts for the greatest impact. In order to reduce the high prevalence of smoking among young women before, during and after pregnancy, multifaceted tobacco control measures must be delivered in conjunction with efforts to address the social context in which smoking occurs and the consequential inequalities in health.

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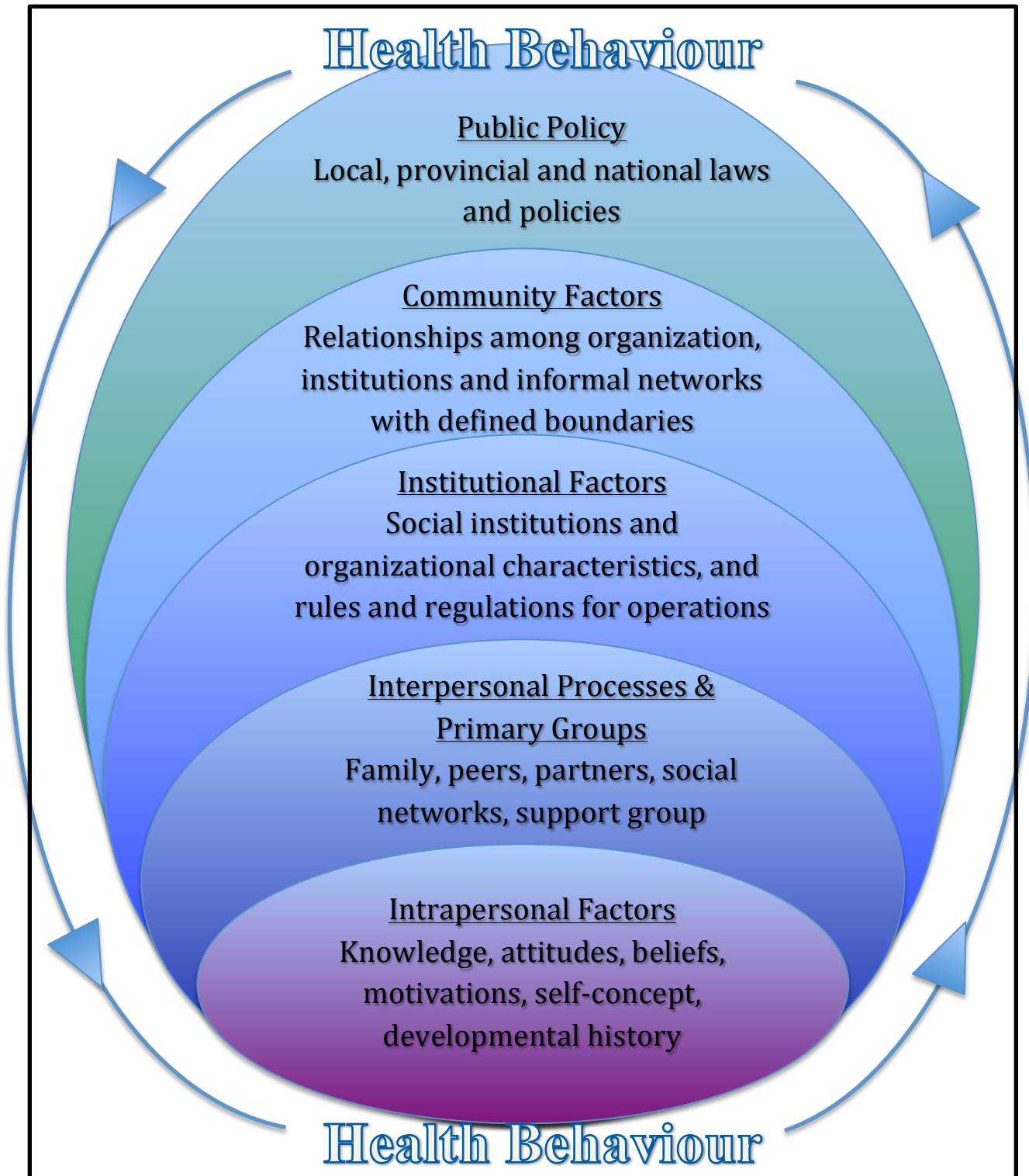
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## Appendix A

### McLeroy's (1988) Social Ecological Model of Health Promotion



## **Appendix B**

### **Telephone Screening Guide**

Hello, my name is Jamie Dawdy. I am a graduate student at McMaster University recruiting pregnant and parenting adolescents and young mothers who smoke for my research study. Thank you for calling to learn more and/or ask to participate in the study. If possible, I would like to ask you a few very quick questions to determine your eligibility to participate in the study.

#### **How did you hear about the study?**

---

#### **Are you pregnant or a parent between the ages of 16-24 years?**

\*If yes, advance to next question

\* If no, provide response: “I am sorry, but I need to speak to young women between these ages for my study. Thank you so much for expressing an interest”

#### **Did you smoke regularly prior to pregnancy (one or more cigarettes/day)? Do you smoke still smoke are you attempting to quit?**

\*If yes, advance to next question

\*If no, provide response: “I am sorry, but I need to speak to young women who smoked prior to pregnancy, continue to smoke or are trying to quit smoking for the study. Thank you so much for expressing your interest in the study”

#### **Would you be interested in participating in an interview that will take anywhere from 30 minutes to an hour to complete either over the phone or in-person?**

\*If yes, advance to final section

\* If no, provide response: “Thank you so much for your call however this is one of the stipulations required for participation in the study and in order to receive the gift card. If you change your mind you are more than welcome to call again at a later date. Thank-you and have a great day”

#### **Final remarks for eligible participants:**

Thank you very much for taking the time to go through some of these questions with me. Based on what you have said you are eligible to participate in the study. Would you prefer the interview to be over the telephone or in-person? (Insert preference here)

Please provide me with your email address so I can send you the study consent form, interview confirmation and a friendly reminder before your interview takes place.  
Email address: \_\_\_\_\_

## Appendix C

### Introductory Letter to Gatekeepers

**Study Title:** An exploration of the personal and contextual factors that influence pregnant and parenting adolescent girls' and young women's decision making regarding their smoking behaviour

**Principle Investigators:** Jamie Dawdy, BScN, MScN (student)

**Institution:** McMaster University

Dear Sir/Madame,

I am a M.Sc. student in the School of Nursing, faculty of Health Sciences at McMaster University, Hamilton, ON, Canada. I am conducting a qualitative study following a interpretive description design to explore the personal, social and contextual factors that influence pregnant/parenting adolescents' and young mothers' decision making regarding their smoking behaviour.

I will be conducting open-ended, semi-structured interviews with pregnant and parenting adolescents and young women between the ages of 16-24 who smoke currently or smoked prior to becoming pregnant. The aim of this qualitative inquiry is to bring to the forefront the challenges and everyday issues these young women face throughout pregnancy and postpartum and begin to understand how these factors/issues relate to their smoking behaviour. The study also aims to identify young mother's attitudes towards and experiences with smoking cessation supports/services in preconception, during pregnancy and postpartum as well as explore their perceived care needs during this emotionally charged time. This research may inspire more holistic, comprehensive smoking cessation support for this population.

I am inviting you to consider a potential collaboration in this study, providing study information to young women you encounter in practice that meet the eligibility criteria: pregnant or parenting mother (up to 2 years postpartum) between the ages of 16-24 years who smoke currently or smoked prior to becoming pregnant. It is not an obligation to assist with recruitment for this study, but if you are interested in being involved, I will provide you a detailed information letter on the study and, if you like, determine a meeting date to answer any questions you may have. With your involvement and partnership, we will reach out to potential participants to ask if they would be interested in participating. Your collaboration and assistance in promoting this study is completely voluntary.

This project was reviewed and received ethics approval from the Hamilton Integrated Research Ethics Board. Should you have any questions or concerns about the involvement of participants in the study, please do not hesitate to contact the Office of the Chair of the HHS/FHS Research Ethics Board at 905-521-2100.

Thank you for considering whether you would like to offer assistance with the study, by helping to access potential participants. I appreciate your time in reading this letter and hope that you consider collaborating with us by promoting the study with the young moms you work with. I look forward to engaging in further discussion with you regarding this project in the near future.

Sincerely,  
*Jamie Dawdy*

Jamie Dawdy, BScN, MScN (student)



**Appendix D**  
**Promotional Poster for Study**



## Pregnant & Parenting Young Mother's Smoking Study

### ARE YOU?

- ❖ A pregnant or parenting young woman between 16-24 years old
- ❖ Do you smoke NOW or did you BEFORE you were pregnant?

If so, you may be eligible to participate in this study!!

Please contact  
Jamie Dawdy  
905-616-0541



Find us on  
**Facebook**



Receive a  
**FREE**  
Gift card



Contact: Jamie  
Dawdyj@mcmaster.ca]

Contact: Jamie  
dawdyj@mcmaster.ca

Contact: Jamie  
dawdyj@mcmaster.ca

Contact: Jamie  
dawdyj@mcmaster.ca

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dawdyj@mcmaster.ca

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dawdyj@mcmaster.ca

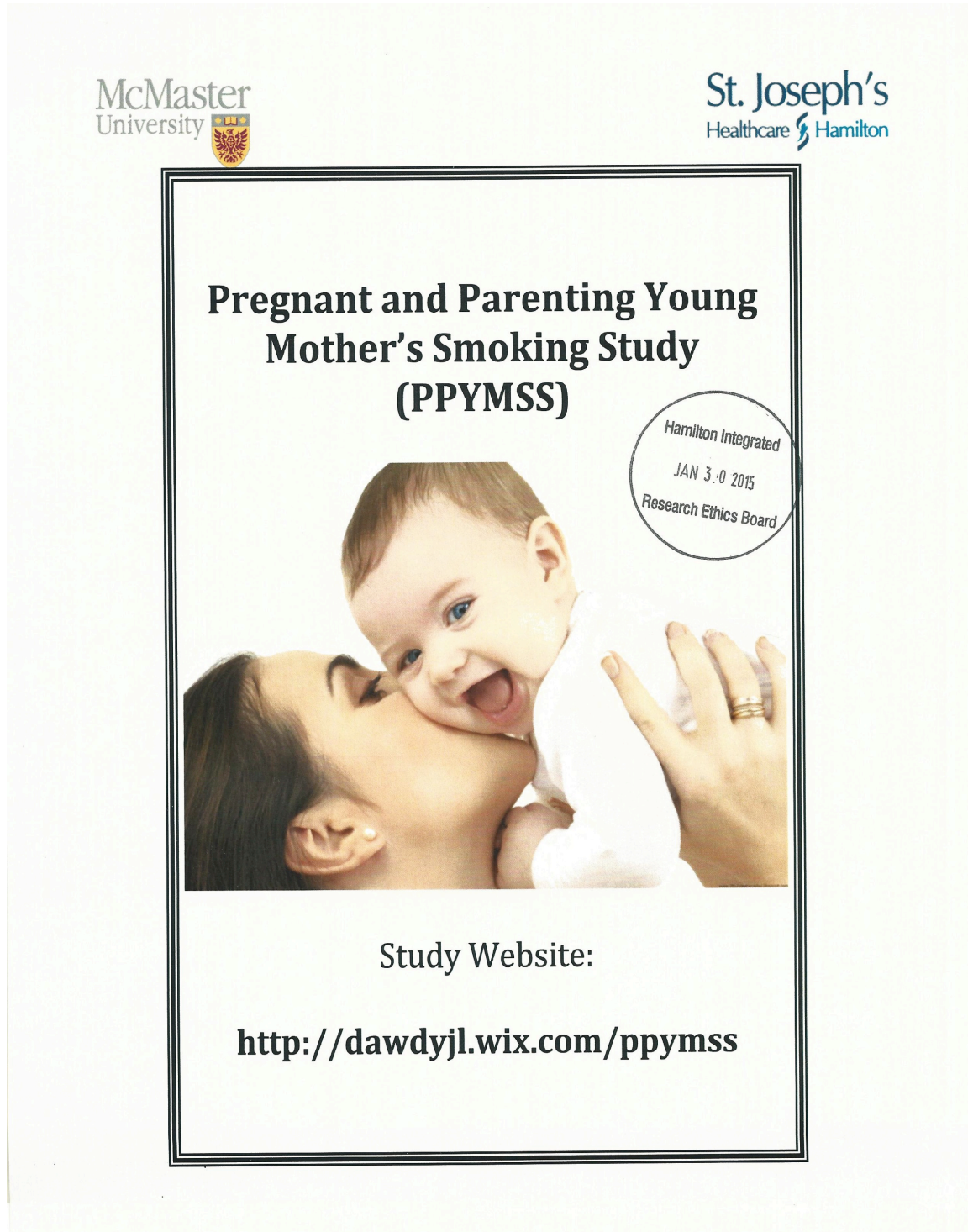
Contact: Jamie  
dawdyj@mcmaster.ca

Contact: Jamie  
dawdyj@mcmaster.ca

Contact: Jamie  
dawdyj@mcmaster.ca

Contact: Jamie  
dawdyj@mcmaster.ca

**Appendix E**  
**Study Website Poster**





Appendix F  
Study Brochure

### ARE YOU?

- A young woman between the ages of 16-24
- Pregnant or up to 2 years postpartum
- Do you smoke NOW or did you smoke BEFORE you were pregnant

If your answer is YES to these questions, Please join our study!!!



**For More Information**  
Please Contact:  
Jamie Dawdy  
905-616-0541  
dawdyjl@mcmaster.ca

Find us on  
**f Facebook**

Hamilton Integrated  
Research Ethics Board  
Jan 3 0 2015

**McMaster University**



### Pregnant & Parenting Young Mother's Smoking Study





### Young Mother's Smoking Study

A research study exploring the factors that influence young mother's smoking behaviours in pregnancy and postpartum



### WE WANT TO KNOW:

- The factors that influence your smoking behavior
- Your attitudes towards & experiences with local 'Quit Smoking' services offered before, during and after pregnancy



### WHAT WE NEED FROM YOU:

- Your current contact information
- Signed consent to join the study
- A scheduled time to complete an interview with you in-person or over the telephone



### YOU WILL GET:

- Your choice of a FREE grocery or Shopper's Drug Mart Gift Card:



FREE GIFT CARD

A RESEARCH STUDY



**Appendix G**  
**Study Logo**



## Appendix H

### Consent to be Contacted Form



### Consent to be Contacted Form

**Study:** An exploration of the factors influencing pregnant and parenting young women's decision-making regarding their smoking behavior ("Pregnant & Parenting Young Mother's Smoking Study") (PPYMSS)

The 'Pregnant and Parenting Young Mother's Smoking Study', examines factors that influence pregnant and parenting young women's smoking behavior in pregnancy and postpartum. The study also explores young women's attitudes towards and experiences with community supports and services designed to help pregnant and postpartum women reduce or quit smoking.

You are being invited to join this study because you are:

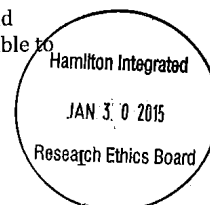
1. Between the ages of 16-24 years
2. Are currently pregnant or up to 2 years postpartum (24 months after birth)
3. Smoked cigarettes regularly prior to pregnancy (at least one cigarette/day)

In this study you will be asked to complete an interview (by telephone or in-person) lasting roughly 30 minutes to an hour. During this interview you will be asked to tell us about your smoking behaviours prior to pregnancy, during pregnancy and if applicable, after your pregnancy. We will discuss the factors that influence your smoking behavior and your personal experiences trying to reduce or quit smoking after becoming pregnant. We will also discuss how you think young women, such as yourself, could be helped in their efforts to quit smoking. At the end of the interview you will be asked to complete a short questionnaire asking about individual and family characteristics to help us describe our study sample. You will be asked for consent to be re-contacted for additional research purposes (such as the option to complete a second interview and to receive a summary of study findings, if you so wish).

If you choose to participate, the researcher will contact you to schedule an interview at a date and time that is most convenient for you. You will be able to choose if you would rather a telephone interview or an in-person interview in which you will be visited at a pre-arranged, safe and private location to complete the interview. All information collected during the interviews and throughout the questionnaire is strictly confidential.

As a thank-you for your participation in the interview, you will receive a \$15.00 gift card for Shopper's Drug Mart or President's Choice gift card, as per your preference. An additional \$5.00 will be added to your gift card value for agreeing to participate in a second shorter interview (roughly 30 minutes) to confirm themes and preliminary study findings. In addition, information about local supports and services that can help you in your effort to quit smoking will be made available to you.

Version 2: 26/01/2015



If you do not wish to participate in the study or if you wish to stop participating at any time, you are free to do so without any consequence. Signing this form does not indicate you are consenting to participate in the study, it merely allows the researcher to contact you at a later date to determine if you would be interested.

Thank you so much for your time. If you have any questions or would like more information about the study please feel free to contact the researcher, Jamie Dawdy, at 905-616-0541. We look forward to speaking with you in the near future!

---

**I have read the above description and I am interested in being contacted about the study.**

**Print Name:** \_\_\_\_\_

**Birth Date (yy/mm/dd):** \_\_\_\_\_

**Email Address:** \_\_\_\_\_

**Phone Number(s): (Home)** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

**(Cell)** \_\_\_\_\_ - \_\_\_\_\_ - \_\_\_\_\_

**Today's Date:** \_\_\_\_\_

**Signature:** \_\_\_\_\_

**Please return this form to researcher, Jamie Dawdy, by putting the form in one of the provided opaque, sealed envelopes and place in designated drop box on Unit for pick up. Please call 905-616-0541 or email ([dawdyjl@mcmaster.ca](mailto:dawdyjl@mcmaster.ca)) to advise of drop-off of this 'Consent to be Contacted Form'.**



## Appendix I

### Consent Form



#### LETTER OF INFORMATION / CONSENT

**An interpretive descriptive study of the personal and contextual factors that influence pregnant and parenting adolescent girls' and young women's decision making regarding their smoking behaviour**

#### Investigators:

##### Local Principal Investigator:

Dr. Wendy Sword  
Department of Nursing  
McMaster University  
Hamilton, Ontario, Canada  
E-mail: sword@mcmaster.ca

##### Student Investigator:

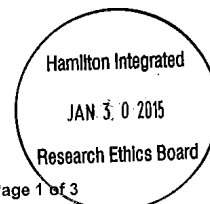
Jamie Dawdy  
Department of Nursing  
McMaster University  
Burlington, Ontario, Canada  
(905) 616-0541  
E-mail: dawdyjl@mcmaster.ca

#### Purpose of the Study

The purpose of this study is to explore the factors that influence pregnant and parenting young women's decision-making regarding their smoking behaviour. The findings of this study will help to inform young women, maternity care providers, and health professionals of the factors and circumstances that influence smoking habits and the types of community supports needed to shape positive behavioural changes before, during and after pregnancy. This information will be used to develop more effective programs and services to help pregnant and parenting young women in their efforts to reduce or quit smoking.

#### What You Will Be Asked to Do in the Study

- If you decide to participate in the study, you will be asked to take part in a ½ to one hour interview in-person or by telephone as per your preference
- During the interview, you will be asked to describe your smoking behaviour before pregnancy as well as during and/or after pregnancy (depending on if the interview is conducted during your pregnancy or in the post-partum period). You will also be asked to discuss the factors that influenced your smoking behaviour in pregnancy and/or postpartum.
- For the purposes of describing the study sample, you will be asked questions about socio-demographic, individual and family characteristics
- You may continue your participation in the study even if you choose not to answer all of the questions asked during the interview
- Your interview will be digitally recorded and transcribed verbatim (typed out).
- You will receive a \$15 gift card to thank you for your participation in the study.
- If you consent to a second contact you will be asked to engage in a brief telephone interview to verify the description and the researchers interpretation of the common elements and key themes that has been gathered from the data.
- You will receive an additional \$5 gift card to thank you for your participation in a secondary interview to confirm main ideas and themes presenting in the interviews. You will therefore have received a total of \$20 in gift cards.



**Are there any risks to doing this study?**

You will be discussing the factors that influenced your smoking behaviour in pregnancy and postpartum. This may involve self-reflection and critical thinking as to how different situations and life circumstances may impact your smoking habits in either a positive or negative way. There are no foreseeable risks to participating in the study however some participants may feel embarrassed or ashamed to disclose their smoking habits while pregnant and/or feel as though they will be unfairly judged by people conducting the interview. This is not the intent of the study. You will be reassured at the outset of the interview that you can speak openly and free of any form of judgement. The goal of this study is to determine how care providers can best help young mothers, such as yourself, to make positive changes to their smoking behaviour throughout pregnancy and postpartum in order to benefit the health of both the mother and baby. If you request help in changing your smoking behaviour throughout the interview, you will be provided with a list of supports and services to help you quit smoking that are available locally. If you feel uncomfortable at any time, the interview can be terminated early and you can end your voluntary participation in the study without any questioning.

You do not need to answer questions that you do not want to answer or that make you feel uncomfortable. I describe below the steps I am taking to protect your privacy.

**Are there any benefits to doing this study?**

You may not experience any direct benefits from participating in the study, however, the study findings may help to improve community 'Quit Smoking' services and supports provided to pregnant and parenting young women who smoke. We hope from this experience you will learn more about the factors and circumstances that influence your smoking behaviour, learn more about the 'Quit Smoking' supports that are available locally and gain a deeper understanding of the types of supports and services that would be most helpful to you in your efforts to reduce or quit smoking.

**Voluntary Participation and Withdrawal**

Your participation in the study is completely voluntary and you may choose to end your participation at any time with no consequence of any kind. Should you choose not to volunteer to participate in the study, your decision will not influence any relationships you may have with the researcher, study staff, McMaster University or any health care providers promoting the study. You can choose to end your participation in the study at any time, for any reason. Your decision to end participation or refuse to answer particular questions will not affect your relationship with the researcher or any other group associated with this project. You have the option of removing your data from the study OR information provided up to the point where you withdraw will be kept unless you request that it be removed. If you do not want to answer some of the questions you do not have to, but you can still be in the study. If at any time you choose to withdraw from the study, all data collected that you wish to be removed will be immediately destroyed and not included in the study.

**Confidentiality**

You are participating in this study confidentially. I will not use your name or any information that would allow you to be identified. No one other than myself (and other select members of the research team) will know whether you participated in the study unless you choose to tell them. As well, all of the information you supply during this research investigation will be held in confidence. Your name will not appear in any report or publication of the research. Interviews will be digitally recorded and transcribed (typed out). Your information will be safely stored in a locked cabinet and/or on a secure password protected computer that only select members of the research team can access. Once the study is complete, an archive of the data, without identifying information, will be kept for up to 5 years and deposited on a secure University computer. After 5 years this information will be destroyed. Confidentiality will be provided to the fullest extent possible by law. Although I will protect your privacy as outlined above, if the law requires it, I will have to reveal certain personal information (e.g., child abuse, harm to oneself or others).

### Information about the Study Results

I expect to have this study completed by approximately *August, 2015*. If you would like a brief summary of the results, please let me know how you would like it sent to you at the end of the interview.

### Questions about the Study

If you have questions or need more information about the study itself, please contact me at: [dawdyjl@mcmaster.ca](mailto:dawdyjl@mcmaster.ca), or by telephone 905-616-0541.

This study has been reviewed by the Hamilton Integrated Research Ethics Board (HIREB). The HIREB is responsible for ensuring that participants are informed of the risks associated with the research, and that participants are free to decide if participation is right for them. If you have any questions about your rights as a research participant, please call the Office of the Chair, HIREB at 905.521.2100 x 42013.

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### CONSENT

I have read the information presented in the information letter about a study being conducted by Jamie Dawdy, of McMaster University.

I have had the opportunity to ask questions about my involvement in this study and to receive additional details I requested.

I understand that if I agree to participate in this study, I may withdraw from the study at any time. I have been given a signed copy of this form. I agree to participate in the study.

1. I agree to participate in an interview that is audio recorded.      Yes      No

2. I would like to receive a summary of the study's results.      Yes      No

If yes, where would you like the results sent:

Email: \_\_\_\_\_

Mailing address: \_\_\_\_\_

\_\_\_\_\_

Please contact me at: \_\_\_\_\_

---

Name of Participant (Printed)

Signature

Date

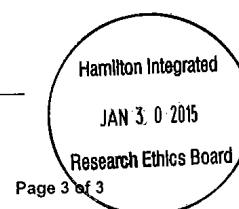
Consent form explained in person by:

Name and Role (Printed)

Signature

Date

Version #\_2\_ - Version Date: January 26<sup>th</sup>, 2015



## **Appendix J**

### **Study Information Posted on Website and Facebook Page**

#### **Pregnant and Parenting Young Mother's Smoking Study (PPYMS)**

Smoking during pregnancy and postpartum poses numerous health risks to both the woman and fetus. There are countless benefits to quitting smoking any time during pregnancy and in the postpartum period. A recent systematic review of the literature had found that more than half of all women who smoke do not quit during pregnancy (Schneider et al, 2010). This study aims to explore some of the challenges to quitting smoking in pregnancy and postpartum for young women and gain a deeper understanding of the smoking cessation supports and services that are needed to make quitting smoking an easier option.

We are interested in talking to pregnant and parenting young women between the ages of 16-24 years, who smoked regularly (at least one cigarette/day) prior to pregnancy, about the factors they consider when making decisions regarding their smoking behaviour in pregnancy and/or postpartum.

Your participation would involve a 30-60 minute interview in-person or over the telephone (as per your preference) with the researcher. A FREE \$15.00 gift card for Shopper's Drug Mart will be provided to thank you for your time. If you would like to participate in a second interview (30 minutes or less) to validate themes and preliminary findings in the study, you will receive an addition \$5 value added to your gift card (total of \$20.00).

If you would like more information about the study, or if you are interested in participating, please contact the researcher, Jamie Dawdy, School of Nursing, McMaster University, by email at [dawdyjl@mcmaster.ca](mailto:dawdyjl@mcmaster.ca) or by phone at (905) 616-0541.

Thank you for your interest in this very important research study!

#### **Reference:**

Schneider, S., Huy, C., Schutz, J. & Diehl, K. (2010). Smoking cessation during pregnancy: A systematic literature review. *Drug and Alcohol Review*, 29, 81-90.

#### **Questions about the Research?**

##### **Please contact:**

Jamie Dawdy (Student Researcher)  
[Dawdyjl@mcmaster.ca](mailto:Dawdyjl@mcmaster.ca)  
905-616-0541

Dr. Wendy Sword (Supervisor)  
[sword@mcmaster.ca](mailto:sword@mcmaster.ca)

## Appendix K

### Interview Questions

#### Interview Discussion Points Based on Social Ecological Model

##### **Personal or Intrapersonal Factors**

**Knowledge:** Tell me about your history of smoking. (Probing: When did you first start smoking? Why did you start smoking? What do you think are some of the reasons that you started smoking? What do you think are the reasons you continue to smoke? How often do you smoke now?)

What triggers you to want to have a smoke? What helps relieve your cravings to have a cigarette? (Probing: Are there any situations or circumstances in which you feel you need to have a smoke? What activities do you do to stop you from smoking? How do you usually feel in those moments when you are craving a cigarette? How do you feel immediately after smoking? What is the longest time you have gone without smoking a cigarette)

When you found out you were pregnant, did it make you feel any different about smoking? (Probing: Did becoming pregnant influence or change your smoking behaviours in any way? Was your pregnancy planned? How did becoming pregnant change your day-to-day routine?)

**Perceptions:** What do you think are some of the risks to smoking in pregnancy for you and your baby? (Probing: What about the risks to your baby once/after your baby is/was born? What do you think are some of the risks of second hand smoke to babies/children? What are some ways to reduce the risk of second hand smoke? Do/did you plan on breastfeeding? What have you heard about smoking and breastfeeding?)

What do you know of the supports and services available to help young mothers quit smoking? Are there any that you have tried?

**Attitudes:** What do you think about the idea of quitting smoking? (Probing: Do you think quitting smoking is a possibility for you now or in the future? What would need to happen for you to feel ready to quit?)

How do you feel toward the quit smoking services and supports available around you? (Probing: Do you think any are/would be helpful to you? Why do you think some young mothers may have trouble accessing some of these quit smoking services?)

**Benefits:** What do you think would some of the benefits to quitting smoking for yourself and your baby?

**Barriers:** What are some of your daily challenges or life stresses? What barriers or challenges do you face in trying to change your smoking habits? What barriers do you face trying to access quit smoking supports within your community?

What do you think would help remove the barriers that young mothers face when trying to reduce or quit smoking? What do you think would motivate you to quit smoking? Who (HCPS, friends, family) would best help you quit smoking?



Do you have any personal stresses or financial pressures? (Probing: Do you seek financial aid? Do you have any personal or health challenges that you would like to share? Do you think these are common experiences/challenges for young mothers?)

### **Interpersonal Influences**

How do other people (e.g., health care providers, spouse/partner, family, friends and workplace interactions) influence your smoking behaviour? (Probing: Do you feel more influenced by family or friend groups? Does your partner or significant other influence your smoking behaviour? How do other people influence your decision to either continue or quit smoking in pregnancy and/or postpartum?)

How do other people make you feel about smoking in pregnancy or as a parent? (Probing: Do you feel any pressure to either continue or quit smoking by anyone (e.g., family, friends, teachers, care providers? Do you feel you would be supported in your efforts to reduce or quit smoking, if and when you decided to? Who would be most supportive?)

### **Organizational/institutional Factors**

Does your school or work environment influence your smoking patterns? (Church? Gym?) Since becoming pregnant has any health programs or services in health care facilities influenced your decision to continue, reduce or quit smoking in pregnancy and/or postpartum?

Has any health care providers offered you any information or advice about smoking cessation? (Probing: Has any community or maternity care providers offered information or support to you in quitting smoking? Do you value their advice or suggestions?)

Has any health care providers made referrals for you or in some way impacted your smoking behaviour? Who would you prefer to receive smoking cessation information from (community providers, family doctor, OB, maternity nurses?)

### **Community**

How, if at all, did the community you grew up in influence the age you started smoking? How does the community you live in now influence your smoking behaviours? (Probing: Do you think there are certain people within your community are more likely to smoke than others? What factors and life circumstances do you think would make someone more likely to smoke?)

How do social norms affect your decisions about smoking in pregnancy and/or postpartum? (Probing: Do you ever feel as though you are being judged by others?)

Please describe to me any “Quit Smoking” supports or services available to you or any that you are aware of. (Probing: Do you think there is adequate support within the community to help young mothers in changing their smoking behaviours in pregnancy and/or postpartum? Can you list some of the local services and supports that aid in quitting smoking? Would you/have you accessed any of these resources/supports/services? Do you plan to?)

### **Public Policy**

As of January 2015, the Smoke-Free Ontario Act has made it illegal to smoke:

1) On and around children’s playgrounds and publicly owned sport fields and surfaces (e.g., areas for basketball, baseball, soccer or beach volleyball, ice rinks, tennis courts, splash pads and

swimming pools that are owned by a municipality, the province or a postsecondary education institution)

2) Smoke on all bar and restaurant patios, whether covered or not

3) Sell tobacco on university and college campuses (this applies to buildings that are owned and areas that are leased by a postsecondary institution or student union). It is also against the law to buy, sell or give a person under 19 any tobacco products, and stores are not allowed to display tobacco products in public view

How do these policies and laws on smoking influence your smoking behaviour? Do you think laws and policies on smoking are helpful or harmful in impacting an individuals smoking behaviour?

The Smoke-Free Ontario Act prohibits smoking in in motor vehicles when children under 16 are present. How do you feel towards this law?

Do you think there should be any policies or laws around smoking in pregnancy or smoking as parents? (Probing: Do you think mothers should have to take online courses to educate them of the effects of smoking in pregnancy and postpartum or go to group programs to help them try to reduce or quit smoking in pregnancy/postpartum? Do you think parents and parents-to-be should be encouraged to access quit smoking supports and services? Do you think any quit smoking supports or services should be mandatory for smoking parents/ parents-to-be?)

### **Closing Questions**

What things do you think would be most helpful in helping a young mother such as yourself, feel ready and capable of quitting smoking? (Probing: If you could develop a program or service for young mothers what would it look like? what type of quit smoking program or service do you think would be most beneficial to young mothers and why? What do you think HCPs could do to better support pregnant and parenting moms in their efforts to reduce or quit smoking?)

**Thank you so much for participating in this interview! Would you like me to send you a list of local programs and services available to young mothers to aid in efforts to reduce or quit smoking?**

## **Appendix L**

### **Demographic Questions for Participants**

This form is designed to collect information about you. This information will be kept confidential. The purpose of collecting this information is to allow the researcher to describe the characteristics of the teens and young women who participate in the study. This information will be used only in a collective way and your name will not be identified.

**Please check the appropriate box in the questions listed below:**

**What region of Ontario do you live in?**

- ☐ Hamilton-Wentworth
- ☐ Halton
- ☐ Peel
- ☐ Other: \_\_\_\_\_

**Birthdate:** \_\_\_\_/\_\_\_\_/\_\_\_\_.    **Age:** \_\_\_\_  
                    Day/month/year

**Are you pregnant or postpartum? Circle:    Pregnant        OR        Postpartum**

**If pregnant, how many weeks?** \_\_\_\_\_

**If postpartum, how old is your baby now?** \_\_\_\_\_

**Do you have any other Children? (How old?)**

\_\_\_\_\_

**What is your relationship status?**

- ☐ Married
- ☐ Common-Law
- ☐ Living with a partner
- ☐ In a relationship but not living together
- ☐ Single (never married)
- ☐ Widowed
- ☐ Divorced/separated

**What language do you speak most often at home?** \_\_\_\_\_

**What is your *best estimate* of the total income, before taxes and deductions, of *all* household members from all sources in the past 12 months?**

(fill in **ONE** circle only)

- ☐ No income
- ☐ Under \$10,000
- ☐ \$10,000 – 19,999
- ☐ \$20,000 – 39,999
- ☐ \$40,000 – 59,999

- \$60,000 – 79,999
- Over \$80,000

**Are you receiving any financial assistance such as Ontario Works or Ontario Disability Support Program? Circle: Yes or No**

**What is your highest level of education?**

- Elementary school or less
- Some high school
- Completed high school
- Some community college or technical school
- Completed community college or technical school
- Some university
- Completed bachelor's degree
- Graduate degree

**What is your current employment status?**

- Employed full-time
- Employed part-time
- Casual employment
- Looking for employment opportunities
- Unemployed

**Do you now smoke: daily, occasionally or never?**

Circle: Daily Occasionally Never

**Have you had at least 100 cigarettes in your life? Circle: Yes or No**

**How old were you when you smoked your first cigarette? \_\_\_\_\_ years**

**At what age did you start smoking daily? \_\_\_\_\_ years**

**How many years have you smoked cigarettes? \_\_\_\_\_**

**Where do you most often buy/get cigarettes?**

- Grocery store/ convenience store
- Gas station
- From a family member or friend
- Other (please specify): \_\_\_\_\_

**What was the main reason you began smoking?**

\_\_\_\_\_  
\_\_\_\_\_

**How many cigarettes did you smoke daily *prior to becoming pregnant*? \_\_\_\_\_**

**How many cigarettes do you usually smoke daily *during pregnancy*? \_\_\_\_\_**

**If applicable, how many cigarettes did you smoke *after the birth of your baby*?**

\_\_\_\_\_

**Did/do you plan on breastfeeding your baby? Circle: Yes or No**

**Why?** \_\_\_\_\_

**If this is not your first pregnancy, did you smoke during any previous pregnancies? Circle:  
Yes or No**

**Did your smoking habits change once you found out you were pregnant? If so, how?**

\_\_\_\_\_  
\_\_\_\_\_

**Did you seek out any smoking cessation supports/services in the community? (Please explain)**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**What is the number of people that live in your household? \_\_\_\_\_**

**How many people smoke in your household? \_\_\_\_\_**

**How many household members smoke inside the home? \_\_\_\_\_**

**Have you quit smoking? Circle: Yes or No**

**IF YES:**

**When did you stop smoking? For how long?**

\_\_\_\_\_

**How many quit attempts had you made before you stopped smoking?**

\_\_\_\_\_

**What was your main reason for quitting smoking?**

\_\_\_\_\_

**What was the average number of the cigarettes you smoked before you quit smoking? \_\_\_\_\_**

**IF NO:**

**Have you ever tried to quit smoking? Circle: Yes or No**

**Why?** \_\_\_\_\_

\_\_\_\_\_

**Are you considering quitting in the next 6 months?** Circle: Yes or No  
**Why?** \_\_\_\_\_

**Are you considering quitting in the next 30 days?** Circle: Yes or No  
**Why?** \_\_\_\_\_

**If a young mom were trying to quit smoking, what types of smoking cessation support would you recommend her to try?**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Would you like help in changing your smoking behaviour? If YES, would you like me to provide you with a list of smoking cessation supports and services available locally? How would you like me to send you this information?**

\_\_\_\_\_  
\_\_\_\_\_

#### **Contact Information**

**Please fill in your contact information. This information will be kept separate from the information collected in the interview and in the demographics questionnaire. Your contact information will be used to mail you the gift certificate in appreciation for your contribution to the study and a summary of our study findings.**

**Name:** \_\_\_\_\_

**Home Phone Number:** \_\_\_\_\_

**Cell Phone Number:** \_\_\_\_\_

**Email:** \_\_\_\_\_

**Mailing Address:**

\_\_\_\_\_  
\_\_\_\_\_

**THANK YOU** for taking the time to fill in this important questionnaire.