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POSTPARTUM SMOKING RELAPSE: QUALITATIVE RESEARCH TO
UNDERSTAND THE ROLE OF THE SOCIAL ENVIRONMENT

A Thesis Submitted to the
Yale University School of Medicine
In Partial Fulfillment of the Requirements for the
Degree of Doctor of Medicine

By
Stephanie Ngoc Tu Nguyen

2010

POSTPARTUM SMOKING RELAPSE: QUALITATIVE RESEARCH TO UNDERSTAND THE ROLE OF THE SOCIAL ENVIRONMENT. Stephanie N. Nguyen, Isabelle Von Kohorn, Dena Schulman-Green, and Eve R. Colson. Department of Pediatrics, Yale University, School of Medicine, New Haven, CT.

While up to 45% of women quit smoking during pregnancy, nearly 80% return to smoking within a year after delivery. Current interventions to prevent this return have had limited success. The aim of this study was to use the Theory of Planned Behavior to understand the factors influencing intention to resume smoking postpartum, specifically focusing on the role of subjective norms, or the social environment. During the postpartum hospital stay, we conducted in-depth, individual interviews with 24 women who had quit smoking during pregnancy. Over 300 pages of transcripts were analyzed by all four investigators using qualitative methods to identify common themes facilitated by Atlas.ti software. Respondents were predominately white (63%) and primipara (54%) with a mean age of 26. When reflecting on their experiences of being a smoker, the women emphasized the importance of their social relationships. Common themes were: 1) virtually all were embedded in large, complex social networks of smokers (partners, family, friends, co-workers) that influenced their smoking behavior, 2) the subjective norm (the perceived social pressure) for many women was that, while smoking during pregnancy is unacceptable, smoking after pregnancy is tolerable, and 3) partners were particularly influential on these women's smoking behaviors. In conclusion, we found that social environment played a large role in these women's past smoking behavior and future intentions. Thus, this factor may continue to influence their behavior after pregnancy. Further research is needed to establish the generalizability of these findings; however, our study suggests that the influence of the social environment should be integrated into postpartum smoking interventions.

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Stephanie Ngoc Tu Nguyen

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Introduction

Pregnancy offers a unique opportunity for smoking cessation. The most recent epidemiological data indicates that 17.4% of women in the United States smoke cigarettes.¹ Incredibly, between 20-45% of women who smoke will spontaneously quit during pregnancy.² These women cite numerous reasons for quitting, including morning sickness, social pressures, positive support, guilt, baby's health, personal health reasons, and advice from a healthcare provider.³

Unfortunately, two in three women return to smoking within six months after delivery and nearly 80% relapse by one year.⁴ One study found that these women quit smoking an average of 33 weeks before relapsing.⁵ However, this high postpartum relapse rate is more similar to the relapse rates of recent quitters than of individuals who have quit for over seven months.⁶ In the general population, the relapse rate is highest within the first three months of a quit attempt. Similarly, the average length to relapse following delivery is between 2 to 12 weeks.⁶⁻⁹ Thus, the situations and changes that women experience surrounding pregnancy and the postpartum period are unique and different from other smoking cessation attempts.⁶ While researchers are still discovering what makes this period unique, what is clear is that parental smoking is associated with many negative health outcomes for infants and children.

The effects of environmental tobacco smoke on the health of infants and children

Since the first report in 1967, numerous studies have established the adverse infant and child health outcomes associated with secondhand smoke (SHS), also known as environmental tobacco smoke (ETS).¹⁰ It has been estimated that 40 million children

are exposed to SHS, occurring primarily in the home with the new laws restricting smoking in public places. One recent study using data from the 2003-2006 National Health and Nutrition Examination Survey (NHANES) found that 17.8% of children and adolescents were exposed to SHS in the home.¹¹ These children had 20 times higher serum cotinine^a levels compared to those children with no documented home SHS exposure.

Studies link SHS to increased incidence of asthma, allergies, bronchitis, bronchiolitis, pneumonia, decreased pulmonary function, snoring, tonsillitis, otitis media, greater rates of hospitalization, and increased duration of illness compared to unexposed children.^{10, 12-14} SHS not only increases prevalence of childhood asthma, but also increases severity of the asthma, as it is associated with increased frequency of attacks, emergency department visits, and risk of intubation.¹⁰ This multitude of infections and inflammatory reactions reflect how nicotine modulates the immune system via: 1) impairment of neutrophil and monocyte phagocytic function, 2) simultaneous suppression of Th1 and stimulation of Th2 cell function, and 3) damage to mucocilliary epithelium causing enhanced bacteria adherence to mucosal cells.¹³ Many studies also suggest that prenatal and postnatal smoke exposure is associated with increased cognitive impairments and behavioral problems (such as irritability and hypertonicity in infancy and ADHD and conduct disorder later in life).¹⁵ Finally, multiple researchers examining the risk of sudden infant death syndrome (SIDS) have found a direct relationship with increased SHS exposure, even independent of prenatal smoking status.¹⁶

^a Cotinine is the metabolized derivative of absorbed nicotine and is a marker for smoke exposure. Levels can be measured from plasma, urine, saliva, or hair samples.^{12,13}

It is also important to note that many mothers who smoke report they only smoke outdoors in an attempt to minimize exposing their children to SHS. However, Groner and colleagues found that hair cotinine concentrations were no different between children of mothers who were self-reported “indoor” vs. “outdoor” smokers.^{12,17} The lowest levels of hair cotinine concentration were found in children of self-reported non-smoking mothers in homes where others were not allowed to smoke. Thus, complete abstinence from smoking offers the best protection against the harms of tobacco smoke exposure.

Furthermore, a new concept of thirdhand smoke has recently emerged in the literature. Thirdhand smoke is defined as “the residual tobacco smoke contamination that remains after the cigarette is extinguished.”¹⁸ Even after active smoking has ceased, toxins from cigarette smoke can be deposited as a layer on to household surfaces and clothes. These toxins can then remain for days to months. According to Winickoff et al., infants and toddlers are particularly susceptible to the effects of thirdhand smoke as they spend more time crawling, touching, and playing on exposed surfaces and have more hand-mouth behavior.¹⁸ In their random sampling of almost 1500 adults across the country, nearly all (93%) believed that secondhand smoke had harmful effects on children. However, only 61% of adults surveyed believed in the harmful effects of thirdhand smoke.

Because of the many adverse health outcomes in children from SHS exposure, the postpartum period is a decisive time for parental smoking cessation interventions. Furthermore, the health effects from SHS exposure appear to be particularly severe during infancy.^{10,14,19} A Hong Kong study found that baseline SHS exposure in children was associated with increased risk of having a hospital admission for an infectious

illness.¹⁹ The greatest risk was found during the first six months of life. The authors proposed that this critical window reflects the increased duration and intensity of time infants spend with their parents.^{10, 12} Thus, even extending time before maternal smoking relapse has potential health benefits for infants.

Predictors of postpartum smoking relapse

As mentioned earlier, postpartum relapse rates are unfortunately very high despite the long period of smoking abstinence during pregnancy. The postpartum period is clearly a unique time when women are particularly vulnerable to relapse. To gain a better understanding of this issue, researchers have focused on identifying risk factors or predictors for relapse. These include: sociodemographic characteristics, factors surrounding the pregnancy, concerns about weight, nicotine dependence, depression, poor social support, partner and family smoking status, bottle feeding, low self-efficacy, and greater impulsivity.

In terms of sociodemographic characteristics, mothers who are younger, less educated, and Medicaid-insured have higher rates of postpartum relapse.²⁰⁻²² These characteristics mirror the general population of smokers, in whom lower socioeconomic status (SES)^b is associated with less smoking cessation success and a higher prevalence of smoking.²¹ One study examined young mothers between 18-24 years old and found that low subjective SES was associated with numerous other predictors of postpartum relapse, such as increased tobacco dependence, increased temptations to smoke, lower confidence, and less social support.²¹ Race/ethnicity has a less clear relationship with

^b Socioeconomic status (SES) is a measure of social standing, as typically determined by income, education, or occupation.

postpartum return to smoking. Using the Pregnancy Risk Assessment Monitoring System (PRAMS) data set of over 17,000 women across 10 states, Carmichael et al. found twice as high rates of smoking relapse in women of African American race.² Other studies have found a similar racial discrepancy.²³ However, in reviewing the data in a meta-analysis, Mullen concluded that these differences become insignificant after controlling for education and other SES variables.²³

Several factors surrounding pregnancy have also been shown to predict relapse. These factors include: late or no prenatal care, unintended pregnancy, and multiparity.^{2, 22-23} However, these characteristics may simply be markers for low SES, instead of independent risk factors. The timing of smoking cessation during the pregnancy has had an inconsistent relationship with smoking relapse. Some studies show late cessation is a risk factor for return to smoking, while other studies show no relationship with the timing.^{20, 23-24} Similarly, taking “puffs in late pregnancy” has been demonstrated to be a positive predictor of postpartum return to smoking.^{23, 25} Incidentally, women typically do not consider this type of smoking to be an instance of relapse; rather they believe taking puffs of a cigarette is only a temporary lapse. As a result, these lapses are often underreported by smokers unless directly asked.

Weight gain during pregnancy also has an inconsistent relationship with postpartum smoking relapse. A concern of many smokers is that smoking cessation is associated with weight gain.²⁶ Pregnancy is also a time of weight gain and women who quit smoking gain more weight than women who continue to smoke throughout pregnancy.²³ Understandably, the cross-sectional PRAMS study found a positive correlation between a greater than 35 pound weight gain during the pregnancy and return

to smoking.² However, this study failed to find a similar relationship between the perception of being overweight and relapse. Levine et al. examined factors influencing motivation for continued cessation.²⁷ They found that women who were confident in their ability to control their weight and who had less hunger had greater motivation to stay smoke free. On the other hand, another study found that women who were more concerned about their pregnancy weight gain were actually less likely to relapse.²⁰ This author suggested that concern over weight gain is a marker for general health consciousness, thus strengthening resilience against smoking relapse.

Many researchers have also investigated the influence of pre-pregnancy nicotine dependence as a predictor of later return to smoking. Some found that the number of cigarettes smoked per day correlated with increased risk of relapse.^{9, 20, 28} Others used the Fagerström Test for Nicotine Dependence (FTND), a 5- or 10-question survey measuring physical dependence to nicotine.²⁹ They also found that women with higher FTND scores had significantly higher risk of relapse.²³⁻²⁴ Higher pre-pregnancy nicotine dependence may indicate a greater smoking environment, filled with more smoking cues and triggers.²⁰ However, this predictor has not been consistent, as several other studies measuring the number of cigarettes smoked or using the FTND failed to find this correlation.^{2, 30} Mullen suggests this relationship may be skewed because women with strong nicotine dependence are often not able to quit during pregnancy.²³ Thus, the study population of women who quit smoking with pregnancy is inherently skewed towards having low nicotine dependence.

Negative emotions and depression are strongly correlated with smoking relapse in the general population.^{20, 28} Given the high prevalence of depression during the

postpartum period, mood is particularly relevant to postpartum smoking relapse.^{9, 20, 28, 31} Allen, Prince and Dietz used the PRAMS data to examine the relationship between relapse and reported depressive symptoms, such as feeling down, depressed, hopeless, or having little interest or pleasure in doing things.²⁸ They found that more women who relapsed (23.4%) reported these symptoms compared to those who did not relapse (14.1%). Another study found that women who relapsed had higher Beck Depression Inventory scores and over 70% of women who relapsed felt a negative emotion immediately before smoking the first postpartum cigarette.²⁰ Therefore, as found in the general population, negative feelings may trigger relapse in some new mothers.

Lack of social support for smoking cessation from a partner, family, and friends is a strong risk factor for smoking relapse. Despite being highly motivated to stay quit, several women in one qualitative study reported that they resumed smoking after delivery because they lacked social support.⁴ They described how the protective messages against smoking often ceased as partners became more ambivalent about their smoking cessation after the pregnancy. Conversely, the women in the study who were able to quit and stay quit at 6 months postpartum reported being motivated by strong support from partners and friends. Another qualitative study had this same finding, with several couples deciding to quit smoking together.³¹

Similarly, many studies have found a strong correlation between partner and family smoking status and rate of relapse.^{20, 25, 30, 32} Over two-thirds of women reported being around another smoker when they first smoked after delivery.^{9, 20} Another study found that living with another smoker increased a woman's odds of returning to smoking by up to four times.²³ Also, women who were exposed to secondhand smoke during

pregnancy were more likely to relapse.^{23,25} For many smokers, smoking is strongly enmeshed in social relationships, interactions, and daily routines.³³ Thus, common themes among women who relapse are easy (and often free) social access to cigarettes, peer pressure, and temptation to smoke from friends and family.³¹ Interestingly, although many family and partners expect women to quit smoking during pregnancy, these same individuals are often resistant to changing their own smoking behaviors.³³

Bottorff et al. has extensively studied couple smoking dynamics surrounding pregnancy and the postpartum period.³³ In one qualitative study, she examined the interactions of couples with women who modified smoking behavior during pregnancy. She found three principle types of couple interaction patterns with respect to tobacco use. First, in couples with *disengaged tobacco-related interactions*, tobacco use was viewed as a personal decision that was not discussed. During the pregnancy, women were pressured to quit by their partners, but were often confronted with refusal or resistance when they tried to encourage their partners to also modify smoking behavior. The women described feelings of isolation and constantly struggled with temptation to smoke from their partners during the pregnancy. For couples with *conflicted tobacco-related interactions*, a woman's tobacco use was characterized by shame, monitoring, and hostility by a partner who typically was a non-smoker. Smoking cessation during the pregnancy led to a temporary peace and resolution. However, these partners did not demonstrate much empathy for the women's struggles with tobacco cessation and expected this change to be permanent. Finally, other couples had an *accommodating tobacco-related interaction*, meaning that tobacco use was openly discussed and smoking goals were made in agreement. These couples often described co-reduction or co-

quitting dyads and worked together to find ways to replace smoking. More of these women had not relapsed by six months compared to women with the other two types of tobacco-related interactions.

The decision to breastfeed has also been shown to influence postpartum relapse. Research has demonstrated that the nicotine from smoking can be transmitted through breastmilk and that women who smoke produce less milk with lower fat content.³⁴ One qualitative study found that nearly all mothers endorse the idea that smoking while breastfeeding is harmful to infants.^{4,34} Thus, breastfeeding has been found by several studies to be a protective factor against postpartum return to smoking, particularly in the first months.²³ For a few women in the qualitative study, breastfeeding became an extension of pregnancy that delayed return to smoking after delivery.³⁴ On the other hand, because of these same concerns, smoking relapse often prompts earlier weaning from breastfeeding.^{23,34}

Another common theme among women who are able to remain smoke-free is a strong sense of self-efficacy or internal belief system.^{30-31,35} They often discuss their willpower and firm confidence in their ability to not return to smoking.³¹ Similarly, one study found that the strongest correlate to not smoking by two weeks postpartum was high self-efficacy, as measured by the Smoking Abstinence Self-Efficacy form.³⁰ On the other hand, qualitative studies interviewing women who had relapsed found common themes of low self-esteem, feeling vulnerable to smoking, and increased sense of addiction.^{6,31} These women described how they lack willpower and just “gave in” to having a cigarette, particularly when around other smokers or when drinking alcohol.

The women also discussed their inability to resist the intense cravings for cigarettes and attributed their relapse to succumbing to a nicotine addiction.

Lastly, greater impulsivity has known associations with all types of substance abuse, including cigarette smoking.³⁶ It can be defined as “a preference for smaller, more immediate over larger, more delayed rewards.” Yoon et al. assessed delayed discounting, a measure of impulsivity, by asking women who had quit smoking during pregnancy to choose between receiving a larger amount of money later or a smaller amount immediately.³⁶ They found that women who had higher measures of delayed discounting, or impulsivity, had greater rates of relapse by 24-weeks postpartum and that delayed discounting was stable measure across time.

Reasons for postpartum smoking relapse

Several reasons have been proposed to explain the high rate of relapse after delivery. First, until recently, smoking cessation efforts have largely focused on helping women quit during pregnancy.⁴ Only a few smoking interventions included follow-up after the delivery.^{5, 25, 37}

Second, many women find it easier to quit during pregnancy than after pregnancy. This difference is often attributed to the development of a physical aversion to smoke and the taste of cigarettes during pregnancy and concern for direct exposure of cigarette toxins to their fetus.^{5, 37} Unfortunately, these reasons become no longer relevant after delivery. Also, during pregnancy, women have a visible physical reminder of their unborn child. As a result, they are frequently given verbal and nonverbal cues not to

smoke—even from strangers. Conversely, after delivery of the infant, women report receiving dwindling support from partners and friends to refrain from smoking.⁴

Third, these women are particularly vulnerable as the postpartum period is extremely stressful.³⁷ Women often cite stress during this time as a reason for returning to smoking.^{6, 20, 31} Smoking is a tool these women use to obtain relief from stress and to relax. In a study interviewing women who had relapsed, several of the women rationalized that smoking helped them to be better mothers.³⁸ They explained that smoking provided the necessary breaks to keep calm and maintain patience when caring for their infants.

Coping ability and stress from infant irritability have been examined as reasons for relapse. One qualitative study of 86 women who quit smoking during pregnancy found that infant crying often triggered thoughts of smoking.³⁹ When faced with a crying infant, the women described the themes of (a) *not knowing what to do*, (b) *seeking renewal*, (c) *seeking relief*, and then (d) *evaluating self negatively* after smoking. Many of the women reported feeling better prepared to deal with their crying infant after smoking a cigarette, but also had feelings of guilt and disappointment that they had relapsed.

Similarly, one of the major themes from a qualitative study of women who relapsed after delivery is having poor coping resources for the challenges of childrearing.³¹ The study also interviewed women who remained smoke-free and discovered that these women shared the common theme of having concrete strategies for dealing with temptations and stress. Also, women with more confidence in their ability not to smoke in response to infant crying were found to have lower risk of relapse.³⁰

Interestingly, this study also found that self-reported hours and intensity of infant crying were not associated with smoking relapse, suggesting that maternal, not infant, characteristics were driving return to smoking.

A fourth reason for postpartum relapse is that often these women's primary motivation to quit is concern for the health of their unborn child. As a result, they plan to quit only during the pregnancy. In a qualitative study, several women denied that they ever relapsed after the pregnancy.⁶ Instead, they described how they "never really quit in the first place." Levine et al. argues that for some women who quit during pregnancy, smoking cessation is only a temporary suspension of behavior instead of a long-term change.^{5, 27} In other words, the "real work" of smoking cessation does not begin until after delivery.³³ Some investigators have approached this issue as defining the difference between extrinsic motivations (for the baby or pregnancy-related) and intrinsic motivations (for herself) for quitting smoking. They found that women with more extrinsic relative to intrinsic motivations for quitting had greater rates of relapse at two months postpartum.²³

Finally, in the general smoking literature, there has been emerging research on the impact of social dynamics on smoking behavior. Using data from the offspring cohort of the Framingham Heart Study, Christakis and Folwer organized over 5000 subjects into social networks based on smoking status from 1971 to 2003.⁴⁰ While over time the overall prevalence of smoking decreased, those subjects that remained smokers moved to the periphery of the network and tended to cluster together, with few social ties with non-smokers. The authors concluded that local social niches emerged in the network with differing subjective norms that reinforced decisions to either quit or continue smoking.

In other words, decisions to quit or continue smoking were not made by isolated individuals. Rather, these decisions were the result of choices made by collective groups of people. Most smokers today are members of isolated social niches that perpetuate smoking. While women who quit with pregnancy may not intend on resuming smoking, after delivery they often return to their heavily influential smoking niches.

Interventions to prevent postpartum smoking relapse

Studies have shown that postpartum women are interested in interventions to aid smoking cessation. Levine surveyed 36 women who quit smoking with pregnancy.³⁷ Nearly all respondents expressed interest in participating in a relapse prevention group with other women and in talking with a coach or counselor. They also endorsed treatment topics on controlling the urge to smoke, stress management, and relaxation strategies. However, despite these women's interest and our better understanding of the risk factors and reasons women return to smoking, prior interventions have had limited success in preventing postpartum relapse.

Mullen's 2004 review article identified six interventions that met inclusion criteria of a controlled, but not necessarily randomized trial. This included: the MOMS (Modification of Maternal Smoking) trial in Portland, Project PANDA (Parents and Newborns Developing and Adjusting) in Texas, the HOPP (Healthy Options for Pregnancy and Parenting Project) trial in Seattle and Minneapolis, the Vancouver trial, the first Portland Trial, and Project STORK (Stop Smoking for Our Kids) or the second Portland trial.^{5, 23, 41-46} Detailed information about each of the trials is described in **Table A**. The interventions were highly variable in their research methods and underlying

approaches. Specifically, they differed in the length of the intervention (six weeks to six months), time of recruitment (early pregnancy to birth hospitalization), type of intervention (information booklets/packets, letters, counseling, videos, or telephone calls), setting (mail, telephone, hospital, pediatric office), and partner component. Mullen concluded that these trials demonstrated modestly positive results that typically lasted for only six months. Only Project PANDA and Project STORK showed positive results at one year postpartum. However, the results from Project PANDA have not been formally published and thus were not peer-reviewed, and Project STORK was not randomized.

In 2007, Levitt et al. again reviewed the literature, but with more stringent inclusion criteria of only randomized controlled trials.⁴⁷ They identified the “Smoke Free Children” intervention in Sweden in addition to the MOMS trial and Vancouver trial mentioned before.^{5, 41-42, 45, 48} The details of the “Smoke Free Children” trial are also included in **Table A**. After reviewing these three interventions, the authors concluded that none of the trials demonstrated any effect on smoking relapse rates or cessation rates at 6 and 12 months postpartum after controlling for age, education, and partner smoking status. The MOMS trial did report a reduction in the number of cigarettes smoked by mothers in the intervention group at six months.⁴¹⁻⁴² Conversely, the “Smoke Free Children” trial found that the intervention group reported smoking more cigarettes than the control group. However, the saliva cotinine levels in the control group was actually twice as high as the intervention group.⁴⁸ Despite these negative and mixed results, Levitt et al. concluded that the trials demonstrated a positive impact on women’s knowledge about passive smoke exposure and readiness to stop smoking. Thus, although

these interventions did not show evidence for altering major smoking outcomes, they were successful at positively changing attitudes and knowledge about smoking behavior.

Other recent interventions include a pilot study of 87 women in Vermont who were randomized to receive monetary vouchers either contingent or non-contingent on a negative urine cotinine level at several postpartum visits.²⁰ Unfortunately, the treatment condition had no impact on relapse rates at six months. Another randomized trial examined the effectiveness of 10-20 minute counseling sessions at the postpartum hospitalization that included motivational interviewing, motivation assessment, and education. They also did not find a difference in relapse rates between the intervention and control groups by two months postpartum.⁷

The Theory of Planned Behavior

One proposed reason these interventions have had limited success is that current knowledge from descriptive and predictive studies on postpartum smoking relapse are not sufficient to guide interventions.⁴⁹ The critical piece missing may be an understanding of these mothers' motivations or intentions to return to smoking. Ajzen's Theory of Planned Behavior (TPB) is a conceptual framework that may help understand the intentions behind postpartum smoking behavior.

The TPB was born out of Ajzen and Fishbein's Theory of Reasoned Action (TRA).⁴⁹⁻⁵¹ Both the TPB and the TRA are schematically depicted in **Figure 1**. The TRA asserts that the most important determinant of an individual's behavior is their intention to do that behavior. Intention dictates how hard a person will try to perform the behavior. According to the TRA, the direct determinants of intention are 1) the *attitudes*

towards performing the behavior and 2) the *subjective norms* associated with the behavior. Attitudes are the overall good or bad evaluations of the behavior, such as “quitting smoking is good.” It is also determined indirectly by *behavioral beliefs* about associated outcomes of the behavior and *evaluations of those behavioral outcomes*. For example, a behavioral belief is “quitting smoking will cause weight gain” and the evaluation of this outcome is “weight gain is bad.” Subjective norms are the perceived social pressures to perform or not to perform the behavior. This is indirectly determined by *normative beliefs*, or the approval or disapproval of others, and the individual’s *motivation to comply* with what others think. For instance, a normative belief is “my mother approves of me quitting smoking,” but the motivation to comply is “generally, I do not do what my mother thinks I should do.”

The TRA assumes that individuals have complete control over their behavior. However, often people have incomplete volitional control. The Theory of Planned Behavior was developed as an extension of the TRA to include *perceived behavioral control* as an additional determinant of intention. Perceived behavioral control refers to the perceived ease or difficulty of performing the behavior and is determined indirectly by the *control beliefs*, or any facilitating or constraining conditions, and the *perceived power* of these conditions. For example, a control belief is “I will likely encounter public smoking bans” and the perceived power is “public smoking bans will strongly facilitate quitting smoking.” In addition, the TPB adds the additional variable of *actual behavioral control*, in so much that perceptions of behavioral control are sometimes inaccurate. Actual control influences both perceived behavioral control and the individual’s ability to carry out his/her intention into behavior.

All three determinants of intention—attitudes, subjective norms, and perceived behavioral control—operate independently and vary in weight when applied to different individuals and different behaviors. However, as a general rule, the more favorable the attitudes and subjective norms and the greater perceived behavioral control, the greater the intention and the more likely an individual will perform the behavior. The ultimate goal of the TPB is to identify the specific determinants of intention to guide design of better and more appropriate interventions to modify behavior.

The TPB has been used to understand numerous health behaviors, such as condom use, exercise, and infant feeding methods. Thus far, there have been several studies that have successfully applied the TPB to understanding smoking intention and behavior. The earliest study compared smoking intentions and behaviors of general adults to pregnant women.⁵² In general adult smokers, attitudes, subjective norms, and perceived behavioral control all predicted intention to quit. However, actual behavior was best predicted by perceived behavioral control and habit, or degree of smoking. In pregnant women, attitudes towards smoking and perceived behavioral control best predicted intention to quit. Actual behavior was influenced primarily by perceived behavioral control. Overall, the authors concluded that the results provide support for the application of the TPB to understanding smoking intention and behavior, with particular emphasis on the importance of perceived behavioral control.

Norman, Bell, and Conner interviewed adult smokers in a British primary care clinic and found that intention to quit smoking was best explained by perceived behavioral control and perceived susceptibility to smoking related health problems.⁵³ They also found that a smoker's intention to quit strongly predicted having a quit attempt

within six months. Another study found that attitudes towards smoking, subjective norms, and past smoking behavior all influenced intention to quit in Australian adolescents.⁵⁴ Similarly, a study of Sweden university students found that attitudes towards smoking and subjective norms were the strongest predictors of intention to quit.⁵⁵ In both studies, intention was a strong predictor of actual quitting behavior.

While the TPB has been successfully used to understand general smoking behavior, there have been no studies to date specifically focusing on postpartum smoking behavior. For that reason, in the conclusion of her paper, Gantt proposed that the next step should be to use the TPB as a framework to understand better postpartum smoking relapse.⁴⁹

Intention as a predictor of postpartum smoking behavior

Although the Theory of Planned Behavior has not specifically been applied to postpartum smoking research, the theory's core principle that an individual's intention predicts actual behavior has been examined in this population. Between 66-90% of women intend to remain abstinent following delivery.^{5, 27, 30, 35, 56-57} Although a large portion of these women ultimately relapse, studies have found that intention not to return to smoking is a strong predictor of actual smoking cessation. Specifically, Röske et al. found that women who responded that they intend to staying abstinent had four times lower odds of resuming smoking after delivery compared to those women who intended to starting smoking again.⁵⁷ Another study examining the factors that predict motivation to remain abstinent found that breastfeeding and strong self-efficacy to control weight were associated with high intention to stay quit.²⁷

Pilot data from a prospective, exploratory study by Eve R. Colson at Yale-New Haven Hospital from 2003 to 2004 also suggests that intention closely predicts actual postpartum smoking behavior. In the study, structured interviews during the postpartum hospital stay were conducted with 46 inner-city women who quit smoking during pregnancy. The women were asked their intentions to resume smoking after delivery. Participants were then followed-up at the infant's 2-week and 2-month health maintenance visits and asked to report their current smoking status. By the 2-month follow-up visit, 23 (50%) women reported resuming smoking. Interestingly, the women's previously stated intentions correlated with their actual behavior (see **Figure 2**). Of the 9 women who stated they intended to resume smoking, all were smoking by the 2-month visit. In comparison, of the 18 women who stated they did not intent to resume smoking, only 17% reported smoking by 2 months postpartum. Similarly, the women that responded "unsure" were split down the middle, with 60% resuming smoking by the 2-month visit.

Specific aims

To our knowledge, no prior study has investigated women's intentions to resume smoking after delivery using the Theory of Planned Behavior. A qualitative approach will be used as the first step in application of the TPB to postpartum smoking behavior.

Qualitative research is a scientific form of inquiry used to understand complex social interactions, varying perspectives within a population, and/or the motivations and beliefs behind behaviors.⁵⁸⁻⁵⁹ Tools of research include: individual interviews, focus

groups, observation, and document review. The final outputs are themes describing these interactions or perspectives.

While prior research described above has determined that intention is a strong predictor of postpartum smoking behavior, little is known about what specifically influences intention, how these influences impact women's lives, and why these influences are important. Qualitative research was chosen for this initial portion of the study because it is uniquely suited to uncover the answers by exploring these questions directly with respondents. Initiating study of a behavior using qualitative research has been shown to lead to a better understanding of the behavior and, thus, more accurate and significant hypotheses for later quantitative research.⁵⁸

In women who quit smoking during pregnancy, the specific aims of this study are to use qualitative research methodologies to: (1) determine their intentions to resume smoking after delivery and (2) understand what drives these intentions. While we have some general ideas about what determines intention, we are open all possibilities. Following the Grounded Theory of qualitative research, interpretation of data is made by inductive reasoning to ensure conclusions truly represent, or are grounded in, the perspective of the respondents.⁵⁹⁻⁶⁰ We specifically chose not to form a hypothesis as to avoid clouding interpretation of the data with our own perspectives. Moreover, by definition, qualitative research is hypothesis generating, not hypothesis driven. With the resulting interview data, themes surrounding intention to resume smoking will be uncovered. These themes will then generate hypotheses in the framework of the TPB to be tested in the next quantitative phase of research.

In sum, this study is the initial step in a body of research with the ultimate goal of gaining an in-depth understanding of women's intentions to resume smoking. This understanding will then be used to create more effective and targeted interventions to reduce infant secondhand smoke exposure. Given the complexity and vast data that comprises all three elements of the TPB, this thesis will focus primarily on understanding the subjective norms component of the TPB, or how women's social environments influence their intentions to return to smoking.

Methods

This study consists of qualitative data collection on smoking behavior during the immediate postpartum period using individual, semi-structured in-depth interviews.

Sample

Following the qualitative concept of purposeful sampling^c, women who self-reported quitting smoking with pregnancy were recruited during their postpartum hospital stay at Yale-New Haven Hospital, New Haven, Connecticut, from June to August 2009. From the 502 women who delivered an infant at the hospital during that time, 241 were screened for eligibility for the study. Women were screened if they (a) verbally consented to be screened, (b) spoke English, (c) had recently given birth to a healthy infant, (d) were over the age of 18, and (e) did not have a scheduling conflict, such as a morning discharge. The screen consisted of the following question:

Which of the following statements best describes your cigarette smoking? (Please choose ONE.)

- 1. I smoke now, about the same amount as before I was pregnant
- 2. I smoke now, but I've cut down since I was pregnant
- 3. I smoked in the past, but I have quit smoking since I was pregnant
- 4. I smoked in the past, but I quit well before becoming pregnant
- 5. I have never smoked

Of the screened women, 35 women were eligible for the study by answering “3. I smoked in the past, but I have quit smoking since I was pregnant.” Twenty-four women consented and completed the study, resulting in a participation rate of 69% of eligible

^c In purposeful sampling, respondents are purposefully selected based on their knowledge related to the focus of interest.^{58,63}

women. Enrollment continued until theoretical saturation was reached^{d 58-59, 61}. The sample size changes throughout the recruitment process are displayed in **Figure 3**. Nearly all of the recruitment and screening was completely by one member of the research team, the author Stephanie Ngoc Tu Nguyen (SNN).

Procedure

Both the screening and actual study were conducted during the women's postpartum hospital stay. This time frame was chosen because the early postpartum period is a decisive time for new mothers. Most mothers have not yet returned to smoking and it is a time when mothers and their families are particularly open to suggestions and new information.⁶² Additionally, recent studies have found that a large portion of relapse occurs within two weeks of delivery.⁷⁻⁸ Thus, understanding women's intentions immediately following delivery is critical as the postpartum hospitalization could be an opportune time for future interventions.

We identified potential women to be screened from a daily list of healthy newborn births. These women were then individually approached to be screened and asked to participate in the study if eligible. Respondents provided verbal, informed consent and the study was conducted in the respondents' rooms at a time convenient for them. At the end of the study, respondents were compensated with a \$10 gift card to WAL*MART and were given information about smoking cessation programs in the area. Nearly all (20 of the 24) study interviews were completed by one member of the research

^d Theoretical saturation is the point in data collection at which no new ideas or concepts are emerging from the reviewed data. At this point, the data has fully captured the diverse characteristics and experiences of the chosen sample and data collection is complete.⁵⁸⁻⁵⁹

team (SNN), with the remaining interviews completed by two other members of the team, Isabelle Von Kohorn (IVK) and Eve Ruth Colson (ERC). All interviewers were trained in qualitative interview techniques and the initial interviews were observed by the other interviewers to ensure consistency in approach. The research protocol was exempted and approved by the Human Investigations Committee at Yale University School of Medicine.

Interview instrument

The data collection consisted of individual, semi-structured in-depth interviews of 15-45 minutes duration in the patient rooms. Semi-structured interviews are interviews organized around a pre-determined interview instrument, but also allow for deeper investigation of topics salient to the respondent.⁶³ While focus groups were initially considered, the individual interview was ultimately chosen because it allowed for better understanding of the personal perspectives and experiences that drive each women's intentions.⁶¹

Our interview instrument was initially based on the Theory of Planned Behavior, on relevant findings from prior literature, and on results from the pilot study. However, the women were always encouraged to expound upon any topics of personal importance. As the interviews and analysis proceeded, more questions were added to the interview instrument to explore new topics or prior topics from a different angle. The final domains of the interview instrument included: smoking history, prior quit attempts, experiences quitting during the pregnancy, intention to resume smoking after delivery (with a focus on attitudes, subjective norms, and perceived behavioral control), possible

interventions, personal strategies to prevent relapse, breastfeeding plans, and social support. **Figure 4** shows the complete list of interview questions and probes. The interviews were digitally audiotaped and sent to an independent, professional, HIPAA compliant transcription service for verbatim transcription. Transcripts were then reviewed while listening to the audiotape recordings to ensure accuracy of transcription.

Following the interview, information about basic demographics and smoking profile (such as age started smoking, number of prior quit attempts, the Fagerström Test for Nicotine Dependence, weight gain opinion, and infant feeding plans) were collected.²⁹ They were also asked to score their intention to return to smoking after pregnancy on a scale from zero (no intention) to ten (absolute intention). See **Figure 5** and **Figure 6** for the data collection form and chart review form, respectively.

Data collection and analysis

All data collection and analysis closely followed the Grounded Theory^e, a vigorous and well-established methodology of qualitative research that assures validity and reliability of results.^{58-61, 64} Using an iterative process, the collection and analysis of data occurred simultaneously. Analysis of prior transcripts informed and refined future data collection. Starting early in the study, a team of researchers with diverse backgrounds (including allopathic and naturopathic medicine, anthropology, and nursing)

^e Developed by Barney G. Glaser and Anselm L. Strauss, the Grounded Theory is a guideline for conducting rigorous qualitative research that emphasizes inductive data collection and analysis. Through these methods, the final products are theories and themes that appropriately reflect the ground, or the views of the respondents.⁵⁹⁻⁶⁰

reviewed the transcripts. They then met to discuss the key themes, or codes^f, that were emerging from the transcripts.⁵⁹ Using an inductive approach^g, a structure of codes and subcodes was created from the prevailing themes found in the interviews. As more data was reviewed, the structure was continually refined to ensure it was grounded in the views of the respondents. These meetings also generated new interview questions to be explored in future interviews.

The transcripts were also uploaded to ATLAS.ti 6.0, qualitative data analysis software that facilitates the classification and retrieval of text labeled by codes for comparison of ideas across respondents. Using ATLAS.ti, each transcript was re-reviewed by two independent members of the research team (SNN, IVK) for line-by-line assignment of codes from the evolving code structure to quotes in the transcripts. A third member (ERC) coded select transcripts. Continuing the inductive approach, new codes were added and old codes refined to better fit the concepts found in the data. Previously coded transcripts were then re-coded with the revised code structure. Also, following the constant comparative method, different segments of text under the same code were compared to ensure both segments reflected the same concept. Once independent coding was complete, the code assignments for each transcript were merged and any discrepancies in coding were discussed and reconciled. The end result was a single, agreed upon assignment of the code structure to all transcripts.

^f Codes are tags or labels that are assigned to quotes, or portions of the transcripts, used to catalog the key concepts found in the transcripts.⁵⁹

^g The inductive approach is an approach to developing a code structure. Codes are generated from concepts that emerge after line-by-line review of the data. This approach prevents researchers from forcing preconceived concepts on to the data. This contrasts to the deductive approach, in which an initial structure of codes is created based on prior literature before the data is reviewed.⁵⁹

This process of simultaneous data collection and coding analysis continued until the point of theoretical saturation was reached, or the point at which no new codes were created and no existing codes required modification to fit the newest data. This point signaled that the code structure was finalized and data collection was complete.

Next, using ATLAS.ti to output all quotes assigned to each code, all of the codes were separately reviewed and analyzed by the research team (SNN, IVK, ERC, and Dena Schulman-Green). These meetings identified themes found both across respondents as well as outlier perspectives. Specifically, the focus of this thesis was on the influence of women's subjective norms, or social environments, on their intentions to return to smoking. With this in mind, the following framing questions guided data analysis: How do women who quit smoking during pregnancy describe their social environment? How did this environment impact their decision to quit smoking during pregnancy? And, how does this environment impact their intention to resume smoking after pregnancy?

From the themes generated, hypotheses were formulated to be verified in future quantitative research. These themes will also be assessed by a similar group of women who quit smoking during pregnancy to verify the validity of these themes. This type of "member checking" is a form of triangulation to ensure that the conclusions drawn from the data are truly grounded in the respondents' perspectives.

Results

At the conclusion of this study, 241 women were screened during their postpartum hospitalization. Of those screened, 19% [n=45] reported they were smokers prior to this pregnancy. This percentage is slightly higher than the national average of women smokers (17.4%) and the Connecticut average of smokers (17.0%).^{1, 65} Of these women, 78% [n=35] reported that they quit smoking with this pregnancy and were eligible for the study. In the end, 24 women enrolled and completed the study, resulting in over 300 pages of transcripts. The primary reasons the other 11 women declined were they were too busy, tired, or had a scheduling conflict.

Table B displays the complete list of the basic demographics and smoking profile of the sample. The average age of the respondents was 26 years (SD = 5) and ranged between 18 to 36 years. The racial distribution was predominately White/Caucasian (62%), with a quarter Black/African American (25%). By comparison, New Haven County in 2008 was composed of 70% White (non-Hispanic) and 13% Black.⁶⁶ Most respondents (88%) had completed at least a high school education and a quarter (25%) had at least a college education. This mirrors the New Haven County census in 2008 with 83% of adults with a high school degree or higher and 28% of adults with a Bachelor's degree or higher. The Fagerström Test for Nicotine Dependence (FTND) scores prior to quitting were generally low with 58% of respondents below the cut-off score of 4 for nicotine dependence.²⁹ A quarter (25%) of respondents met criteria for nicotine dependence with a FTND score of 4 or 5 and 17% met criteria for severe nicotine dependence with a FTND score greater than or equal to 6. Finally, when asked to rate their intention to return to smoking on a scale from zero to ten, with zero

indicating no intention and ten indicating absolute intention, half (50%) indicated zero. The average score was 2 (SD = 2) and the highest score was a 6. The spread of intention scores is shown in **Figure 7**.

A code structure with eight primary codes emerged from the data. **Figure 8** shows a final list of all of major codes and subcodes. The primary focus of this thesis is on code “5) The influence of the social environment on smoking behavior.” Three themes with subthemes related to the influence of the social environment emerged from this code. Respondents described: 1) their social interactions and smoking, 2) the subjective norms, or perceived social pressures, regarding smoking during and after pregnancy, and 3) the influence of their partners on their smoking behavior.

Table C lists the number and percentage of respondents that endorsed each theme and subtheme on the influence of the social environment on smoking behavior. For each theme and subtheme, respondents were also separated by their intention to return to smoking score. The number and percentage of respondents with an intention score greater than zero, indicating some intention to return, was determined. Most of the themes and subthemes had similar intention score distributions as the total sample of 50% with an intention score greater than zero. In other words, most of the themes and subthemes did not vary with intention. However, the most significant difference was that a low of only 5 of 15 or 33% of women who reported the subjective norm that family and friends would discourage smoking after pregnancy (B.1.b.) had an intention score greater than zero. Conversely, a high of 9 of 14 or 64% of women who reported the subjective norm that family and friends would be indifferent or encourage smoking after pregnancy (B.2.b) had an intention score greater than zero.

Social interactions and smoking

When reflecting on their experiences of being a smoker, all of the women emphasized the importance of their relationships with other smokers. Common subthemes were that: 1) most women have social motivations for smoking, 2) virtually all of the women were embedded in large, complex social networks of smokers, including partners, family, friends, and co-workers, 3) most women experienced frequent temptations to smoke from the smokers in their social networks and, 4) as a result, several women felt either isolated or the need to separate from their social networks of smokers if they were to continue abstaining from smoking. See **Appendix I** for a complete list of quotes related to the theme of social interactions and smoking.

First, when asked their reasons for smoking, the majority of women described at least some social motivation, either related to social situations in which they would smoke or social relationships with other smokers [n=20]. One woman described how this social aspect was her primary reason for smoking:

... the majority of it [smoking] was, I think, more social. So, you know, if you went to a bar or something and had a couple of drinks, you would smoke. My father also smokes so, it was nice sitting outside during the summer just talking and smoking and during breaks at work, usually helps, you know, to get out for a little while, so you generally gather towards the smokers and you hang out with them and smoke ... (Respondent 21)

As mentioned by this woman, common situations for smoking often involved going out, drinking alcohol, or hanging out with other smokers. Several women discussed more intimate smoking settings with close family and friends, such as this woman's relationship with her father. Regardless of the scenario, relationships with other smokers were commonly cited reasons for smoking.

Thus, is it not surprising that all of the women described how they were embedded in large, complex social networks of smokers that included their partners, family, friends, and co-workers [n=24]. In 16 of the women's families, at least one parent smoked cigarettes. Another 15 women mentioned having a partner who currently smokes or smoked in the past. One woman's reason for starting to smoke was that she experienced nicotine withdrawal from her father's secondhand smoke:

I started smoking shortly after I moved out of my parents' house because I was around secondhand smoke my entire life and when I moved out I started withdrawing from it. So, I started smoking ... he [my father] was a horrible chain smoker. (Respondent 5)

Nearly a third of the women discussed a prominent smoking culture at work [n=7]. For one woman, her smoking co-workers not only encouraged, but augmented her smoking habit:

... I worked at a plumbing company as a dispatcher so everybody that worked in the office smoked cigarettes plus all the technicians that hung out at the garage ... So whenever you had spare time you would always be talkin' and chattin', everybody smoked a cigarette ... "Hey you want to come outside and have a cigarette?" It just starts getting like more addicting because you're like, you're noticing that "wow, I'm smoking a lot more than when I first started working here." (Respondent 8)

A few of the women described having a special bond with other smokers. One woman noted how she was able to take advantage of this unique connection to further her business interactions:

I have made more deals and more friends and more personal relationships in a professional environment smoking with one or two persons than having, you know, a group dinner, whatever ... smokers always stick together and you always get a special rapport going. It is like, it is a common thread that you don't have to look for through witty conversation. It just is. So there's, there's a connection there that, that can be exploited quite nicely in a professional environment, believe it or not. (Respondent 24)

Another woman surmised that she had such a large social network of smokers because she was naturally drawn to the personality of other smokers:

... sometimes similar personality people seem to be smokers so often there's a bond there, not just over the smoking but it's like a conversational time ... I can often look at a person, be like "you used to smoke," if they don't smoke now, I can tell they're an old smoker. I don't know what it is; often I think most smokers that I've encountered are fairly laid back people ... Maybe those are the people I warm to which is probably why I gravitated that way. (Respondent 9)

Third, because smoking was so pervasive in their social networks, many women reported struggling with frequent temptations to smoke when around family, friends, and partners [n=12]. One woman vividly described her internal dialogue as she struggled to resist this temptation during the pregnancy:

... there was my, my friend's house, her mom and dad smoke, like that house when you walk in, it's a cloud of smoke. I would sit there and I'd watch them go through, cigarette, like these, they'll light a cigarette and they'll smoke a cigarette and the next one will be lit before the first one's out. And I'd sit there and I'd watch that and after awhile it would get hard like, "are you really gonna, not gonna finish that cigarette? Are you really gonna light another one and let that one burn? What are you doing? I should just finish that for you." (Respondent 16)

Several other women described how temptation from other smokers played a role in their return to smoking after quitting with prior pregnancies. As one woman recalled:

I was in a group of people that were smoking outside and they passed me one and I just started smoking again ... it was almost like I didn't even stop. They just handed me a cigarette and I smoked it and then started smoking from there. (Respondent 5)

One respondent specifically identified the pressure from her social network of smokers as the reason she returned to smoking, stating:

I guess the fact that I can't like control what other people do, I guess as stupid as it sounds kind of broke me down months later, you know? (Respondent 11)

Finally, as a result of these temptations to smoke from their social network, several women felt either socially isolated or the need to separate from their social

network of smokers to continue abstaining from smoking. No longer a smoker during the pregnancy, some women felt left out of their normal social group [n=5]. As one woman explained:

... because if the, like the classic group, they'll come over, I'm the only one not hanging out. Like this was like, you know, we hang out with our friends it's like "ehh, she's not smoking, she's like the party pooper," you know, I mean that's what you think, you know. Everybody else is hanging out and I'm the party pooper, you know? (Respondent 3)

The woman who earlier described having a special smoking relationship with her father explained that her only regret when she quit smoking was missing this connection:

Probably the only other thing is like when I go sit with my dad, because you know, we were like, I'm daddy's little girl, so when I go sit with him and talk with him, it's like hours we used to talk and sit there and smoke together and now he still smokes but we don't have that like relation I guess. I don't know, it's just, it's weird, I don't know how to explain it. (Respondent 21)

On the other hand, some women acknowledged that isolation from the smokers in their social network was or will be necessary in order to remain abstinent in the future [n=6].

One woman explained why she plans on surrounding herself with non-smokers:

... because if it's in your circle, it's a lot easier to keep doing it [smoking]. If it's not in your circle it's a lot easier to stop doing it. You hang out with people that smoke it's gonna be a lot [harder]. (Respondent 6)

Similarly, the woman who previously described her struggles being around her smoking friend's parents decided to physically avoid her friend's house in order to remain abstinent during the pregnancy:

... it's very hard when you're in a room full of smoke, so what I did to avoid that was less trips, very less trips to that house ... That's just how I had to do it. (Respondent 16)

Subjective norms, or perceived social pressures, regarding smoking during and after pregnancy

Following the framework of the Theory of Planned Behavior, the influence of subjective norms, or perceived social pressures, on women's smoking behavior was explored. Specifically, the women were asked to discuss the reactions of family and friends to their behavior of quitting smoking during the pregnancy and then to the hypothetical behavior of returning to smoking after the pregnancy. Generally the normative beliefs, or how others viewed their behavior, either 1) encouraged smoking cessation or 2) were indifferent to or discouraged smoking cessation. Some women received conflicting views from different friends and family. Finally, 3) the strength of these normative beliefs was assessed by discovering the women's motivations to actually comply with their family's and friends' beliefs. See **Appendix II** for a complete list of quotes related to the theme of the influence of subjective norms.

During the pregnancy, virtually all of the women received at least some positive encouragement from their social network in response quitting smoking [n=23]. The women described how their family and friends were "proud," "happy," and "thrilled." A few women felt that it was expected they quit during the pregnancy. As one respondent said:

Well, they were happy. They wouldn't of agreed too much with me smoking anyway while I was pregnant, so. It was kind of like, yeah they knew that it was gonna happen 'cause it wasn't going to happen anyway. (Respondent 24)

Another woman described how her family became proactive in supporting her attempt to quit smoking after discovering she had relapsed during the pregnancy:

... when I got further, more in my pregnancy, I had like two cigarettes and I got caught with the cigarettes. That's when my family was like "I don't want you to smoke. It's not good for the baby. It's not good for you ... Why are you doing this? ... Let's talk about it." Stuff like, that's when they started being supportive and stuff. And they was like, they kept an extra eye on me, make sure that I'm not having another cigarette. (Respondent 2)

One woman was able to change her husband's opinion to support her decision to quit smoking during the pregnancy:

At first he [my husband] didn't understand it and when I became pregnant with my daughter, he didn't understand it at first until I told him you can either [not] smoke or you can leave. And then he started doing the research with me and stuff like that, you know, he started asking me questions and now whenever he even sees a pregnant woman standing at the side of the road smoking, he starts on a huge rant, "and she shouldn't be smoking and it's not healthy" ... (Respondent 5)

Women frequently named their mothers as individuals who encouraged and supported not smoking during pregnancy [n=16]. Four women even stated that their mothers also quitting smoking during pregnancy. Another woman explained how her mother took extraordinary measures to ensure she quit smoking during the pregnancy:

I was twelve weeks pregnant and when I found out that I was pregnant and that's when my mom said, "you know you gotta stop smokin' cigarettes right?" I said, "hah?" She was like, "you know you gotta stop smokin' cigarettes. Your grandfather died and none of this and you gotta look out for you, your baby, you know you got the kids at home" and I'm like, "oh my gosh" ... My mother was on my back, she was like really on my back during my whole pregnancy making sure I didn't smoke cigarettes. My mother even stayed at my house for a month to make sure I wasn't smokin' no cigarettes ... (Respondent 19)

Several of the women remarked how they felt judged by the public for smoking during pregnancy, which also re-enforced quitting [n=6]. When asked how society views a pregnant woman who smokes, one woman responded:

They'll, they look at them funny ... Because I go buy cigarettes for people and they just look at me like "okay, what do you need a cigarette for?" when I was pregnant. But it wasn't for me; I would go get it for somebody. They'd say, "would you go get me a cigarette?" I was like "fine, whatever" and I would go and they would look at you like funny looking like. (Respondent 10)

The women were also asked their thoughts on reactions from family and friends if they hypothetically were to return to smoking *after* the pregnancy. Just over half of the women said that their social network would continue to encourage smoking cessation [n=15]. They felt their family and friends would be "upset," "pissed," or "disappointed"

because they had been so successful during the pregnancy. For instance, one woman stated:

They'd probably be in disbelief and probably want to smack me. [laughs] Probably want to smack me because I've come this far already ... Probably everyone now, probably even, even my dad, you know, 'cause it's, it's a hard road to travel and then you just go back to it? Why, what's the point? (Respondent 21)

Three women described how support from their social network would prevent them from returning to smoking during the postpartum period. One such respondent stated:

Yeah, I'm a very, very lucky person. My support group is huge. I have, my aunt is a social worker, counselor-type person so I can always call her for advice. My mom is a, is a, is a counselor-type person, who always has advice for people. My grandmother, my grandmother smoked from the time she was fifteen until she was sixty or seventy something and she just stopped, just quit a long time, so I have someone that can relate to me. (Respondent 16)

On the other hand, many women described how the normative beliefs from their social networks were indifferent to or even discouraged smoking cessation—both during, but especially after the pregnancy. During the pregnancy, a few women described how they were discouraged from quitting by people who believed there were no harmful effects from smoking during pregnancy [n=5]. However, these narratives were often followed by statements to discount these beliefs. One woman recalled:

I remember there was a girl that she smoked cigarettes and she, like, offered me to smoke one. And I said "no" and she said "why?" and I said "because I'm pregnant, what do you mean why?" And she said "oh, there's nothing wrong if you smoke cigarettes while you're pregnant" and, like, I kinda feel bad by saying that but I was like, "yeah that's why your daughter came out when she was four months and that's why she weighed a pound." She kinda felt upset, but that made her think a lot. (Respondent 12)

And, while some women experienced very encouraging or discouraging reactions to their decision to quit smoking during pregnancy, a third of the women felt their social network was indifferent [n=9]. While these women were not discouraged from quitting smoking during pregnancy, they did not receive much support either. One woman stated:

I don't think she [my grandmother] has like that big of an opinion on it. She doesn't smoke so of course she doesn't like it but I don't think she'd really say anything to me either way but I'm sure she wouldn't ... (Respondent 11)

Similarly, over half of the women believed that their social network would be indifferent or even encourage smoking *after* the pregnancy [n=14]. When asked how family and friends would respond if she started smoking again, one woman and her husband explained:

Woman: *I don't know, nobody ever really ...*

Husband: *It's not a big deal 'cause everybody we're around is basically smokers.*

Woman: *Yeah.*

Husband: *Or used to be smokers or, you know? (Respondent 6)*

Two women specifically stated that the reason their family would not care if they returned to smoking after delivery is because their only concern was for the harmful effects to the fetus from smoking during pregnancy. When asked how an uncle who strongly encouraged quitting during pregnancy would respond to smoking after pregnancy, one woman stated:

Respondent: *He wouldn't care.*

Interviewer: *He wouldn't care?*

Respondent: *I'm not pregnant no more.*

Interviewer: *So, his focus was on when you were pregnant?*

Respondent: *Uhh, huh. (Respondent 18)*

Another woman believed that this same indifference from her social network contributed to her return to smoking after a prior pregnancy:

I know my main problem was I had nobody supporting me 'cause all the women I knew that were pregnant or just had babies smoked. They didn't think anything of it. (Respondent 5)

Three women even anticipated direct pressure from family and friends to resume smoking after the pregnancy. As one woman described:

Like basically everybody in my family smokes cigarettes ... so I know, like when I bring my baby home from the hospital whatever, they gonna be like, "oh, you

didn't have a cigarette in so long" and ... "I know you want a cigarette" and they gonna try and pressure me into smokin' ... 'cause sometimes my family are kind of pushy so they can get you to do things that you don't want to do. (Respondent 19)

Lastly, according to the TPB, to understand the influence of the subjective norms, we must not only understand the different messages women receive about their smoking behavior, but also determine their motivation to comply with these beliefs. To do this, we asked women if their family's and friends' beliefs about their smoking would actually influence their behavior. Several women were clear that they had little to no motivation to comply with other people's beliefs about their smoking [n=7]. For instance, one woman described how her mother would strongly oppose if she returned to smoking after the pregnancy:

Well, I know my mom would like give me hell forever, like she would just like drive me up a wall 'cause she can be like a huge nag and like she's already told me, like gone on and on and on and on and like given me these big lectures about how she'll be so disappointed and she'll be so upset and so like I, if I do go back to smoking, I'm definitely not letting her know because, uh, she'll drive me crazy. (Respondent 15)

However, she and her husband then explicitly explained how her mother's beliefs have very little impact on her actual smoking behavior:

Husband: *Zero, zero, impact. Other than ...*
 Woman: *Yeah. Other than it would just make me hide it from and lie to her, like just like not what I want to do at 30- years-old, you know what I mean?*
 (Respondent 15)

Nonetheless, the majority of women stated that they had high motivation to comply with what others thought about their smoking habits, particularly with the normative beliefs of their mothers and partners [n=13]. For instance, one woman explained why her mother and partner were so influential:

[My mother and partner are] ... important because they're the two main people in my life that I really care about, so what they say I really listen to because they

know best. He's older, he's twenty-five, my mom's older too, she knows better than me, so. (Respondent 20)

Another woman described how her mother's opinion was particularly important because her mother had also quitting smoking during pregnancy:

Well, it really matters to me what my mom thinks because she doesn't do it. And actually she used to smoke cigarettes and she actually stopped the moment she found out she was pregnant with me. And that makes me, like, feel a lot better. That makes me feel, like, good that she did it because of me, because I was important to her. And I'm pretty sure that my kids are going to feel the same way if they know that I used to smoke, but I stopped the moment I found out I was pregnant by them, with them. So, like, I know they are going to feel the same way I feel about my mom. Like, she actually did it for me, like, she cared about me. (Respondent 12)

This woman clearly valued her mother's decision to stop smoking because to her this behavior signified love and sacrifice. By following her mother's modeled behavior of quit smoking with pregnancy, she hoped to demonstrate this same devotion to her own children.

The influence of partners on smoking behavior

When describing their past smoking behavior, nearly all of the women mentioned their partners, such as a boyfriend, the father of the baby, or a husband (all of the women described heterosexual relationships). Because partners were consistently identified as significant individuals in the women's social networks, the influence of women's partners emerged as an independent theme. The women talked about 1) their smoking interactions with their partners, 2) temptations to smoke from their partners, and 3) their partner's smoking behavior during the pregnancy. See **Appendix III** for a complete list of quotes related to the theme of the influence of partners.

As described earlier, 15 women mentioned that their partners either currently smoke or smoked in the past. As a result, several told stories of intimate smoking interactions with their partners [n=7]. For one couple, smoking together was part of their routine at the end of the day:

Like my, my partner is like a way bigger smoker ... It would not be until four-thirty, five o' clock when my partner came home and went outside to have one [cigarette], that I would go out with him and have one, you know. (Respondent 11)

Because their smoking habits and interactions with their partners were so closely intertwined, over half of these women remarked on the challenges of trying to quit with a partner who smoked [n=8]. As one woman explained:

I married a smoker and it's hard to stay quit when the person you live with smokes. He smokes outside. He's not allowed to smoke in the car or in the house but it's still, I smell it on him and, you know, it brings back the craving of it. (Respondent 5)

Similarly, a woman who used to smoke with her husband described how this intimate time together was noticeably missing after she quit smoking:

Well, I had just moved to [name of a city] with him and he never smoked in his apartment, but when we both, well when I quit, he would go outside and we used to go outside together at night and just have our cigarette, so noticing that disappearance for a little bit was like, "oh," you know so. (Respondent 21)

Another woman anticipated that her partner's smoking will be an issue after the pregnancy. When asked if anything would make it easier to stay quit, she responded:

The only thing that I can maybe think of is my husband, if he fully quit. Not saying that because he smokes I would pick it up, but it would probably make it easier if whatever those trigger things might happen, you know what I mean, if he's not smoking that would make it easier to get rid of that, whatever the trigger is, you know? (Respondent 13)

Last, while most of the women stated that their partners approved of their decision to quit smoking during the pregnancy [n=17], the degree to which their partners altered

their own smoking behavior to support the women varied. On one end of the spectrum, several partners facilitated the women's smoking cessation by co-quitting [n=3] or at least reducing [n=3] their own smoking. As one woman described:

... I said [to my husband], "you know it would really good if you quit before she [the baby] came" because then we would, you know, both be on the same level and so he quit in Jan-, and I think it was January so it was quite a few months later but he still did it and he did it cold turkey too, so ... I think he saw like that how much it was kind of like hurting me too, to see him smoke because I, obviously if you love someone you want them to be healthy ... (Respondent 21)

She continued to explain how her husband's co-quitting will be critical to her staying abstinent during the postpartum period:

I think that if my husband was still smoking I would go back to it. Just because, I don't know, that social thing and that connection and that bond and everything but I think since knowing he quit and I feel more control over it. I think I'm fine and I, I do have total control. (Respondent 21)

Another woman proudly noted how her decision to quitting smoking during the pregnancy reinforced her partner's attempt to quit smoking:

... he sees that I don't do it, so again, he goes outside by himself and he's like, "shit what is she doing in there?" So he sees me in the house and I'm bull shitting or hanging out with the kids or I'll start a movie and he's like "well I'm gonna go out and have a cigarette." "Well okay, see you later." He's like "well damn; I don't want to go by myself". (Respondent 6)

On the other end of the spectrum, several of the women expressed frustration at their partner's continued smoking behavior during the pregnancy. While their partners encouraged the women's smoking cessation, they refused to quit smoking themselves [n=5]. One woman smartly pointed out the contradiction between the father of her children's beliefs and behaviors:

He been told me "quit smokin' cigarettes" and I'm like, "if I gotta quit, you quit." Like you know, you can't tell me to stop smoking cigarettes when you're still smoking. But he basically tryin' to say is that, that I gotta be around for the kids. "I gotta be around for the kids? You gotta be around for the kids too, not just me." (Respondent 19)

Another woman expressed clear frustration with her husband's continued smoking behavior. When asked her opinion on his smoking, she responded:

That's his life, he wants to smoke, let him. Go right ahead, anything happens, that's your, that's all on you. I tell him to quit all the time but he doesn't listen to me either, so. (Respondent 20)

Finally, a few women described how their partners felt inhibited by their own tobacco use to fully support the women's attempt to quit smoking [n=3]. Unable to cease their own addictions, the partners felt hypocritical encouraging the women to stop smoking. One woman who believed she would probably return to smoking after delivery described:

... what my husband thinks does [influence me]. But the only downfall with my husband is because he chews [tobacco], I think he feels like he's really not one to tell me to quit smoking because the problem with us both having our own separate addictions like that is we kind of just leave each other alone and it's really not good. Like, if one of us is like, if I only smoked, he'd probably bug me all the time to quit smoking. Like, I know all his friends that chew, their wives are always like, "you have to quit" or they won't chew in front of their wives or they hide it or their wives like bug them about it. But I never do, like I don't think I've ever bugged him about quitting because, you know, it all just comes back to you. So that's kind of like a bad thing, you know? (Respondent 15)

This woman and her husband acknowledged how their lack of mutual encouragement was and continues to be a barrier to both of their attempts at tobacco cessation.

Discussion

Data from 24 semi-structured in-depth interviews with women who had quit smoking during pregnancy were analyzed to understand better their intentions to resume smoking after delivery and what drives these intentions. Interestingly, when asked to rate their intention on a scale from zero to ten, half of the women had no intention (zero) to return to smoking and another third had a low intention score of less than three. However, we know from prior literature that up to 80% of women relapse within the first year.⁴ According to the Theory of Planned Behavior, an individual's attitudes, subjective norms, and perceived behavioral control predict intention to perform the behavior.⁵⁰⁻⁵¹ However, the additional variable of actual behavioral control influences an individual's ability to carry out his/her intention into behavior. (See **Figure 1** for a graphic representation of the TPB.) This disparity between intention and behavior suggests that, while the majority of women do not intend on returning to smoking after pregnancy, their actual behavioral control may be limited.

Clearly, the return to smoking after pregnancy is a very complex behavior with multiple factors driving intention and eventual behavior. This thesis focused primarily on the subjective norms component of the TPB, or how the social environment influences women's intentions to return to smoking. We used the following questions to frame analysis: How do women who quit smoking during pregnancy describe their social environment? How did this environment impact their decision to quit smoking during pregnancy? And, how does this environment impact their intention to resume smoking after pregnancy? Using these questions as a guide, three salient themes emerged from the

data regarding the influence of the social environment on these women's smoking behavior.

The first theme described the relationship between women's social interactions and their smoking behavior. For most of the women, smoking was richly enmeshed in their social lives. These women were surrounded by other smokers in their families, in their circle of friends, and at their work [n=24]. As mentioned earlier, Christakis and Fowler's social network research suggests that smoking behavior is a social phenomenon that is spread through close social ties.⁴⁰ A noted limitation of their quantitative study was that the mechanisms by which smoking behavior influences others could not be distinguished. However, with our qualitative approach, we were able to hear first-hand how the social environment impacted the women in our study. For instance, the women vividly described how social influences played a role in their reasons for smoking, such as the woman who started smoking because of withdraw from her father's secondhand smoke or the woman whose smoking escalated after working at a plumbing company. Other women described how their extensive smoking network presented temptation and created social strain during the pregnancy. Finally, when asked the scenario in which they might relapse or had relapsed in the past, a large portion of women described being in a social situation with other smokers.

This strong influence of the social environment on smoking behavior has been found in prior research to influence postpartum relapse. Women embedded in large smoking networks are more likely to relapse during the postpartum period compared to women who have few smoking friends or family members.^{9, 20, 67-68} Given this relationship, it is not surprising that another study found that 64% of women smoked

their first postpartum cigarette in the presence of another smoker.²⁰ The author of this study reasoned that having smokers in your social network provided easy access to cigarettes and smoking cues. The influence of social networks has also been confirmed in the general smoking literature as adults with greater exposure to other smokers have lower quitting rates.⁶⁹

For a few women, the social environment impacted their intentions to stay quit, in that they recognized its role as a barrier to smoking cessation after pregnancy. The most common solution was to isolate themselves from their smoking groups [n=6]. While this may be a plausible solution, it is unclear how realistic this strategy will be as several women expressed difficulty dealing with isolation from their social groups even during the pregnancy.

Moreover, the vast the majority of women in our study did not acknowledge the role these social pressures may play in their postpartum smoking behavior. Their social network of smokers did not seem to influence intention to resume smoking after pregnancy. However, the literature described above has demonstrated that the social environment is a very powerful trigger for relapse. This lack of acknowledgement may account for some of the discrepancy noted earlier between the women's intentions to stay quit and the actual known behavior. Applying the TPB, the social environment may be a negative influence on actual behavioral control. In other words, the social environment may alter women's ability to carry out the behavior, despite their best intentions. One respondent experienced this exact conflict with a prior pregnancy. She described how pressure from the other smokers in her life eventually broke down her resolve to remain

abstinent. This social pressure may be one of the unforeseen barriers preventing these women from fulfilling their intentions.

The second theme focused on the women's subjective norms, or the perceived social pressures, regarding smoking during and after the pregnancy. According to the TPB, subjective norms are composed of 1) normative beliefs, or how others view their behavior, and 2) the motivation to comply with these beliefs.⁵⁰⁻⁵¹ When asked how others responded to their decision to quit smoking during the pregnancy and would respond if they returned to smoking after the pregnancy, the women described mixed reactions.

With the exception of one woman, most respondents [n=23] reported positive encouragement from their social networks to quit smoking *during* the pregnancy, particularly from their mothers and partners. A few reported negative reactions from people who did not believe there were health risks to smoking during pregnancy [n=5]. However, these stories were often followed by statements that discounted these individuals' beliefs.

On the other hand, when asked about reactions from family and friends to smoking *after* the pregnancy, there were notably fewer responses discouraging smoking. Just over half of the women [n=15] stated that some or all of their family and friends would not approve of smoking afterwards. Another half of the women [n=14] stated that some or all of their social network would be indifferent to or even encourage the resumption of smoking after the pregnancy. Some reasoned this was because most of their social networks consisted of smokers themselves. For these women, the normative belief appears to be: while it is unacceptable to smoke during pregnancy, it is acceptable to smoke afterwards (usually qualified with as long as it is not around the infant). These

beliefs are consistent with prior research examining social support and postpartum relapse. As mentioned earlier, several women in a qualitative study reported that they resumed smoking after delivery in part because they lacked social support.⁴ They described how the protective messages against smoking often ceased as partners became more ambivalent about their smoking cessation during the postpartum period.

Interestingly, a larger portion of the women who stated their social network would be indifferent to or encourage smoking after pregnancy (9 of the 14) scored themselves greater than zero on the intention scale, meaning they had at least some intention to return to smoking. On the other hand, only 5 of the 15 women who stated that family and friends would not approve of smoking after pregnancy had an intention score greater than zero. While our small data sample does not have the power for statistical significance, this trend suggests that subjective norms regarding the acceptability of smoking after pregnancy may influence women's intentions to resume smoking. Thus, the subjective norms of the TPB may be a relevant predictor of intention for postpartum smoking behavior.

The women were also asked about their motivation to comply with these normative beliefs. A few of the women [n=7] had no or little motivation to comply with what other people believed. These individuals tended to be the youngest and the oldest respondents. The majority of women [n=13] had a high motivation to comply, specifically naming their mothers and partners as the most influential people in their social network. These two individuals often were very close to the women and had aligning opinions about smoking behavior. Thus, the subjective norms of women's

mothers and partners appear to be particularly influential on their postpartum smoking intentions.

Finally, because partners were consistently identified as the most significant individual in their social network, the third theme focused on the influence of partners on the women's smoking behavior. Nearly two-thirds of the women [n=15] had partners who smoke or smoked in the past. They often described prior social interactions with their partners that involved smoking. As a result, a few of these women anticipated that having a partner who smoked would be barrier to staying quit after the pregnancy. In a review article, Mullen found that, in all but one study, having a smoking partner was a major predictor of return to smoking.²³ Similar to our sample, these studies found that 50-67% of women who quit smoking during pregnancy had a partner who smoked—representing a huge barrier for the majority of women in this population.

Also, almost all of the women described how their partner, regardless of smoking status, encouraged them to quit smoking [n=17]. However, one exploratory study confirmed that simply having a supportive partner is not enough.²³ They found that women with non-smoking partners who provided support had higher rates of smoking cessation than women with partners who provided support, but also smoked. In our study, the extent to which the women's partners modified their own smoking behavior varied. Some men co-quit or reduced the amount they smoked to support and demonstrate solidarity with the women [n=6]. Other men were less supportive, continuing to smoke around their partners or refusing to quit [n=5]. A few men were more indifferent [n=3]. While they wanted to encourage the women to stop smoking, these men felt inhibited by and hypocritical because of their own tobacco use.

As mentioned earlier, Bottorff et al. identified similar types of couple interaction patterns with respect to tobacco use.³³ The partners that co-quit or reduced their smoking resembled the *accommodating tobacco-related interaction*. Bottorff found that in these couples, tobacco use was openly discussed and goals for smoking cessation were made in agreement. On the other hand, the men that continued to smoke or were indifferent to their partner's attempt to quit resembled the *disengaged tobacco-related interactions*. In this type of interaction, tobacco use was viewed as a personal decision that was not discussed. Attempts by the women to encourage their partners to quit were met with refusal. Bottorff identified a third *conflicted tobacco-related interaction*, in which the women's tobacco use was characterized by shame, monitoring, and hostility by non-smoking partners. We did not find this third type of interaction in our sample. However, we did not specifically probe into the women's interactions with their partners regarding tobacco use and might not have uncovered this interaction.

Unfortunately, prior research and the results from our study suggest that the social environment can negatively influence postpartum smoking behavior. However, by the same token, this network phenomenon can also be exploited to encourage positive health behaviors, such as smoking cessation. Christakis and Fowler found that smoking cessation by a spouse decreases a person's chances of smoking by 67% and cessation by a friend decreased chances of smoking by 36%.⁴⁰ Several of the women endorsed this idea too, as they believed that their smoking cessation would encourage their partners to quit smoking.

Moreover, the women themselves are evidence to how social pressures can lead to positive health behaviors. While smoking during pregnancy was acceptable several

decades ago, it is no longer tolerated in most social networks. For instance, from 1990 to 2000, the PRAMS rate of self-reported smoking during pregnancy declined from 18.4% to 12.2%, a 34% decrease.⁷⁰ In part because of these changing societal pressures, 78% of the women we screened who smoked reported quitting during pregnancy. Thus, they have already taken the first step towards lifelong abstinence.

From our analysis of subjective norms, the current normative belief in many of these women's social networks is that, while it is not acceptable for a woman to smoke during pregnancy, smoking after pregnancy is tolerable. The challenge now will be to change the network norm to endorse the idea that smoking is unacceptable *both* during and after pregnancy. Moreover, if we can help these women successfully quit smoking, they may be able to influence their partner, family, and friends to quit as well, continuing the spread of smoking cessation.

In fact, this network phenomenon has been utilized to improve other health behaviors. Christakis and Fowler similarly applied the concept of social networks to understand the recent rise in obesity.⁷¹ While they found that obesity was largely spread through close social ties, they also believed that social influence could conversely be used to slow the spread of obesity. Social support from family and friends has been associated with long-term adherence to diet and exercise modifications. Specifically, they cite a weight loss and maintenance study that found that respondents joining a weight loss program with three other family or friends had a significantly lower dropout rate of only 5% and 33% greater weight loss at 10 months compared to those who participated alone.⁷² Perhaps this same "buddy system" can be used to help women who quit smoking with pregnancy stay quit afterwards.

There were several limitations to this study. First, our sample population was limited to a single hospital in state with one of the lowest smoking rates in country.⁶⁵ As a result, the smoking community in our sample population may be particularly marginalized, leading to a unique perspective. However, as described above, our findings mirrored those found in prior qualitative and quantitative research studies. This suggests that our results may be generalizable to greater smoking communities.

Second, because the women were interviewed at a single time point during their postpartum hospitalization, we lack follow-up data about whether or not their intentions predicted actual smoking behavior. However, because the purpose of this qualitative study was to understand the factors influencing intention (not actual behavior), a conscious decision was made not to follow the women into the postpartum period. Instead, these findings will inform a future prospective study that will follow the women through several time points after delivery.

Third, as our study relied on self-reported data, we do not know for certain if these women truly abstained from smoking or the extent to which they may have relapsed during the pregnancy. Other studies have used cotinine levels to confirm smoking status as several researchers have found low correlation between degree of self-reported smoking and cotinine level.⁴⁷ This could explain why our pregnancy smoking cessation rate of 78% was much higher than rates reported in the literature, ranging from 20-45%.² However, the aim of this study was to understand the story of the *self-identified* woman who quit smoking during pregnancy. These are the women we ultimately wish to target our interventions. Thus, it was more important that the women self-identify as

individuals who quit smoking during pregnancy (which they all did with the initial screening question) than if they actually fully quit.

Finally, a challenge for all research on socially sensitive topics is social desirability bias. Smoking can be a socially undesirable behavior, especially in healthcare settings. Because the women were interviewed by healthcare professionals in a hospital, the women may have felt constrained in voicing their true opinions and responded in a manner they viewed as more favorable (e.g. that they stopped smoking as soon as they discovered they were pregnant or that they have no intentions of returning to smoking). With this in mind, we purposely presented ourselves as open-minded and non-judgmental during the screening and interview. Nonetheless, it is unclear the extent to which social desirability bias influenced the women's responses.

In conclusion, the results of our qualitative study suggest that the social environment influences the intentions of women who quit smoking with pregnancy. Because most women were embedded in large social networks of smokers, several anticipated that the other smokers in their lives would be a barrier to staying quit or be associated with later relapse. Moreover, women who described their subjective norms as encouraging or being indifferent to postpartum smoking had on average greater intention to return to smoking on a 10 point scale compared to those women who believed family and friends would discourage smoking. Specifically, the women identified their mothers and partners as the most influential individuals in their social network.

Future research should further understanding of the social environment's role in postpartum smoking behavior. As this was an initial qualitative study, a more extensive

quantitative study is needed to establish the generalizability of these findings. Specifically, a large, prospective study would further understanding of if, how, and the extent to which these subjective norms and intention actually influence postpartum smoking behavior. Also, research is needed to understand better this relationship with maternal and partner smoking, as these two individuals were identified as people of particular importance to these women. Finally, this thesis examined just one aspect of the Theory of Planned Behavior, the influence of subjective norms. Analysis of attitudes and perceived behavioral control is needed to determine if the TPB can appropriately be applied to postpartum smoking behavior.

Regardless, our research suggests that future interventions to prevent postpartum smoking relapse should include participation from partners, family, and friends. Ideally, interventions should focus on encouraging entire smoking niches to support each other in quitting smoking. Or, at the very least, interventions should not only directly educate women's family, friends, and partners on how to better support her smoking cessation, but also empower women to advocate for themselves. One woman in our study described how she educated her husband and mother about the effects of smoking during pregnancy and gained their support during the pregnancy. Her and our next challenge will be how to extend this support to the postpartum period.

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Figures

Figure 1. *The Theory of Reasoned Action and The Theory of Planned Behavior*

The Theory of Reasoned Action (TRA) includes only the shaded boxes. The Theory of Planned Behavior is an extension of the TRA to also include the non-shaded boxes.

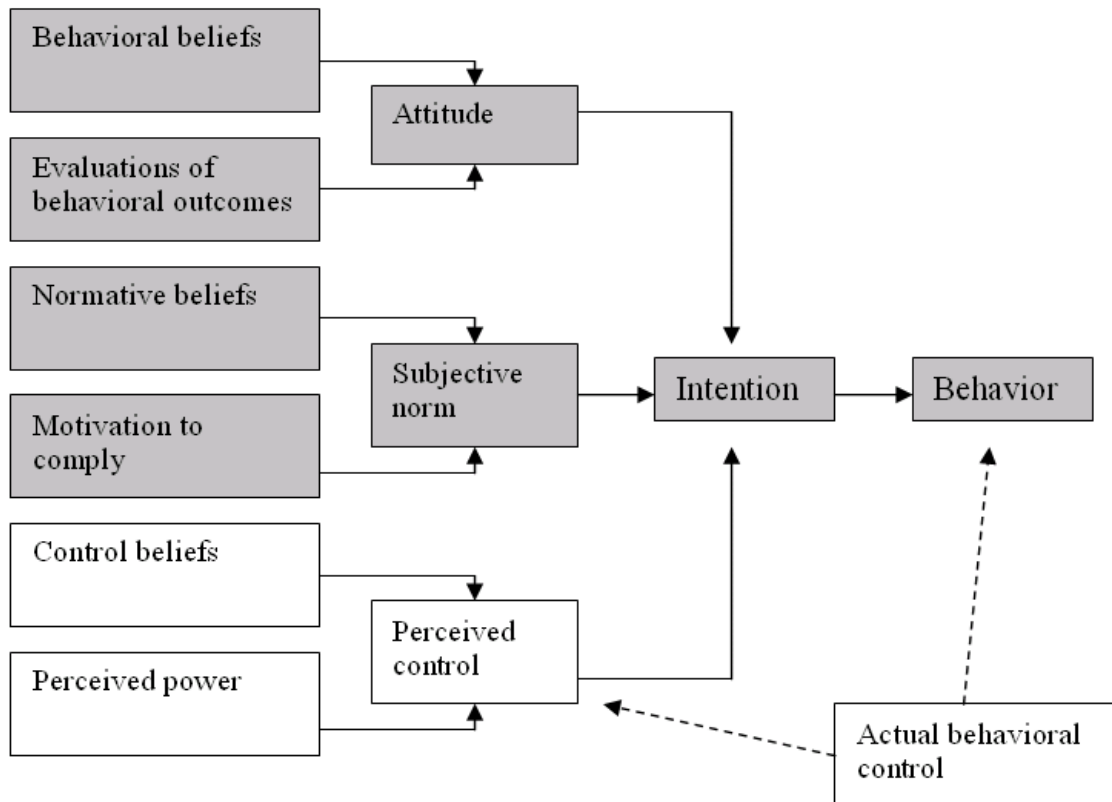


Figure 2. Percentage of women who resumed smoking by stated intention

From a pilot study [n=46], the number and percent of women who had returned to smoking by 2 months postpartum as separated by their stated intentions during the postpartum hospitalization of “No I won’t,” “I am unsure if I will,” and “Yes I will” return to smoking (p=.0001).

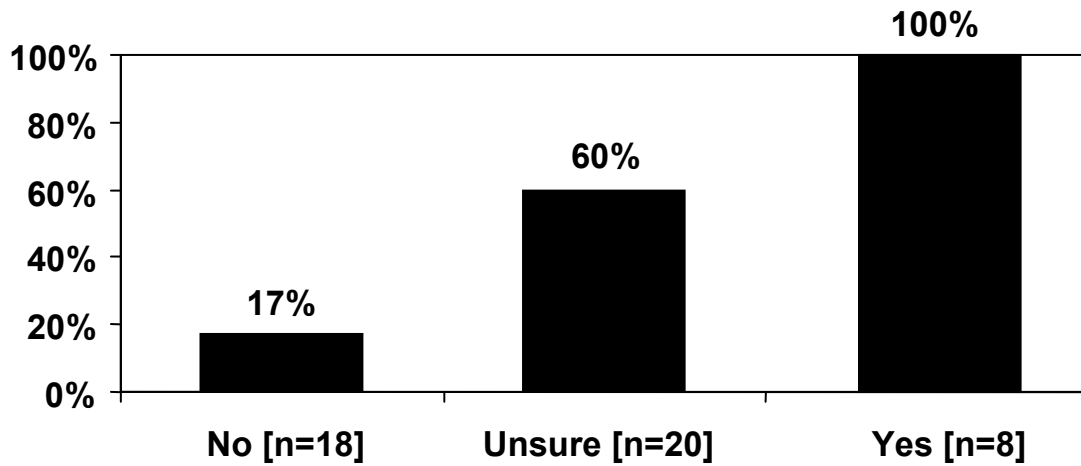


Figure 3. Study sample size flow chart

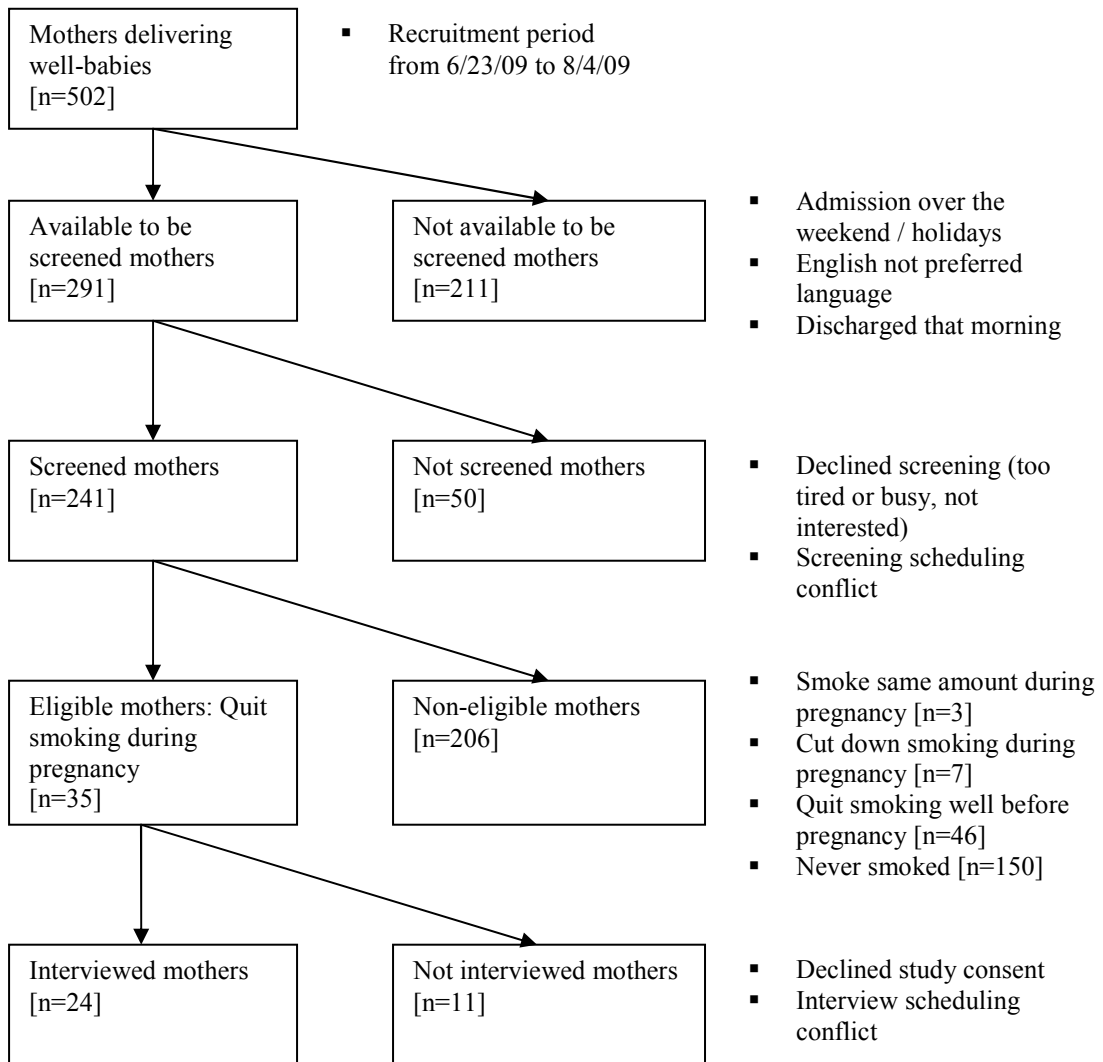


Figure 4. Interview instrument

1. First, tell me a little about your smoking:

Probes:

- When did you first start? Why?
- Have your reasons for smoking changed over the years?
- When did you smoke? Where? With who? How much?
- Would you say you are addicted to smoking?
 - What does it mean to be a smoker who is "addicted"?
 - Or, not "addicted"?
- Have you ever tried to quit smoking before?

2. Now, tell me a little about your pregnancy:

Probes:

- How did you feel about becoming pregnant?
- How has your life changed since becoming pregnant?

3. I understand that you quit smoking during this pregnancy:

Probes:

- Tell me why you quit.
 - What makes you happiest about the fact that you quit smoking?
 - Any other benefits to quitting smoking during pregnancy?
 - Where did you learn this?
 - Any downsides to quitting smoking?
- What did people close to you think when they found out you quit smoking?
 - Did people expect you to quit smoking?
 - Do these people smoke?
 - How much of what they tell you to do will actually influence your smoking?
- Do you know other women close to you who smoked through their pregnancy?
 - What do you think about that?
 - What are some reasons women might smoke through their pregnancy?
 - (If "mother smoked":) What has changed since when your mother was pregnant?
 - (If "no":) What do you think when you see a pregnant woman smoking?
 - How does society view a pregnant woman who smokes?
 - Are there any people who would think it is okay for a pregnant woman to smoke?
- Was it easy or difficulty to quit? Why?
 - How much control do you have over your smoking?
 - Were there any moments during your pregnancy you felt like you wanted to smoke?
 - Did you ever smoke, even one cigarette, since quitting?
 - Do you have any strategies or tricks to keep from not smoking?
- When you first decided to quit, did you intend to continue after the pregnancy?

4. Many women who quit smoking during pregnancy return to smoking after the baby is born:

Probes:

- What you think will happen to you?
 - Have you had a cigarette yet?
 - When would it be okay to restart?
 - What will make it "pop" for you? / When do you think you have a weak moment regarding smoking?
 - What are the reasons you would return to smoking?
 - Or, not return?
- How would the people close to you respond if you went back to smoking?
 - Is there anyone who would disapprove if you went back?
 - Or, approve?
 - Would anyone else influence your decision to smoke?
 - Do you know other parents who smoke?
 - What do you think about that?
- Some women who try not to smoke after the baby is born have trouble. Would or wouldn't be true for you?
 - Are there any things that would make it easier for you not to smoke? Ex: restrictions on public smoking.
 - Or, harder / any barriers?
 - Is there anything that other people could do to help you keep from smoking?
 - What is the most important thing that will keep you from smoking in the future?

5. Taking a step back, the postpartum period is a time for many new changes:

Probes:

- In the context of your entire life and these new changes, how important is it that you continue not to smoke?
 - Are there any things more important to you?
 - What would increase the importance of not smoking?
 - What would be the best substitute for smoking in the future?
- How you picture a typical day as a new mother?
- What support do you have for the new baby?
- Who do you spend your time with? Social activities?
- How do you plan to feed the baby?
- Are you planning to go back to work? When and why that time?

6. Any other comments or questions?

Figure 5. Data collection form

Study ID _____

1. How old are you?

- 18-25 years old
- 26-35 years old
- 36-45 years old
- Over 45 years old

2. How do you plan to feed your baby?

- Breastmilk only
- Formula only
- Both breastmilk and formula

3. If you do plan to breastfeed even a little, for how long do you think you will breastfeed your baby? _____

4. Before you quit, how soon after you woke up would you usually smoke your first cigarette?

- Within 5 minutes
- 6-30 minutes
- 31-60 minutes
- After 60 minutes

5. Before you quit, did you find it difficult to refrain from smoking in places where it is forbidden? For example, in church, at the library, in the movie theater, etc.?

- Yes
- No

6. When you quit, which cigarette did you hate most to give up?

- The first one in the morning
- Any other

7. Before you quit, how many cigarettes per day did you smoke?

- 10 or less
- 11-20
- 21-30
- 31 or more

8. Before you quit, did you smoke more often during the first hours after waking than during the rest of the day?

- Yes
- No

9. Did you ever smoke if you were so ill that you were in bed most of the day?

- Yes

No

10. After you quit smoking during this pregnancy, did you smoke at all—even one cigarette?

- Yes
 No

11. Does your partner (boyfriend, girlfriend, or spouse) currently smoke?

- Yes
 No

12. Do you currently live with any smokers?

- Yes, if so, who? _____
 No

13. How old were you when you started smoking regularly? _____

14. Before this time, how many other times have you quit smoking? _____

15. On this scale from 0 to 10, please show how likely it is that you will go back to smoking.

I definitely WON'T go back to smoking	0	1	2	3	4	5	6	7	8	9	10	I definitely WILL go back to smoking
	----- ----- ----- ----- ----- ----- ----- ----- ----- ----- -----											

16. Which best describes your race or ethnicity (Check ALL that apply)

- White / Caucasian
 Black / African-American / African-Caribbean / African
 Hispanic / Latina
 East Asian / South Asian / Pacific Islander
 Other, please specify _____

17. How many other children do you have? _____

18. What is the highest level of education that you have completed up to now?

- Elementary school (kindergarten to 5th grade)
 Middle school (6th to 8th grade)
 Some high school (9th to part of 12th grade)
 High school graduate or GED
 Some college
 College graduate
 More than college

19. Do you think that your weight gain during this pregnancy was:

- Too much
 Too little
 Just right

Figure 6. Chart review form

Study ID: _____

Maternal History

Pre-pregnancy wt: _____ Post-pregnancy wt: _____

G: _____ P: _____ Ab: _____ L: _____

Age of Mother: _____

Gestational Age: _____

Prenatal complications: DM: _____

Pertinent Med/Ob/Soc Hx: _____

Substance use: ETOH: _____ Tobacco: _____ Other: _____

Intrapartum Course

Anesthesia: None: ___ Local: ___ Epidural: ___ Pudendal: ___ Gen: ___ Spinal: ___

Mode of delivery: NSVD: ___ NSVD with forceps/vacuum: ___ C/S: ___

Reason for C/S: _____

Complications: _____

Pediatrician present: ___ Reason called: _____

Infant Assessment

Well Baby Nursery: ___ NBSCU: ___ Reason: _____

APGAR: 1: ___ 5: ___

Gender: Male: ___ Female: ___

Infant weight (g): _____

Figure 7. Respondents' stated intention to return to smoking on a scale from 0-10

Respondents' [n=24] stated intention to return to smoking on a scale was from 0-10, with 0 indicating "I definitely WON'T go back to smoking" and 10 indicating "I definitely WILL go back to smoking." The range of intention scores was from 0 to 6 and the mean \pm SD was 2 ± 2 .

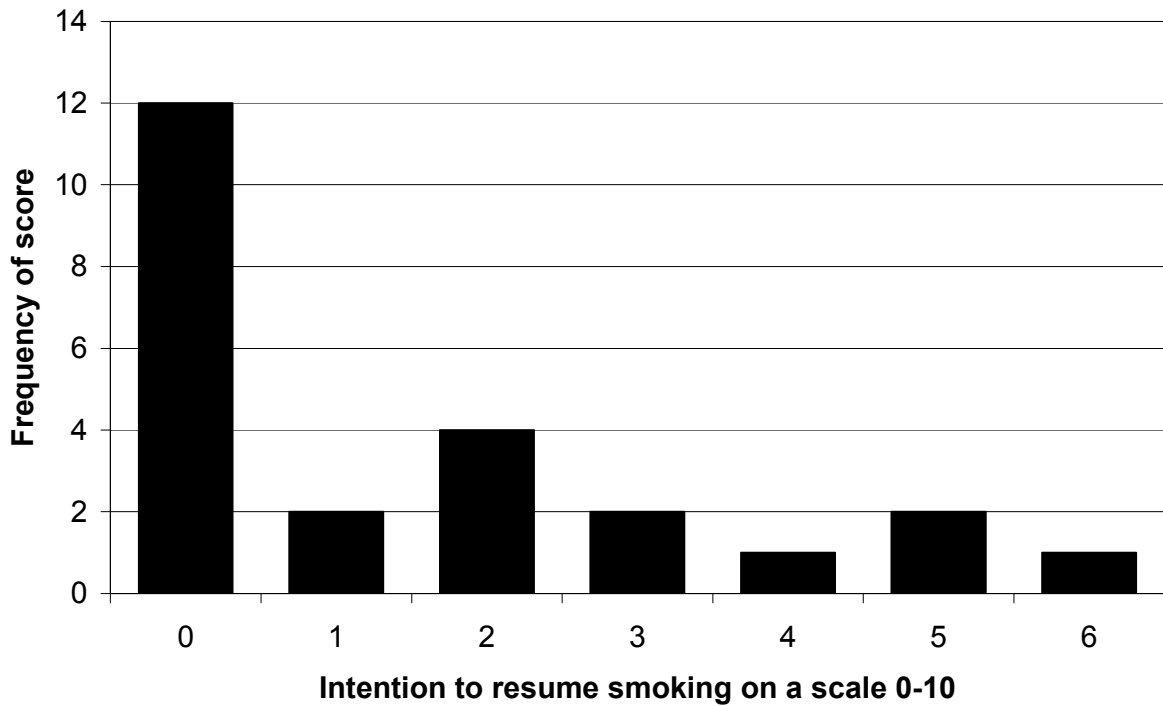


Figure 8. Final code structure

- 1) Reasons for smoking and not smoking
 - a) Initial smoking story
 - b) Reasons for smoking
 - c) Reasons for not smoking
 - i) Pregnancy-related
 - ii) Non-pregnancy-related
 - d) Differences in reasoning during pregnancy compared to after delivery
- 2) Shifting perspectives with motherhood
- 3) Thoughts on personal control over smoking
 - a) Good control over smoking
 - i) Quitting was easy
 - ii) Compliance with set “smoking rules”
 - b) Poor control over smoking
 - i) Quitting was difficult
 - ii) Temptations to smoke / weak moments
 - c) Smoking cessation requires personal control
- 4) Opinions on other types of smokers
- 5) The influence of the social environment on smoking behavior**
- 6) The impact of smell on smoking behavior
- 7) Intentions to resume or not to resume smoking
- 8) Recommendations or personal strategies for smoking cessation

Trial	Study	Setting	Length of intervention	Design	Intervention	Control	Partner Component
HOPP (Healthy Options for Pregnancy and Parenting Project) trial in Seattle and Minneapolis ¹	McBride et al, 1999	Mail, telephone calls	First prenatal visit to 3-mo postpartum	Three-arm RCT (only Treatment 2 received the postpartum intervention)	Treatment 2: • Mailed booklet, personalized letter, and three counseling calls during pregnancy • Three counseling calls and three mailed newsletters at approximately 1-mo, 2-mo, and 3-mo postpartum [n=306]	Control: • Mailed booklet during pregnancy [n=297] Treatment 1: • Mailed booklet, personalized letter, and three counseling calls during pregnancy [n=294]	• Letter
Vancouver trial ^{1,2}	Johnson et al, 2000, Ratner et al, 2000	Hospital, telephone calls	Birth hospitalization to 3-mo postpartum	RCT	• In-hospital counseling at birth • Eight counseling calls during the first 3 months postpartum [n=125]	• Usual care [n=126]	—

Trial	Study	Setting	Length of intervention	Design	Intervention	Control	Partner Component
First Portland Trial ¹	Van 't Hof et al, 2000	Hospital, pediatric offices	Birth hospitalization to 4-mo postpartum	RCT	<ul style="list-style-type: none"> • In-hospital counseling at birth • Written material and counseling at 2-wk, 2-mo and 6-mo well-baby visit [n=141] 	<ul style="list-style-type: none"> • Usual care [n=146] 	—
Project STORK (Stop Smoking for Our Kids) or Second Portland trial ¹	Valanis et al, 2000	Hospital, pediatric offices	Birth hospitalization to 4-mo postpartum	Single-blind, non-randomized, three-cohort design	<ul style="list-style-type: none"> • Motivational interviewing • In-hospital counseling at birth • Counseling by clinician at 2-wk, 2-mo and 4-mo well-baby visit [n=2055] 	<ul style="list-style-type: none"> • Historical cohort [n= 1024] 	<ul style="list-style-type: none"> • Letter
“Smoke Free Children” in Sweden ²	Fossum et al, 2004	Community child health center	1-mo before birth to 3-mo postpartum	RCT	<ul style="list-style-type: none"> • Care by nurses trained in the “Smoke Free Children” counseling method (motivational interviews) [n=26] 	<ul style="list-style-type: none"> • Care by nurses without special training [n=14] 	—

¹ Intervention included in the review article: Mullen PD. How can more smoking suspension during pregnancy become lifelong abstinence? Lessons learned about predictors, interventions, and gaps in our accumulated knowledge. *Nicotine Tob Res* 2004;6 Suppl 2:S217-38.

² Intervention included in the review article: Levitt C, Shaw E, Wong S, Kaczorowski J. Systematic review of the literature on postpartum care: effectiveness of interventions for smoking relapse prevention, cessation, and reduction in postpartum women. *Birth* 2007;34:341-7.

Table B. Demographics and smoking profile of respondents

Total respondents [n=24]

Characteristics	N (%)
	[Except for noted]
<i>Demographics</i>	
Age (years, Mean \pm SD)	26 \pm 5
18-25 years	10 (42)
26-35 years	11 (46)
36-45 years	3 (13)
Race/Ethnicity	
White/Caucasian	15 (63)
Black/African American	6 (25)
Hispanic/Latina	2 (8)
Multiracial	1 (4)
Education	
Some high school	3 (13)
High school graduate or GED	8 (33)
Some college	7 (29)
College graduate	4 (19)
More than college	2 (8)
Pre-delivery Gravida (Mean \pm SD)	3 \pm 1
Pre-delivery Para (Mean \pm SD)	1 \pm 1

Smoking profile

Age started smoking (years, Mean \pm SD)	17 \pm 4
Prior quit attempts (attempts, Mean \pm SD)	2 \pm 2
Fagerström Test for Nicotine Dependence (FTND)	
No nicotine dependence (score < 4)	14 (58)
Nicotine dependence (score 4-5)	6 (25)
Severe nicotine dependence (score > 6)	4 (17)
Lives with a smoker	15 (63)
Partner is a smoker	14 (58)
Relapsed (even one cigarette) during pregnancy	5 (21)
Opinion on weight gain during pregnancy	
Too much	9 (38)
Too little	2 (8)
Just right	13 (54)
Infant feeding plans	
Breastmilk only	11 (46)
Formula only	4 (17)
Breastmilk and formula	9 (38)

Intention to resume smoking postpartum

Scale 0 (no intention) to 10 (absolute intention)	2 \pm 2
(score, Mean \pm SD)	
Intention score > 0, or some intention to return	12 (50)

Table C. Number and percentage of respondents for each theme and subtheme

The number and percentage of respondents that endorsed each theme and subtheme on the influence of the social environment on smoking behavior is shown. For each theme and subtheme, respondents were also separated by intention to return to smoking. The number and percentage of respondents with an intention score > 0 , indicating some intention to return, is listed. For the entire sample, respondents with an intention score > 0 were 12 (50%).

Themes and subthemes on the influence of the social environment on smoking behavior	N (%)	n of N (%) with intention score > 0
<i>A. Social interactions and smoking</i>		
1. Social motivations for smoking	20 (83)	10 (50)
2. A large social network of smokers	24 (100)	12 (50)
a. Smoking parents	16 (67)	7 (44)
b. Smoking partners	15 (63)	9 (60)
c. Smoking co-workers	7 (29)	4 (57)
3. Temptations to smoke from the smokers in their social network	12 (50)	6 (50)
4. Feelings of isolation and the need to separate from the smokers in their social network	11 (46)	7 (64)

B. Subjective norms, or perceived social pressures, regarding smoking during and after pregnancy

1. Normative beliefs encouraging smoking cessation		
a. During pregnancy	23 (96)	11 (48)
i. From mothers	16 (67)	6 (38)
ii. From partners	17 (71)	9 (53)
iii. Public Disapproval	6 (25)	3 (50)
b. After pregnancy	15 (63)	5 (33)
2. Normative beliefs discouraging or indifferent to smoking cessation		
a. During pregnancy	12 (50)	5 (42)
b. After pregnancy	14 (58)	9 (64)
3. Motivation to comply with normative beliefs		
a. Low motivation to comply	7 (29)	4 (57)
b. High motivation to comply	13 (54)	6 (46)

C. Partner influence on smoking behavior

1. Smoking interactions with their partner	7 (29)	3 (43)
2. Temptations to smoke from their partner	8 (33)	4 (50)
3. Partner smoking behavior during pregnancy		
a. Co-quitting or reduction of smoking	6 (25)	3 (50)
b. Refusal to quit or indifference	8 (33)	5 (63)

Appendix

Appendix I. Social interactions and smoking

(Bolded respondent number, e.g. **Respondent 1**, indicates the respondent had an intention score > 0.)

1. Social motivations for smoking [n=20]

Respondent 2: [R1: Respondent, R2: Respondent's partner]

R1: Like when I, I started, what got me on smoking was drinking. Like I was drinking then that's when I started smoking. That's what make me have start smoking was drinking.

I: And where are things at with that?

R2: And I wonder where, who you were with when you started drinking?

R1: What happened?

I: Well, it sounds like you were with him [your boyfriend].

Respondent 3: Then it became more like a social. Kind of like the social hangout thing. You, you have the smoker friends and the non-smoker friends and you kind of always hang out with the smoker friends.

Respondent 5: You know, I go to an adult gathering, everybody's smoking, I'm standing outside, you know, and it's almost like smoking becomes part of who you are, if you do it for such a long time.

Respondent 6: Usually when I was drinking. If I went out and had a few drinks with some friends, or well when I was younger, nothing, just other friends having cigarettes. But as I got older it would be a cup of coffee in the morning, "ooh, I should have a cigarette". A drink on the weekends with my friends, "oh, I'll have a cigarette".

Respondent 6: [R1: Respondent, R2: Respondent's partner]

R1: I don't know. I enjoyed smoking. I just truly enjoyed smoking. If I was playing pool at a pool hall and havin' a few beers I just enjoyed a cigarette.

R2: The missing piece of the puzzle, you got a cigarette ...

R1: And beer.

R2: ... you got a beer ... you got ...

R1: A pool stick.

R2: ... a pool stick.

R1: So I really wanna light a cigarette.

R2: So you really want to light a cigarette.

R1: And it's not until somebody else lights one that you really want one. You're like, "oh, let me have one of those".

Respondent 6: I was a controlled smoker. You don't usually get that. You don't hear people say, "oh, I'm a social smoker"; I only smoke a cigarette when I go out and have a

drink. That's pretty much what I did. If I went out and had a drink, I don't think I've ever, ever in my life smoked an entire pack of cigarettes in a day.

Respondent 7: ... if we were going out to the club and I was having a drink or two if someone was smoking, I would just, I am sure, I don't know if you've ever done that but, you just share a cigarette with somebody you're friends with or you just have one for the night and whatever.

Respondent 8: Yeah, after awhile of smoking them and smoking them everyday, you know, the habit, you know picking up, especially being at a job where everybody smoked and there'd be like a million smoke breaks that you could go and have, you know, you're smoking a lot. A lot more than you used to ...

Respondent 9:

R: There is actually and I think people who don't smoke don't always see it that way. If you're a smoker there's always, you know, set smoke break time or so to speak and it's an opportunity where, you know, I don't know sometimes similar personality people seem to be smokers so often there's a bond there, not just over the smoking but it's like a conversational time. It's something to look forward to at break time. I'm gonna go outside and have a cigarette and chat with those people I don't normally get to chat with. When I went to, I went, one college that I went to for a short period of time, there were not a lot of smokers. There were about six of us on the entire college campus that smoked and we would always see each other in the circle because of that reason so that was a nice piece as well. So interestingly enough for me there were a lot of, there were a lot of positives, not health positives but certainly social positives and I don't know if it's connections but also just relaxing time. Even if it wasn't, you know, like often people will say, "gee that relaxes me" and I always thought so too, but sometimes I think it's just the taking a few minutes break that's the relaxing piece or, again, the social piece to it that comes along with it.

I: You said something I've never heard before, that you think there's kind of like a smoking personality?

R: I always think so. I can often look at a person, be like "you used to smoke". If they don't smoke now, I can tell they're an old smoker. I don't know what it is, often I think most smokers that I've encountered are fairly laid back people, I don't know something ... I don't know what it is, I don't know if I can pinpoint exactly what the personality is and I'm sure there's tons of different kinds of people that smoke, but I don't know, I guess it is an addiction. Maybe there's a drinking personality, so. I always seem to think that I can pinpoint somebody who was a smoker pretty easily, so. Maybe those are the people I warm to which is probably why I gravitated that way.

Respondent 9: It was more the behavior that I missed or the connection with someone that I missed or, you know, in the summertime I always associated the cigarette with sitting outside having a beer around the campfire in the evening and having that cigarette. I would associate it with camping, with other sorts of things that I found enjoyable that it

wasn't quite as enjoyable without the cigarette because I always liked it that way, that kind of thing.

Respondent 10:

I: Do you think it was a social thing 'cause you mentioned you did it with your cousin?

R: It could have been. That's probably why I started doing it, smoking.

Respondent 11: Even before I got pregnant and was smoking I wasn't like a really big smoker. Like my, my partner is like a way bigger smoker ... It would not be until four-thirty, five o' clock when my partner came home and went outside to have one, that I would go out with him and have one, you know.

Respondent 11: I mean mostly I think like when you, this is gonna probably sound really bad, when you have a beer, I know a lot of people that like socially like drink or smoke when they like drink and that's also, that's actually probably a big way, like a big thing how it started for me because I turned twenty-one and I have like quite a few friends that like will have a cigarette or ask me for one or something like when we were at a bar or something and they don't smoke any other time but obviously if you've been a smoker like it doesn't really work that way, I don't think, so it kind of sucked me in. But maybe that, maybe like going to like, going out or like something like that and drinking, I think that is the biggest thing that I've craved a cigarette during that time like than any other time like in the car or anything else. That kind of goes away but like that really stinks. A little bit.

Respondent 12: I never got, like, that addicted to it, I was, like, I smoked, like, a pack would last me like a week. You know. But, like, I would just smoke, I don't know, whenever I just felt like it. I was basically following him [my boyfriend], I wasn't really doing it because I liked it, like, I was just basically like following him ...

Respondent 13: No, well, back then it was part of the bar atmosphere as well so when you're drinking along goes a cigarette or two, so.

Respondent 15:

I: Were there any particular people that you would smoke with?

R: Umm, umm. I mean my friends, like if, especially if we're out drinking. Like that's always a hard situation because you know, social atmospheres and alcohol always seem to make you want to smoke more.

Respondent 16: It's hard to like explain, like it's hard, like everyone around me was smoking ... all my friends ... the people I lived with ... my best friend smokes like close to two packs a day. When you're constantly surrounded by it, it's hard to.

Respondent 17: You go out to a bar you're, you know, you have a drink, you smoke socially and you know, at work, if I had a stressful day and there'd be a group of us that go smoke so you know, they say, "hey, you wanna come"? So you know, you go, just

stuff like that ... I did it on my own too but not as much. I smoked more around people. Work environment, social environment.

Respondent 20: ... or if I was with a group of friends and they all light a cigarette up, I would light a cigarette up and like, stuff like that. But it's, it's not really a need, it's just you feel like you need it, so.

Respondent 21: ... the majority of it [smoking] was, I think, more social. So, you know, if you went to a bar or something and had a couple of drinks, you would smoke. My father also smokes so, it was nice sitting outside during the summer just talking and smoking and during breaks at work, usually helps, you know, to get out for a little while, so you generally gather towards the smokers and you hang out with them and smoke ...

Respondent 24: I like the fact that, especially in a professional environment. I have made more deals and more friends and more personal relationships in a professional environment smoking with one or two persons than having, you know, a group dinner, whatever. There's always, smokers always stick together and you always get a special rapport going. It is like; it is a common thread that you don't have to look for through witty conversation. It just is. So there's, there's a connection there that, that can be exploited quite nicely in a professional environment, believe it or not.

2. A large social network of smokers [n=24]

Respondent 1: Like my family smokes. I have other people in my family who smoke, so when they were smoking, I'd smell it, and I'd want one. But I didn't!

Respondent 2:

I: Tell me a little bit about why you think you started and how, how come you think it grew from there ... ?

R: It was my ... one, everybody around me was smoking.

Respondent 5: My whole family smokes, even extended.

Respondent 6: [R1: Respondent, R2: Respondent's partner]

I: And how would people close to you respond if they saw you go back to smoking?

R1: I don't know nobody ever really ...

R2: It's not a big deal 'cause everybody we're around is basically smokers.

R1: Yeah.

R2: Or used to be smokers or, you know.

Respondent 11: I guess like I have a lot of friends and my partner smokes so, his parents also smoke so, that's what makes it, makes it really hard ...

Respondent 13:

R: A good part of my work center and a lot of people that I knew, yes.

I: What about family?

R: My father did, my grandparents did, my mother did not.

Respondent 15:

R: I always knew, like, as a kid I would always pretend to smoke and you know, like when we played and were playing pretend and stuff I always smoked. So then, I guess I just probably started smoking because I thought I was old, you know.

I: Did you have any role models that smoked?

R: My parents. Almost everyone in my family smoked at one point or another.

Respondent 16: ... everyone around me was smoking ... all my friends ... the people I lived with ... my best friend smokes like close to two packs a day. When you're constantly surrounded by it, it's hard too.

Respondent 18:

I: Do most of your friends smoke, I'm just curious? Most of them do?

R: Hmm, hmm.

I: Is it something that you do when you get together like it's a social thing?

R: No, we all smoke.

Respondent 19: Like basically everybody in my family smokes cigarettes, everybody except for my mother.

Respondent 19: I guess 'cause I see what my aunts and brothers and smoke and I guess, I don't know. I just see people smoke. I don't have no reason why I smoke cigarettes, I don't know. I guess, I think I just see people smoke cigarettes ... , I was around so many people that smoked cigarettes so I guess I just wanted to try it and then I liked it and just started smoking 'em.

Respondent 22:

R: My mother and her godfather smokes, his girl smoke and ...

I: His godfather's?

R: Her godfather, yeah. I mean, I know a lot of people that smoke and I wouldn't let them force me to go back smoking.

a. Smoking parents [n=16]

Respondent 1: ... like my mother smokes. She didn't smoke while she was pregnant with me, but now she does.

Respondent 4: Well like my mother, 'cause my mother smoke, so, but, you know, it was more towards that she knew that I didn't need to smoke, or something like that.

Respondent 5: My father smoked throughout my mother's pregnancy, smoked from the day I was born till the day I [sic] died inside the house and he was a horrible chain smoker, so.

Respondent 5: I started smoking shortly after I moved out of my parents' house because I was around secondhand smoke my entire life and when I moved out I started withdrawing from it. So, I started smoking ... he [my father] was a horrible chain smoker.

Respondent 6: Like my mom smokes, so for her to get into the car after she had a cigarette was like, "uhh". And it just stinks, it was just nasty ... She smokes in our house and when you're in a closed in area opposed to outside, you, it stays on you more, so it's stronger.

Respondent 6:

I: How do you feel about your mother smoking?
R: It don't bother me.

Respondent 7:

I: So, can you tell me a little bit about what you mean when you say a true smoker?
R: Like for instance, my mother, when she wakes up in the morning she needs, with her coffee to wake up, she needs, she smokes a cigarette. She'll go outside and smoke a cigarette and she'll like need to smoke cigarettes every day.

Respondent 8: My mother was ... they just didn't want me smoking in general. They didn't really like it because they're heavy smokers and they didn't want me to end up like them so the fact that I wasn't that much of a smoker, well, I wasn't a heavy smoker and the fact that I quit, they were very proud of me.

Respondent 11: I, my, my mom, my step dad, his grandmother, I kind of watched her pass away. She had lung cancer and they all like, my step dad smokes like a chimney, like, like he'll smoke two in the car back to back. It's just like a really scary thing, you know, that I was younger and kind of like, you know, went to go see her and the fact that she died over something so stupid as smoking cigarettes and that maybe if she didn't smoke that wouldn't have happened.

Respondent 13:

I: So your dad smokes, is that right?
R: Hmm, hmm.
I: And did you grow up seeing him smoke?
R: Hmm, hmm.
I: Do you think that played a role in your own smoking?
R: I have no idea. Maybe, maybe not. He wasn't a daily fixture.
I: Okay. And did he ever tell you not to smoke?
R: He said "it's a horrible habit to ever pick up" and that, you know, he would hope that I don't.

Respondent 14:

I: Does your mother smoke?
R: Occasionally, yeah.

- I: How does she feel about your smoking in general?
 R: Oh, I started smoking before she started smoking, so.

Respondent 15: She [my mother] did when I was a child, yeah. She probably quit when I was around ten and then my dad quit maybe like seven years after that. But he like quit with Nicorette gum and he actually still, now he's just addicted to Nicorette gum but I guess it's better than cigarettes.

Respondent 17: My father used to smoke and then he quit because he was running the risk of getting emphysema, so he actually quit a long time ago.

Respondent 18: I don't think she [my mother] smoked when she had me though. She had, she started smoking later.

Respondent 20: ...she's [my mother] been smokin' for I don't know long but she never smoked during my, during mine or my brother.

Respondent 20:

- I: So, how did you feel about her being happy that you weren't smoking but then she, herself, is smoking?
 R: I tell her all the time to quit. She, she thinks she'll go through withdrawals if she quits smoking. She's been smoking since she was eleven, so.

Respondent 21: ... she [my mother] had said to me, "oh, I smoked a couple of cigarettes here and there" through my brother's birth, pregnancy and obviously he's fine and you know all this other stuff ...

Respondent 22: Well, at first I can't stand smoke. I didn't like the scent, the smell or nothing 'cause my mother smoked, but after that I was just, just started gettin' stressed, just start gettin' stressed out a lot and I couldn't deal with it so I just started picking up smoking and just, it would just relax me, it made me relax.

Respondent 23:

- R: My mom is a smoker.
 I: And how do you feel about her thinking, saying, you know, that you shouldn't smoke, then smokes herself?
 R: Well, it's kind of how she's done her whole life. She didn't want us to smoke but she smokes so, I mean I kind of got used to it. I understand where she's coming from, she don't want her kids to do it 'cause she, you know, she's going through it. I see why she told me not to because it was like wasted, no reason to smoke, so. I understand where she's coming from, you know, I didn't when I was sixteen but I do now.

b. Smoking partners [n=15]

Respondent 2: [R1: Respondent, R2: Respondent's partner]

- R1: Like when I, I started, what got me on smoking was drinking. Like I was drinking then that's when I started smoking. That's what make me have start smoking was drinking.
- I: And where are things at with that?
- R2: And I wonder where, who you were with when you started drinking?
- R1: What happened?
- I: Well, it sounds like you were with him [your boyfriend].
- R1: Yeah. Yeah I started going out with him around that time.

Respondent 3: Yeah, he's, he's the one. He smoked, he's no ... he's the typical chronic smoker. Like he started in his twenties and he never really thought, alright, well he does think its bad he knows all the consequences of it. He knows how hard it is on the pocket especially now, but he can't seem to beat it. I'm not sure if he really wants to enough, has he tried enough, I'm not sure. Now that the baby's around, maybe heh, 'cause the comfort of smoking in the house is going to be gone. He can't smoke in the car and where's he gonna do it? You know what I mean. So that might get like, discourage him. I'm hoping it will.

Respondent 5: I married a smoker and it's hard to stay quit when the person you live with smokes. He smokes outside. He's not allowed to smoke in the car or in the house but it's still, I smell it on him and, you know, it brings back the craving of it.

Respondent 6: [R1: Respondent, R2: Respondent's partner]

- R2: Don't start.
- R1: ... yeah, 'cause once you get into the habit, for a lot of people it really is hard to kick.
- R2: I mean right now I'm kicking it myself 'cause it's all psychological.

Respondent 8: We don't live together but we are together... Yeah, he's an occasional one though. He's not really a heavy smoker at all.

Respondent 9: My husband's the only one in my family, when he wants a cigarette he has to go in the front yard, go have a cigarette while we're all in the backyard having a picnic kind of thing. So those things, I think are deterrents for him too [to continue smoking] so I'm hoping that combination will work.

Respondent 10: I stopped, he still smoked cigarettes. I stopped smoking cigarettes but he continued smoking cigarettes.

Respondent 10:

- I: What are your thoughts about his cigarette smoking?
- R: It don't bother me. It's not like he's a, like a smoker, smoker like.
- I: What's a smoker, smoker?
- R: Like has like, I don't know, like has to like go through packs a day. Like he'll, like, like he don't go buy packs of cigarette, he'll go buy a loosey somewhere.

Respondent 11: I guess like I have a lot of friends and my partner smokes so, his parents also smoke so, that's what makes it, makes it really hard ...

Respondent 11: Even before I got pregnant and was smoking I wasn't like a really big smoker. Like my, my partner is like a way bigger smoker ... It would not be until four-thirty, five o' clock when my partner came home and went outside to have one, that I would go out with him and have one, you know.

Respondent 12: I never got, like, that addicted to it, I was, like, I smoked, like, a pack would last me like a week. You know. But, like, I would just smoke, I don't know, whenever I just felt like it. I was basically following him, I wasn't really doing it because I liked it, like, I was just basically like following him ...

Respondent 12: And they told me in the hospital, when I brought him [my son] here, they told me that there is somebody smoking around him. He [my partner] wasn't smoking around him, but he was smoking in the house and that was staying in the house. Like, he would smoke in the house when the baby wasn't there. But, I guess, that stays in the house and when we would go home, like when the baby would come home or something, he got sick. And obviously it's because no matter what it was getting to him, somehow.

Respondent 13: Well, I'm around it from my husband. He doesn't smoke in the house but he does smoke outside ...

Respondent 14: [R1: Respondent, R2: Respondent's partner]

I: Why was it hard?

R1: 'Cause he smell, like, not, he wouldn't smoke right next to me but you would kind have like, he would come back and kind of smelled like it and the smell of it is part of the addiction. You kind of want it and just knowing that he has one, kind of makes you want one too.

I: So how do you feel about him smoking?

R2: Oh, talking about me now? [laughter]

R1: I don't want him to smoke around his stuff [points to baby]. Other than that he can smoke all he wants. Don't come smoking in the house or around the baby, other than that, I don't, I don't care. That's his prerogative.

Respondent 17:

I: Do you mind if I ask why your husband quit?

R: No, I don't mind. He, this was I think maybe like ten years ago, he just quit cold turkey one day, I think for his health, yeah. But he's also the kind of person where if he picked one up, he'd smoke like a pack a day or whatever, whereas I can pick one up and be like done with it, so.

Respondent 19: Yeah, he don't wants me to smoke period. He been told me "quit smokin' cigarettes" and I'm like, "if I gotta quit, you quit". Like you know, "you can't tell me to stop smoking cigarettes when you're still smoking" but he basically tryin' to say is that, that I gotta be around for the kids. I gotta be around for the kids. "You gotta

be around for the kids too, not just me”, but.

Respondent 20:

R: Yeah so, about two months ago I just was like, “you know what, I’m done”. I’m like, “you can smoke but just not around me or him”.

I: To your boyfriend?

R: Hmm, hmm.

Respondent 21: Well, because my husband smoked, he just quit and, when did he quit? I want to say January or February ... So, he had quit after, so I was just, you know, kind of on the edge because he was, not that he smoked in the apartment at all. He never smoked in the apartment or anywhere around me or anything but it was really hard seeing him smoke and, you know, having to quit all these different things and watch everything but the happiest is just seeing how healthy she is right now, you know?

Respondent 24:

I: Is your husband a smoker?

R: Hmm, hmm. And he’s a part time smoker now though. When he, I mean we both, even before I stopped he, he also cut down from like a pack a day down to like a half a pack a day and now if, if he smokes five cigarettes in a day now it’s, it’s unusual.

c. Smoking co-workers [n=7]

Respondent 4: I only did that at work, ‘cause I used to work third shift so I was doing that at that time, smoking more when I went to work and stuff like that.

Respondent 8: ... someone sparks a cigarette up near you, you end up sparking one as well, you know. You’re on break from work and, you know, you spark a cigarette, it relaxes you.

Respondent 8: Yeah, after awhile of smoking them and smoking them everyday, you know, the habit, you know picking up, especially being at a job where everybody smoked and there’d be like a million smoke breaks that you could go and have, you know, you’re smoking a lot. A lot more than you used to, so you started getting a little bit of headaches, you know.

Respondent 8: ... I worked at a plumbing company as a dispatcher so everybody that worked in the office smoked cigarettes plus all the technicians that hung out at the garage ... So whenever you had spare time you would always be talkin’ and chattin’, everybody smoked a cigarette ... “Hey you want to come outside and have a cigarette?” It just starts getting like more addicting because you’re like, you’re noticing that “wow, I’m smoking a lot more than when I first started working here.”

Respondent 9: I was working in the nursing field. We were going through a state survey that was particularly stressful. A lot of other people smoked at my place of work and I,

honestly I missed a lot of the social time that comes along with that as well and so I restarted ...

Respondent 9:

I: And then what are your reasons for wanting to continue?

R: Smoking? It's just pleasure reasons. Right now because I've been quit for so long it helps, like I don't crave them so to speak. But, and I'm hoping that that continues. There are, there are no people in my immediate circle of friends that smoke so certainly that will help. It's the work environment, will always probably be the challenge. Interestingly enough, healthcare of all places, but and who knows, I might not even be in that job in a year so, we'll see.

Respondent 10:

I: So did you ever get cravings or urges to smoke during the pregnancy?

R: No. And people smoked around me like at work and stuff and it didn't bother me. Like it's not like, "oh, I need a cigarette too". Like I just, like I went outside with them and they smoked. I would sit outside with them on the porch and talked to them when they're smoking their cigarettes and stuff, it didn't bother me.

I: May I ask what kind of work you do?

R: I work for a group home.

I: Okay. So, did you, when you smoked before, would you smoke at work as well?

R: Hmm, hmm.

I: So, it sounds like you would join them often times when they did smoke?

R: Hmm, hmm.

Respondent 13:

I: Do you, so, what were reasons I guess more recently for smoking?

R: I was in the Navy and it, you couldn't really have a coffee break when you're out to sea, but if you smoked you were able to kind of just get away from your work space for five, ten minutes which was fine. So that kind of helped carry on the habit. I had my first son and quit, of course, when I was pregnant and feeding with him and still again, part of the Navy and picked it up again. Being around it was difficult to quit and stay, I guess off cigarettes. When I found out that I was pregnant with her, I quit, of course, and I don't plan on starting again.

I: Sounds like, can you tell me a little bit about the Navy environment in regards to smoking cigarettes 'cause it is kind of interesting? It sounds like there's a lot of people there that smoke.

R: There is a large amount, yeah. It's maybe fifty-fifty but when you're on a ship with five-thousand people, you know, a good majority seem to smoke just to be able to get away.

I: And so, is this kind of an unofficial rule that if you smoked you get these extra time outs?

R: Kind of. Sometimes, yeah, yeah.

I: Okay. That you wouldn't get if you didn't smoke?

R: Right.

I: That's interesting.

R: 'Cause they don't allow for breaks, quote, unquote but if you smoke, you obviously can't smoke in your work center, you have to go to a designated location on the ship to smoke.

Respondent 14: I'd be at work and I'd just come across the smell of it, it wouldn't even be the smell of it, I would just all of a sudden have like, like I'd remember the smell and I'd then be like, "wow, I would like a cigarette" ...

Respondent 23:

R: I was in customer service.

I: Okay, was there a lot, a big smoking culture there?

R: That was a big thing that I associate-, that I associated with smoking. My job was very stressful like being on the phone. I worked for [name of cellular phone company] and I could only, I'm sure you could only imagine some of the phone calls that I get so, it's very stressful to handle those phone calls and get yelled at and not be able to say anything back and that was a large portion of me smoking, working there so. That's one thing that might be a challenge, now that I think about it.

Respondent 24: I have made more deals and more friends and more personal relationships in a professional environment smoking with one or two persons than having, you know, a group dinner, whatever ... smokers always stick together and you always get a special rapport going. It is like, it is a common thread that you don't have to look for through witty conversation. It just is. So there's, there's a connection there that, that can be exploited quite nicely in a professional environment, believe it or not.

3. Temptations to smoke from the smokers in their social networks [n=12]

Respondent 1: Like my family smokes. I have other people in my family who smoke, so when they were smoking, I'd smell it, and I'd want one. But I didn't!

Respondent 3: In the first two weeks it was the bad one. I would still have that, that disgust but it would still linger in my head. Especially when the friends were around, the situations were around ...

Respondent 3: ... like if I see somebody with a cigarette, and it probably popped in my head for two seconds. "Oh, I wish I had that drink with that cigarette", you know, just it fits right. The drink and the cigarette, like it's somewhere. But it just, it just goes away. I mean it's a quick second. So I definitely defeated that.

Respondent 4: I'm just gonna try to handle things, you know, just put in my mind 'cause sometime I'll say, "okay I'm stressed" then I'll, sometime it'll be what it is, I go to mom's house and sometimes she's smoking so then sometime I just go ahead and get one an stuff. So basically just try to just deal with everything without, 'cause I don't want my kids to pick up the habit, to want to do it or want or try it. So, I'll just, just hopefully I'll just leave it alone altogether and won't even think about going back to it, so.

Respondent 5: [Narrative of when she relapsed after a prior pregnancy] I was in a group of people that were smoking outside and they passed me one and I just started smoking again ... it was almost like I didn't even stop. They just handed me a cigarette and I smoked it and then started smoking from there.

Respondent 5: My, I know my main problem was I had nobody supporting me 'cause all the women I knew that were pregnant or just had babies smoked. They didn't think anything of it.

Respondent 11: I guess the fact that I can't like control what other people do, I guess as stupid as it sounds kind of broke me down months later, you know? Being a smoker, being around people like turned into, "can I just have a drag of your cigarette?" into like buying a pack.

Respondent 11: But maybe that, maybe like going to like, going out or like something like that and drinking, I think that is the biggest thing that I've craved a cigarette during that time like than any other time like in the car or anything else. That kind of goes away but like that really stinks. A little bit.

Respondent 13: I was in the Navy and it, you couldn't really have a coffee break when you're out to sea, but if you smoked you were able to kind of just get away from your work space for five, ten minutes which was fine. So that kind of helped carry on the habit. I had my first son and quit, of course, when I was pregnant and feeding with him and still again, part of the Navy and picked it up again. Being around it was difficult to quit and stay, I guess off cigarettes.

Respondent 14: I'd be at work and I'd just come across the smell of it, it wouldn't even be the smell of it, I would just all of a sudden have like, like I'd remember the smell and I'd then be like, "wow, I would like a cigarette", but just push it aside and not think about it and got over the craving.

Respondent 15: I mean my friends, like if, especially if we're out drinking. Like that's always a hard situation because you know, social atmospheres and alcohol always seem to make you want to smoke more.

Respondent 16: ... there was my, my friend's house, her mom and dad smoke, like that house when you walk in, it's a cloud of smoke. I would sit there and I'd watch them go through, cigarette, like these, they'll light a cigarette and they'll smoke a cigarette and the next one will be lit before the first one's out. And I'd sit there and I'd watch that and after awhile it would get hard like, "are you really gonna, not gonna finish that cigarette? Are you really gonna light another one and let that one burn? What are you doing? I should just finish that for you."

Respondent 16: My best friend is one for, "want a cigarette, want a cigarette, want a cigarette, want a cigarette? I can't wait to go have a coffee and a cigarette now". I'm not

gonna stay away from my best friend, he's very thickheaded, he's one of those people that doesn't like to be told you're doing something wrong. He's one of those people that doesn't think that they're doing something wrong, so dealing with him is gonna be a little hard but I plan to get through it, so.

Respondent 18:

I: ... what else was difficult about it [quitting smoking]?

R: I don't know, other people smoking, you know, like just seeing other people smoke it was just like, "aughh" and that's it.

Respondent 19: [Discussion of a prior quit with pregnancy] But after I had the baby, like I say, I been around a lot of people that smokin' cigarettes so I went right back into 'em but that was during the time I was livin' with my mother but I don't live with my mother no more, I got my own place. So now like I, it's probably gonna be a little easier for me now, but.

Respondent 19: Like basically everybody in my family smokes cigarettes, everybody except for my mother... She's the only one that don't smoke cigarettes but everybody else, all of them smoke cigarettes so I know, like when I bring my baby home from the hospital whatever, they gonna be like, "oh, you didn't have a cigarette in so long and ...". They know I quit smokin' cigarette during the pregnancy and stuff but they don't know I completely quit so I know when I come home they gonna be like, "I know you want a cigarette" and they gonna try and pressure me into smokin' and then that's like, "oh my God", so that's why I say like when I have her I'm gonna try to stay away from my family for a little bit because I already know, 'cause sometimes my family are kind of pushy so they can get you to do things that you don't want to do so, I just gotta keep my eye, open my eye and can't let them, let them force me into smokin' cigarettes so, I'm gonna have to do what I have to do.

Respondent 20: My friend smokes same cigarettes I used to smoke. She used to leave her butt, she left one of her butts in the ashtray so I just lit it up and smoked it but then I felt so guilty afterwards so I was like, "it's not worth the guilt", so.

4. Feelings of isolation and the need to separate from the smokers in their social networks [n=11]

Respondent 3: ...because if the, like the classic group, they'll come over, I'm the only one not hanging out. Like this was like, you know, we hang out with our friends it's like "ehh, she's not smoking, she's like the party pooper", you know, I mean that's what you think, you know. Everybody else is hanging out and I'm the party pooper, you know, whatever. ... They probably think they want to quit too, but they just can't do it.

Respondent 5: My, I know my main problem was I had nobody supporting me 'cause all the women I knew that were pregnant or just had babies smoked. They didn't think anything of it.

Respondent 6: Yeah, because if it's in your circle, it's a lot easier to keep doing it. If it's not in your circle it's a lot easier to stop doing it. You hang out with people that smoke it's gonna be a lot ...

Respondent 6: My girlfriend [friend's name] just quit smoking like three, four months ago but again that's because she hangs out, she hangs out with me so because I haven't been doing it, it's no fun for her to go outside and have a cigarette by herself. She don't want to do that, she wants to sit in the house with me. Heh.

Respondent 8:

I: Are there any things that would make it easier for you not to smoke?

R: No just, you know, social events, that's about it.

I: So you mean staying away from social events?

R: Yeah.

Respondent 8: ... it was a little difficult because being there so long and smoking everyday and having to chit chat with everybody outside and no longer being able to do that, it kind of, it was definitely a bummer. So like socially it was a bummer 'cause you're always inside now. You're not really going outside because everybody's outside always smoking. So it was a little bit of a bummer.

Respondent 8: It wasn't difficult, it was just, it was kind of lonely 'cause you know, everybody who you hung out with all the time and you're the pregnant one out of 'em now so it's like they're still friends with you and you still talk to 'em on a regular basis but you somewhat feel like, not neglected but, like you're not really in the loop anymore' cause of you don't smoke and you're pregnant and stuff like that. So it's not really, it was alright though, it wasn't bad 'cause I had a really good set of friends, so.

Respondent 8: Just, you know, the socially thing at the job, that's about it and not being, well I wasn't really hanging out with anybody 'cause I was pregnant or you know, 'cause the social scenes like you know, going out to drinking with the girls or something, can't really do that no more and that's 'cause I was pregnant, so.

Respondent 9: A lot of other people smoked at my place of work and I, honestly I missed a lot of the social time that comes along with that as well and so I restarted, but never smoked in my house or around my children.

Respondent 9: And again, our circle of friends has changed a lot since having children in general and that I think that that helps if you're not around the smoking, drinking, partying crew than you're not really, you're the loner.

Respondent 16: And, it's very hard when you're in a room full of smoke, so what I did to avoid that was less trips, very less trips to that house. I think they were lucky if they saw me once every two, three months. That's just how I had to do it.

Respondent 16: Well, the fact that I moved in with my mom helps. No one smokes in

her house at all. At all. So, being in that smoke-free environment helps. The fact that I won't go to certain houses right now, I just gotta stay in that mind set where I won't go here unless I'm outside. I live with my mom, stuff like that.

Respondent 17:

I: Do you have other strategies or coping mechanisms for stress other than cigarettes?

R: ... Yeah, not being around people who smoke, which no one in my family really does. I have a brother-in-law who does and that's pretty much it. So, that definitely had a lot to do with it.

Respondent 19: I, on the other hand, I'm gonna miss it too. I'm not gonna lie, I'm gonna miss smokin' cigarettes, I know I really am because, like I said, I was used to smokin' cigarettes and like I said, my whole family smokes 'em so therefore when I go around 'em, it's, if I, right now I don't smoke cigarettes no more, they ain't gonna sit there and say, "well, I'm gonna go outside", they gonna sit there and smoke it right in my face. They gonna smoke it right in my face just so I can smoke all over again 'cause my family be funny like that, they be funny like that sometimes ...

Respondent 20:

I: Do you have any tricks or strategies to ... ?

R: I keep myself busy. Not to be around anybody who smokes but it's kind of easier now because I don't really need it and I don't like the smell of it so it just makes you turn off, so.

Respondent 21:

I: Yeah, that's great. Were there any downsides to not smoking anymore?

R: ... Probably the only other thing is like when I go sit with my dad, because you know, we were like, I'm daddy's little girl so when I go sit with him and talk with him, it's like hours we used to talk and sit there and smoke together and now he still smokes but we don't have that like relation I guess, I don't know, it's just, it's weird, I don't know how to explain it but.

Respondent 23:

I: Is there anything that would make it easier for you to stay quit?

R: I mean, staying around non-smokers probably, which I do anyway besides my mom but ...

Appendix II. Subjective norms, or perceived social pressures, regarding smoking during and after pregnancy

(Bolded respondent number, e.g. **Respondent 1**, indicates the respondent had an intention score > 0.)

1. Normative beliefs encouraging smoking cessation

a. During pregnancy [n=23]

Respondent 1: Everybody was very proud ... 'Cause I quit cold turkey. The day I found out.

Respondent 2: But you could see, when I got further, more in my pregnancy, I had like two cigarettes and I got caught with the cigarettes. That's when my family was like "I don't want you to smoke. It's not good for the baby. It's not good for you ... Why are you doing this? ... Let's talk about it". Stuff like, that's when they started being supportive and stuff. And they was like, they kept an extra eye on me, make sure that I'm not having another cigarette.

Respondent 5: And with my son it took me a long time to start smoking again and that was mainly because a friend of mine that lived next door had stopped smoking when she found out she was pregnant and she just stayed quit. So, every time I'd go outside to light a cigarette, she'd yell at me and ... so, it was a lot easier not to smoke after he was born... 'cause she'd a, she'd go to light a cigarette and I'd yell at her and vice versa.

Respondent 6: I mentioned that my sister just had a baby. She quit smoking cold turkey too and she hasn't gone back ... Now I hang out with her a lot.

Respondent 6: My girlfriend [friend's name] just quit smoking like three, four months ago but again that's because she hangs out, she hangs out with me so because I haven't been doing it, it's no fun for her to go outside and have a cigarette by herself. She don't want to do that, she wants to sit in the house with me. Heh.

Respondent 8: You know, everybody was very proud of me when I quit 'cause you know, because they understood why I was quitting and they were like "wow, that's really big of you, especially cold turkey like that and didn't need anything" and I was like "yeah I know, you gotta put your ..." it's basically a mind over matter thing. You don't need stuff to quit smoking cigarettes, you need a reason and me having a child just definitely did enough for me.

Respondent 8: She [my best friend] was proud of me. Definitely 'cause she wasn't a smoker so she was like, "I'm very proud of you, especially due to the fact that you just did it and you didn't need nothing to do it. You just did it 'cause you knew you had to do it".

Respondent 8: ... because when I decided to quit because I was being pregnant, another coworker was actually pregnant with me that she had just found out. She smoked as well so we kind of quit together ...

Respondent 9: Oh, they were all thrilled. Even people who I know in my circle that are smokers, which have been fewer and farther between the older I get, good for them as well, you know. I don't think anybody is ever disappointed when somebody quits other than they won't smoke with them anymore kind of thing.

Respondent 10: Well one of them [co-workers], 'cause she smoked, like she smoked forever, but she didn't say anything. She was like, she asked me, she said, "you stop smoking"? I said, "yeah". She said, "oh that's good", and she said, "do you plan on smoking again"? I was like, "no" 'cause I just started smoking so it's not like ...

Respondent 11:

I: Is there anybody who's supportive or who has told you not to smoke either while you were pregnant or going into the future?

R: My partner and his parents and, you know, my parents would obviously, well obviously ask me, "Are you going to quit smoking?" and I'm like, "yeah". But I mean that's probably about it. I just think mostly as a mom you should kind of be capable of making these decisions for yourself.

Respondent 12: Well, everybody knew it was because I was pregnant. And they were actually saying "oh, wow, that's good".

Respondent 15: Oh, they were always so happy and my mom's like, "I hope you don't back. You shouldn't go back 'cause you're not physically addicted and ..." My mom gets really upset because a lot of people in my family have died of lung cancer and stuff so, or cancer in general, you know, so.

Respondent 16: They were very happy, very happy. My mom in general was very surprised and very happy, so.

Respondent 16: ... when I got pregnant and at first before I knew I was pregnant I would smoke a cigarette and I'd get sick, so that's when I knew something was wrong. And then someone had said to me, "you know, smoking causes your baby not to breath for twenty minutes" and that scared me so I just threw the pack away and haven't touched them since.

Respondent 17: I definitely would have gotten yelled at by everybody if, you know, I wouldn't have wanted that.

Respondent 18:

R: They were proud of me and happy ... My mom, my uncles, they all just say if they see me with a cigarette they'd smack me, so.

I: So it sounds like, do you think they expected you to quit once you go pregnant?

R: Yeah, but then, you know, there's also "maybe she might not quit", but my uncle, his wife, well, ex-wife, she smoked with her pregnancy and the baby has, she was always sick so, he told me he'll smack me if he sees me with a cigarette.

Respondent 20:

I: Do you think people expected you to quit when you got pregnant?

R: Yeah, of course. Doctors, everybody.

I: Who else?

R: Boyfriend, just everybody in general. They don't think it's healthy at all.

Respondent 21: Well, since it was associated with pregnancy it was, you know, "oh, that's great, that's perfect", you know? Other people, obviously other people were like, "oh, I've been telling you all along to quit smoking", you know, but everyone was very, very happy about that ... I think it was more at work. I think I have a couple of father-figures there so. So yeah it was mainly at work and then my sister had quit. Wow, I think she quit two years before I did or something or maybe a year before I did, and she was like, "it's the best thing for you. I feel great". You know, so there was that positive thing right there, so. But I think it was mainly at work for that.

Respondent 22:

I: Do you think people expected you to quit when you got pregnant?

R: He did.

I: Your godfather, the godfather of your child?

R: Yeah.

Respondent 23:

R: Well, they were happy. They wouldn't of agreed too much with me smoking anyway while I was pregnant, so. It was kind of like, yeah they knew that it was gonna happen 'cause it wasn't going to happen anyway, so.

I: So, it was expected?

R: Yeah, yeah.

I: And who specifically are you thinking about?

R: With not smoking or the people that it ... ?

I: Yeah, the people that ... when you say "they", who are "they"?

R: Him, her father. I live with him, so he wasn't gonna have me, my sister, who lives with me as well, mom and dad, they wouldn't like that at all. I wouldn't even dare, it's not something that we promote, so.

Respondent 24:

I: Did they say anything about it, your mom, your husband?

R: No, it just is what it is, of course you quit smoking. There's no ...

I: So it was expected?

R: Certainly, certainly, yeah. You just ... if it had been the other side and I had continued smoking there would have been a lot of thoughts on that.

i. From mothers [n=16]

Respondent 1: She didn't smoke while she was pregnant with me, but now she does.

Respondent 4: Yeah, like my mother say, "why are you smoking?", you know. "You're not smoking like a lot, you could just try to quit" and things like that, you know, so.

Respondent 5: ...my mother encouraged and, 'cause I explained to her, 'cause I actually have affects from second hand smoking when my mom was with me, so.

Respondent 7:

I: And how did your mom react when she found out that you stopped smoking?

R: Oh, she was happy. She's happy.

Respondent 8: My mother was ... they just didn't want me smoking in general. They didn't really like it because they're heavy smokers and they didn't want me to end up like them so the fact that I wasn't that much of a smoker, well, I wasn't a heavy smoker and the fact that I quit, they were very proud of me.

Respondent 10:

R: Well, my grandmother smoked for ever, like over twenty something years. She smoked forever but she quit because there was all these, like my mom hated cigarette smoking and she always made a promise to my mom about, that she was gonna quit one day, she finally quit. And then my aunt just quit.

I: You said your mom hated cigarettes?

R: Hmm, hmm.

I: Why, do you know why she hated cigarettes?

R: She only did it; she tried it one time and didn't like it.

Respondent 12: I feel like the cigarette is just a little thing, ya know, this is what my mom tells me, "it's just a little stick, how, how is possible that that little thing is stronger then you? How, how, how is possible that you are going to let that, like, dominate you, basically". And it's true.

Respondent 13: My mother was thrilled, of course, as mothers would be.

Respondent 15: Oh, they were always so happy and my mom's like, "I hope you don't back. You shouldn't go back 'cause you're not physically addicted and ...". My mom gets really upset because a lot of people in my family have died of lung cancer and stuff so, or cancer in general, you know, so.

Respondent 16: My mom in general was very surprised and very happy, so ... She doesn't like it when her kids smoke. She has never smoked so, she wasn't a smoker, she doesn't like it when we smoke so ... but as soon as they found out I quit my mom's like, "you smoking, you smoking, you smoking"?

Respondent 17: ... and my mother knew I think, but she was, you know, happy too.

Respondent 19: My mother don't even want me to smoke cigarettes, like she said, my voice changed completely and I know it did 'cause this is the way I sound now and I didn't sound like this before.

Respondent 19: I was twelve weeks pregnant and when I found out that I was pregnant and that's when my mom said, "you know you gotta stop smokin' cigarettes right"? I said, "hah"? She was like, "you know you gotta stop smokin' cigarettes. Your grandfather died and none of this and you gotta look out for you, your baby, you know you got the kids at home" and I'm like, "oh my gosh", she did that and ever since then I have this, I had to smoke one more time before I quit, before I quit, I'm gonna quit and then after that I didn't smoke no more. My mother was on my back, she was like really on my back during my whole pregnancy making sure I didn't smoke cigarettes. My mother even stayed at my house for a month to make sure I wasn't smokin' no cigarettes 'cause she sayin' it's changing me, it's changing my voice. She hears a different tone in my voice and she said she didn't want me to smoke no cigarettes. So, since I've been pregnant she been on me from smokin' cigarettes and I'm tired of my mother riding my back so, I'm just givin' it up, I'm just givin' it up.

Respondent 20: My mom wanted me to quit. Nobody really, nobody really thought anything of it 'cause they, I didn't really smoke in front of anybody. I didn't like to, it was kind of like a secret thing.

Respondent 20: ...she's [my mother] been smokin' for I don't know long but she never smoked during my, during mine or my brother.

Respondent 21: My mom was, she's always wanted me to quit smoking but she's like, "you know, you have to do it on your time", type of thing and she, she had said to me, "oh, I smoked a couple of cigarettes here and there" through my brother's birth, pregnancy and obviously he's fine and you know all this other stuff ...

Respondent 22: My mother happy, she don't want me goin' back to cigarettes.

Respondent 23:

R: Well, they were happy. They wouldn't of agreed too much with me smoking anyway while I was pregnant, so. It was kind of like, yeah they knew that it was gonna happen 'cause it wasn't going to happen anyway, so.

I: So, it was expected?

R: Yeah, yeah.

I: And who specifically are you thinking about?

R: With not smoking or the people that it ... ?

I: Yeah, the people that ... when you say "they", who are "they"?

R: Him, her father. I live with him, so he wasn't gonna have me, my sister, who lives with me as well, mom and dad, they wouldn't like that at all. I wouldn't even dare, it's not something that we promote, so.

ii. From partners [n=17]

Respondent 2: [Boyfriend] I told her every day she go without a cigarette, from here I'm gonna quit, but I think I'm gonna renege on that. I'm gonna try, just to make sure she don't smoke no more. Because that's less smoke around the baby so ...

Respondent 4: ...and also the kid's father, he didn't like the smoke neither so, he was also too, saying that I should just quit, and things like that.

Respondent 5: At first he [my husband] didn't understand it and when I became pregnant with my daughter, he didn't understand it at first until I told him you can either smoke or you can leave. And then he started doing the research with me and stuff like that, you know, he started asking me questions and now whenever he even sees a pregnant woman standing at the side of the road smoking, he starts on a huge rant and she shouldn't be smoking and it's not healthy and ...

Respondent 6: [R1: Respondent, R2: Respondent's partner]

I: So with each pregnancy ...

R1: I just stopped.

I: And why would you do that?

R1: It was ...

R2: For the sake of the baby.

Respondent 8: He was very proud of me ... Especially because, you know, it's his son as well.

Respondent 9: Even my husband who loves to smoke was certainly all in favor of me quitting especially for the sake of the pregnancy and the child, so.

Respondent 10: No, he was happy I stopped, 'cause I didn't, I don't know, not like I, I wasn't addicted to cigarettes so they're just something to do.

Respondent 12: And he was pretty worried too. He told me "I don't want you smoking no more because you're pregnant with my kid, so you gotta take care of yourself". So I just stopped it, plus I wasn't smoking that much, so I was pretty easy for me to just stop it.

Respondent 13: My husband was happy, of course. He does still smoke and I nag him everyday to stop.

Respondent 14: [Boyfriend] Yeah! I would knock your ass out if you did. [laughter] ... 'Cause of my baby. It's gotta be healthy.

Respondent 15: [R1: Respondent, R2: Respondent's partner]

I: And what about your husband, what did he think?

R1: I think he was happy.

R2: I was very happy, I'm very happy for her because she's weird, she doesn't smoke like, I wouldn't say she smokes like a regular smoker. Like say, she might go sometimes ten days and have one cigarette a day and then for two weeks straight smoke half a pack a day. So, she's not a consistent smoker, so it bugs me like, I wish she didn't smoke, of course but I chew so who am I to, who am I to talk but I was very proud of her when she quit.

Respondent 17: I mean my husband was happy 'cause, you know, it's his baby, he doesn't want, you know, risk anything

Respondent 19: Oh yeah, he knows, he's supporting me. He don't even want me to smoke 'cause he wants me to breastfeed. Yeah, he don't wants me to smoke period. He been told me "quit smokin' cigarettes" and I'm like, "if I gotta quit, you quit". Like you know, "you can't tell me to stop smoking cigarettes when you're still smoking" but he basically tryin' to say is that, that I gotta be around for the kids. I gotta be around for the kids. "You gotta be around for the kids too, not just me", but.

Respondent 20:

I: Do you think people expected you to quit when you got pregnant?

R: Yeah, of course. Doctors, everybody.

I: Who else?

R: Boyfriend, just everybody in general. They don't think it's healthy at all.

Respondent 21:

I: And what about your husband, how did he feel?

R: He, he wanted to quit before and he was more adamant about it before, than I was.

I: Quit himself or that you should quit?

R: Both of us should quit and he was always like, "yeah, I have to, you know, I have to think about quitting and blah, blah, blah" and I was like, "oh, I love smoking, I'm not gonna quit" and it was funny because I, I just quit cold turkey and he was like, "I know I have to quit, I know I have to quit" and I, I didn't know if he was gonna and I said, "you know it would really good if you quit before she came" because then we would, you know, both be on the same level and so he quit in Jan-, and I think it was January so it was quite a few months later but he still did it and he did it cold turkey too, so.

Respondent 23:

R: Well, they were happy. They wouldn't of agreed too much with me smoking anyway while I was pregnant, so. It was kind of like, yeah they knew that it was gonna happen 'cause it wasn't going to happen anyway, so.

I: So, it was expected?

R: Yeah, yeah.

I: And who specifically are you thinking about?

R: With not smoking or the people that it ... ?

I: Yeah, the people that ... when you say "they", who are "they"?

R: Him, her father. I live with him, so he wasn't gonna have me, my sister, who

lives with me as well, mom and dad, they wouldn't like that at all. I wouldn't even dare, it's not something that we promote, so.

Respondent 24: I mean my husband is very supportive and he knows that it's very difficult and you know, all of that ...

iii. Public Disapproval [n=6]

Respondent 9: I think that is an expectation when you're pregnant especially, it's like even if you have issues that you're just supposed to give them up, and still, and it's suppose to be easy and it's not easy. You do it but it's not easy.

Respondent 9: You know it's interesting, you can have a glass of wine here and there when you're pregnant but most people don't. And I just had a wine cooler the other day, and it's like pretty mild, and I never drank with my son's pregnancy ever, even though you can, because it looks weird and people give you dirty looks if you're out there smoking with a big belly sticking out, that's obvious, or if you're drinking even though your doctor says it's fine. It's that expectation you're not supposed to and "you must be trashy or have some issue", "why would you do that kind of thing?"

Respondent 10:

I: How do you think society views a pregnant woman smoking?

R: They'll, they look at them funny ... Because I go buy cigarettes for people and they just look at me like "okay, what do you need a cigarette for"? When I was pregnant, but it wasn't for me, I would go get it for somebody. They'd say, "would you go get me a cigarette"? I was like "fine, whatever" and I would go and they would look at you like funny looking like.

Respondent 11: ... it's pretty universal like when you see a mother pushing a carriage smoking a cigarette or smoking a cigarette in general with kids like I'm sure a lot of moms would like be judgmental of that as many as they'd like to, or as much as they'd like to say they wouldn't, you know. I don't want to be associated in that way either ... If you look at somebody that's not smoking with her children and look at somebody at the park that's having a cigarette and her children are playing, I mean like most mothers are thinking like "wow, you know, that's disgusting". Especially ones that don't smoke.

Respondent 14:

I: How do you think society views that woman smoking a cigarette who's pregnant?

R: They probably look down upon it, yeah. 'Cause it's unhealthy and people, not everybody smokes so they don't understand the cravings of it, so that they don't really see that, like some people feel like they need it, but they're very judgmental about it, which I would be too coming as a smoker, it was easy for me to quit so, yeah.

Respondent 15: Yes, I think people expect, I don't think people expect people to smoke

even if you're like the heaviest smoker in the world. Nowadays if you see a pregnant woman smoking it's pretty like, it's pretty disgusting...

Respondent 18:

I: And how do you think society views a woman who's pregnant and smokes?

R: Disgusted, probably look at them like, "oh, she's pregnant and she's smoking".

b. After pregnancy [n=15]

Respondent 2: And having somebody helping you doing it. Support you and stuff. Yeah, like, it can help you stop doing certain things. Just having support. Having somebody there that cares and loves you.

Respondent 4: Well, the kid's father, he also, when he talks to me about just not smoking or something like that, it's just talking about it mainly, just saying, "Okay. Well, I don't need it and I know I don't need it". So I think more just saying that I'm not gonna do it, that sometimes is good.

Respondent 5:

I: So, how does he feel about, how would he feel, do you think, if you went back to smoking?

R: I think he'd be very upset about it. He really would.

Respondent 5: Yeah, my husband. Yeah, he's highly against me even starting smoking after the pregnancy.

Respondent 7: I don't, I don't think I'm ever gonna get to the point where I get so stressed out that I feel like I need something because I have a lot of access to help around me so I won't feel like I'm at my wits end, so.

Respondent 7: I think they'd be upset, especially that I'm such an, like an avid like, "oh my gosh, I hate smoking" like, when I don't smoke, I bother people like so much like, "oh my gosh [cough]", like I'll put my shirt up, "[cough] please get out". It's like, like I'm so dramatic with it because I just, I guess you realize when you don't smoke how nasty it smells and how it looks like when, especially when a woman, I don't know, I just ... Even when a, I mean, even when a guy smokes like, I feel like they lose all appeal but a woman like, I don't know. I feel like women should be feminine and pretty and not be smoking.

Respondent 9: I'd get harassment. Even my husband who smokes picks on me, "you did it that long why did you go back". Course he's never done it that long and so you know he doesn't really put himself in that situation. My parents hate it, my father quit smoking when I was born so that I would never, and my sister and I both ended up smoking at some point interestingly enough. Maybe again it's a personality thing that lends itself that way. But most of my general friends would be upset with me and probably speak up about it or it would be obvious.

Respondent 10: Probably my, my daughter's grandmother. She probably wouldn't be okay with it if I went back to smoking ...

Respondent 12: They would be really pissed because I'm doing so much better, I'm not smoking anymore and if I did it for all this long, why would I go back? Why would I mess it up like that when I already got used to not smoking, why would I go back? If I go back it's because I want to, it ain't because I need it or something, it would be a really stupid choice if I do that, but I'm not gonna.

Respondent 15:

I: How would people close to you respond if they found out you went back to smoking?

R: Well, I know my mom would like give me hell forever, like she would just like drive me up a wall 'cause she can be like a huge nag and like she's already told me, like gone on and on and on and on and like given me these big lectures about how she'll be so disappointed and she'll be so upset and so like I, if I do go back to smoking I'm definitely not letting her know because, uh she'll drive me crazy.

Respondent 16: They'd be upset, they really would. Because I've done so well without it, so.

Respondent 16: Yeah, I'm a very, very lucky person. My support group is huge. I have, my aunt is a social worker, counselor-type person so I can always call her for advice. My mom is a, is a, is a counselor-type person, who always has advice for people. My grandmother, my grandmother smoked from the time she was fifteen until she was sixty or seventy something and she just stopped, just quit. A long time, so I have someone that can relate to me.

Respondent 18: Well my mom would definitely say, "damn, you went for so long, why do you need it now?" But that'd be it, they wouldn't care.

Respondent 19: Oh yeah, oh yeah. [My partner would be] On my back, I told you he don't want me smokin' cigarettes. He don't, what I mean 'cause he talking about it's not cute for women to smoke cigarettes so, but basically ...

Respondent 19: My mother, she's helping me out. She's, she's determined for me not to smoke cigarettes.

Respondent 19: If I still got my, if my mother still do what she do, stay on my back the way she do, I don't think I go back into smokin' cigarettes because augh, she, my mother's very strict. She's mean, she's real mean.

Respondent 20: My mom, I know would make sure that I don't smoke around him. She'd be on top of things like that but I don't think anybody else would care.

Respondent 20: But my boyfriend definitely doesn't want me to go back so he's more the reason why because I don't want, maybe if I quit he'll quit. So, you never know.

Respondent 21: They'd probably be in disbelief and probably want to smack me. [laughs] Probably want to smack me because I've come this far already. ... Probably everyone now, probably even, even my dad, you know, 'cause it's, it's a hard road to travel and then you just go back to it? Why, what's the point? You know, so.

Respondent 22:

- I: How do you think people close to you would respond if you went back to smoking? How do you think your mom would react, the godfather would react?
 R: Knowing him he cuss me out 'cause he wouldn't want me be around her smoking.
 I: Wait, did you say he'll cuss you out?
 R: Yeah, that's how, he's strong about his opinions and like I said I got him for the support system too ...

Respondent 23: They would be disappointed, obviously disappointed, but I mean they wouldn't despise me for it but they would be disappointed and for me starting to smoke again. I don't like people being disappointed in me, but that's not the reason I'm not going back.

2. Normative beliefs discouraging or indifferent to smoking cessation

a. During pregnancy [n=12]

Respondent 1: Yeah, but I wasn't directly told to [quit smoking]. I just wanted to.

Respondent 5: I had, it went both ways. I had people saying that, smoking didn't affect the baby. That they didn't understand why I was throwing such a big deal why they were smoking because people wouldn't think twice about trying to walk in my house with a cigarette, so there's a huge boundary issue there.

Respondent 5: They'd tell me I was over reacting and, you know, I only know their smoking when I smell it or see it and I told them it didn't matter because it's still not healthy for the baby. And even on the playscape, I'd take my other two kids to a playscape when someone would walk by with a cigarette; I'd be screaming my head off.

Respondent 5: My, I know my main problem was I had nobody supporting me 'cause all the women I knew that were pregnant or just had babies smoked. They didn't think anything of it.

Respondent 6:

- I: And what did people think about, what did people think when you stopped smoking?
 R: They didn't really even pay attention to it. I think when they found out I was pregnant they'd say, "are you going to keep smoking"? But it was always "no, of

course I'm not going to keep smoking"... They are just curious 'cause people, most people, it's very hard to stop, they have a lot of problems and for me it was never, I never had a, it wasn't complicated for me, I just stopped.

Respondent 7: Oh, even the like ... like everyone says, "oh, you know, my mom smoked with me or this and that and I turned out fine". Which, I mean, there are kids that have turned out fine through smoking, I mean, maybe cigarettes weren't as potent back then or, I don't know, if the risks are just now being revealed now more so than back then but, I mean, obviously there's evidence that you could be okay through it but I just feel, I feel kind of gross within myself smoking and I know it's not good for your body so if I'm gonna be responsible for someone else I'm not gonna subject my child to that.

Respondent 9: But this individual was like, "well, my wife smoked a couple of times during the pregnancy and what's the biggest deal, you know, a little low birth weight", and it's another nurse

Respondent 10:

I: And what did people close to you think when they heard that you stopped smoking?

R: Nothing, I don't know.

I: They didn't say anything about it?

R: Umm, Umm.

Respondent 11: I don't think she [my mother] has like that big of an opinion on it. She doesn't smoke so of course she doesn't like it but I don't think she'd really say anything to me either way but I'm sure she wouldn't ...

Respondent 11: My partner and his parents and, you know, my parents would obviously, well obviously ask me, "Are you going to quit smoking?" and I'm like, "yeah". But I mean that's probably about it. I just think mostly as a mom you should kind of be capable of making these decisions for yourself.

Respondent 12: I remember there was a girl that she smoked cigarettes and she, like, offered me to smoke one. And I said "no" and she said "why?" and I said "because I'm pregnant, what do you mean why?". And she said "oh, there's nothing wrong if you smoke cigarettes while you're pregnant" and, like, I kinda feel bad by saying that but I was like, "yeah that's why your daughter came out when she was four months and that's why she weighed a pound". She kinda felt upset, but that made her think a lot. And that, basically, I told her, like, straight up, like, that's the reason I don't want to smoke a cigarette. Because I know that's not going to do any good to my kid.

Respondent 13: But overall, I mean there was no, you know, joyous celebration or anything like that but yeah, my mother was thrilled, yeah.

Respondent 14:

- I: Do you, did people, how did, what did people think when they found out that you quit?
- R: I didn't really tell too many people, I just did it. I didn't really do it. I didn't really tell anyone. I actually moved from California so.
- I: Oh, where in California?
- R: Like [name of place], around Disneyland yeah, so. None of my friends are really around me, so the only person that really seen the change is him and my mom, so.

Respondent 20: Nobody really, nobody really thought anything of it 'cause they, I didn't really smoke in front of anybody. I didn't like to, it was kind of like a secret thing.

Respondent 21: My mom was, she's always wanted me to quit smoking but she's like, "you know, you have to do it on your time", type of thing and she, she had said to me, "oh, I smoked a couple of cigarettes here and there" through my brother's birth, pregnancy and obviously he's fine and you know all this other stuff ...

Respondent 21: The only thing I heard, because you hear, you know, older people always talking about, "oh, I smoked through my pregnancy, nothing happened", you know and maybe you should smoke through it because the, the baby's weight, she won't gain as much, or whatever, so I heard decreased birth weight but, but that was about it. Nothing else so, and she was almost nine pounds.

b. After pregnancy [n=14]

Respondent 1: A lot of'm would probably be disappointed [if I resumed smoking]. But some of'm, like my mother smokes. She didn't smoke while she was pregnant with me, but now she does.

Respondent 5:

- I: How would people close to you respond if you went back to smoking?
- R: They probably wouldn't care.

Respondent 6: [R1: Respondent, R2: Respondent's partner]

- I: And how would people close to you respond if they saw you go back to smoking?
- R1: I don't know nobody ever really ...
- R2: It's not a big deal 'cause everybody we're around is basically smokers.
- R1: Yeah.
- R2: Or used to be smokers or, you know.

Respondent 8:

- I: How would your mom, your best friend, your dad, respond if you went back to smoking?
- R: They'd be disappointed. They, you know, I'm grown so I wouldn't get too much, you know, of a hassle and especially from them since they do it as well but they would be disappointed 'cause they want better for me.

Respondent 9: But then the work people, I don't know because a lot of them smoke probably could care less and it would just be like "whatever".

Respondent 10:

I: Okay. Is there, is there any, how would people close to you react if you did go back to smoking?

R: They wouldn't react; they wouldn't say nothin' to me.

I: Your, your current partner?

R: No, he wouldn't say nothin' to me.

Respondent 13:

I: How would people close to you respond if you went back to smoking?

R: I'm sure they would probably be slightly disappointed.

Respondent 14:

I: How would your, your partner or your mother respond if you did go back to smoking?

R: I don't think, would you care? I don't think they would care, no.

Respondent 15: [Husband] I'd be disappointed, just so, just the fact that, you know, if she smokes in the car like I, second hand smoke for my kid's, that's no good. But again it comes back to the point again that I chew and I can't, who am I to tell her what, you can't smoke? ... I'd be disappointed but the same time I, I can't judge her, she's my wife and I love her and I can, I can I understand how hard it is to try to quit once you're hooked.

Respondent 16: My best friend is one for, "want a cigarette, want a cigarette, want a cigarette, want a cigarette? I can't wait to go have a coffee and a cigarette now". I'm not gonna stay away from my best friend, he's very thickheaded, he's one of those people that doesn't like to be told you're doing something wrong. He's one of those people that doesn't think that they're doing something wrong, so dealing with him is gonna be a little hard but I plan to get through it, so.

Respondent 17: They understand, I mean you know, when you go through difficult times, you know, sometimes, you know, everybody has their own coping mechanisms and this is one for me, even though it's not a major one ... But again, it's not like I smoke in our house, I don't all day. I didn't smoke while pregnant so ...

Respondent 18:

I: And what about your uncle, what do you think he would think?

R: He wouldn't care.

I: He wouldn't care?

R: I'm not pregnant no more.

I: So, his focus was on when you were pregnant?

R: Uhh, huh.

Respondent 19: Like basically everybody in my family smokes cigarettes, everybody except for my mother ... She's the only one that don't smoke cigarettes but everybody else, all of them smoke cigarettes so I know, like when I bring my baby home from the hospital whatever, they gonna be like, "oh, you didn't have a cigarette in so long and ...". They know I quit smokin' cigarette during the pregnancy and stuff but they don't know I completely quit so I know when I come home they gonna be like, "I know you want a cigarette" and they gonna try and pressure me into smokin' and then that's like, "oh my God", so that's why I say like when I have her I'm gonna try to stay away from my family for a little bit because I already know, 'cause sometimes my family are kind of pushy so they can get you to do things that you don't want to do so, I just gotta keep my eye, open my eye and can't let them, let them force me into smokin' cigarettes so, I'm gonna have to do what I have to do.

Respondent 22:

- I: Do you think it'll be hard to not smoke because you're surrounded by so many smokers, like your mother smokes?
 R: My mother and her godfather smokes, his girl smoke and ...
 I: His godfather's?
 R: Her godfather, yeah. I mean, I know a lot of people that smoke and I wouldn't let them force me to go back smoking.

Respondent 22: But my mother, I believe she will say "don't bring cigarette around my baby, don't smoke around her. Make sure you change your clothes. Go put your clothes in the dirty clothes, go take a shower, wash your hands, stuff like that. Wash your face and then go around the baby". That's my mother, I think she would say something like that.

3. Motivation to comply with normative beliefs

a. Low motivation to comply [n=7]

Respondent 10:

- R: I wouldn't care.
 I: So, so do you care what these people think?
 R: What everybody thinks?
 I: Yeah. No?
 R: Umm, umm.
 I: So you do your own thing?
 R: Hmm, hmm.

Respondent 13:

- I: And how much of what they tell you to do and their opinion of smoking while pregnant does that affect, you know, your own actions?
 R: Yeah, it doesn't, no, no.

Respondent 14: I, I think that either way if I felt like I wanted to smoke I don't think that

I would have really cared what he [my boyfriend] thought, 'cause if I wanted to I would have wanted to and I'm not really that kind of person who care what he thinks.

Respondent 15: [R1: Respondent, R2: Respondent's partner]

Commenting on her mother lecturing her about returning to smoking:

I: And the way that you say that makes me think that what she's saying, again the lecturing, isn't really gonna impact what you do?

R1: No, it doesn't but she doesn't understand that, like.

R2: Zero, zero, impact. Other than ...

R1: Yeah. Other than it would just make me hide it from and lie to her, like just like not what I want to do at thirty years old, you know what I mean, but.

Respondent 16:

I: And how much does what your mom say actually influence your smoking?

R: Not much, not, every time my mom like, she's my mom, we ignored everything. I mean when I was younger she would tell me not to and have a fit and it was done anyways and so. But she's just very happy.

Respondent 21:

I: ... you said they [your family] would disapprove of it [returning to smoking], how much would that affect if you were actually were able to stay quit?

R: I mean it affects it a little bit but I wouldn't say it's like a high percentage or anything, it's just, you know, now it's like you start a family on your own so you have that as your main core, you know and their opinions matter but I think you're kind of like living your own life now so, there's other factors that mean ten times more, you know?

Respondent 24: ... but I don't discuss those kind of things with my mother. It has nothing to do with her, you know, and not from being like a bitch either. It's like, "it's your self discipline, it's your life". I know how she feels about it. She doesn't want me smoking 'cause she doesn't want me to die so, so ...

Respondent 24:

I: And, how do think other people would feel if you went back to smoking?

R: I don't spend any time thinking about that, so. ... I don't care.

c. High motivation to comply [n=13]

Respondent 1:

I: And do you think these people, your mom, your mother-in-law, know what's best for you in terms of your smoking?

R: Yeah. Probably. 'Cause they have bad health because of it. Not horrible health, but they know more than I do.

Respondent 4:

I: And do you think these people [mother and husband] know what's best for you?

R: Well, like I say, you know, part of it, like they played a part as far as just knowing that I shouldn't and smoke and things like that.

Respondent 5:

I: And do you think ... you said before that you kind of had some mixed reactions when you stopped smoking. Do you think these people know what's best for you in terms of smoking?

R: I think at this point my husband does, but other people are, they just don't care, so.

Respondent 8:

I: Do you listen to what your parents say?

R: I definitely take all their advice into mind, I do. Like my mom is like my best friend as well. I definitely take everything she says into mind. Me and my father are not that close as me and my mother, definitely a mama's girl so I tend to pay more attention and take what my mom has to say to mind first.

Respondent 9: Yeah, I'm one of those people that does value other people's opinions and even if it's someone I don't like, I don't like if they don't like me, you know, or don't approve of me in some way. So again, that peer pressure in that way does help.

Respondent 12: Well, it really matters to me what my mom thinks because she doesn't do it. And actually she used to smoke cigarettes and she actually stopped the moment she found out she was pregnant with me. And that makes me, like, feel a lot better. That makes me feel, like, good that she did it because of me, because I was important to her. And I'm pretty sure that my kids are going to feel the same way if they know that I used to smoke, but I stopped the moment I found out I was pregnant by them, with them. So, like, I know they are going to feel the same way I feel about my mom. Like, she actually did it for me, like, she cared about me.

Respondent 15: What my parents think doesn't influence me at all, but what my husband thinks does. But the only downfall with my husband is because he chews, I think he feels like he's really not one to tell me to quit smoking because the problem with us both having our own separate addictions like that is we kind of just leave each other alone and it's really not good. Like, if one of us is like, if I only smoked, he'd probably bug me all the time to quit smoking. Like, I know all his friends that chew, their wives are always like, "you have to quit" or they won't chew in front of their wives or they hide it or their wives like bug them about it but I never do, like I don't think I've ever bugged him about quitting because, you know, it all just comes back to you. So that's kind of like a bad thing, you know?

Respondent 17:

I: And how much do what your mom, your husband, how much of what they think will actually affect your smoking?

R: Well I, you know, I definitely respect what they say and it definitely mattered more during the pregnancy.

Respondent 18:

I: Like, how much does their input really matter to you?

R: I would care because it has to do with another life that I was bringing into this world so like it took me, you know, some efforts to stop and by them telling me, you know, “you’re not smoking right?”, it really helped me.

Respondent 19:

I: Does what your mother say influence your smoking?

R: Yeah, a whole lot, a whole lot, to me a whole lot ‘cause I worship my mother. So what she say, it really would bother me, it really would bother me ‘cause I lost my grandfather from that and she keep on tryin’ to put it through my head, “stop smokin’ cigarettes, you know your grandfather died of cancer, and his lungs from cigarettes”, so.

Respondent 20: Important because they’re the two main people [mother and boyfriend] in my life that I really care about, so what they say I really listen to because they know best. He’s older, he’s twenty-five, my mom’s older too, she knows better than me, so.

Respondent 22:

I: Like does their opinion matter to you?

R: Yeah. He’s my ex, so. [talking to baby] Yeah, he’s my ex so I made him the godfather and I know he wouldn’t want that so he, he’s very supportive. He rather for her to be healthy than not be healthy because I don’t want nothing wrong with her. I want her to come out perfect and I think she did, I know she did.

Respondent 22:

R: ... she’s [my mother is] supportive regardless if I did or didn’t smoke. And my mother always been my backbone even though we argue.

I: So how important is her opinion?

R: A lot.

Respondent 23: They would be disappointed, obviously disappointed, but I mean they wouldn’t despise me for it but they would be disappointed and for me starting to smoke again. I don’t like people being disappointed in me, but that’s not the reason I’m not going back.

Respondent 23:

I: And, how much do these people’s opinions about your smoking actually matter to you?

R: Oh ... everybody in my family, we’re a very, very close family so, they’re very opinionated and I listen to everybody’s opinion, so it matters a lot.

I: And what about the father?

R: Yeah, his opinion matters, of course. I wouldn’t want to do anything to harm his child. It’s his child too as much as mine.

Appendix III. The influence of partners on smoking behavior

(Bolded respondent number, e.g. **Respondent 1**, indicates the respondent had an intention score of > 0.)

1. Smoking interactions with their partners [n=7]

Respondent 2: [R1: Respondent, R2: Respondent's partner]

R1: Like when I, I started, what got me on smoking was drinking. Like I was drinking then that's when I started smoking. That's what make me have start smoking was drinking.

I: And where are things at with that?

R2: And I wonder where, who you were with when you started drinking?

R1: What happened?

I: Well, it sounds like you were with him [your boyfriend].

R1: Yeah. Yeah I started going out with him around that time.

Respondent 6: Usually after the kids go to bed or when they're downstairs playing video games. We'll [my husband and I] go out in the yard and have a cigarette or I'll go out in the yard and have a cigarette, you know what I mean, it's just, or at work.

Respondent 11: Even before I got pregnant and was smoking I wasn't like a really big smoker. Like my, my partner is like a way bigger smoker ... It would not be until four-thirty, five o' clock when my partner came home and went outside to have one, that I would go out with him and have one, you know.

Respondent 12: I never got, like, that addicted to it, I was, like, I smoked, like, a pack would last me like a week. You know. But, like, I would just smoke, I don't know, whenever I just felt like it. I was basically following him, I wasn't really doing it because I liked it, like, I was just basically like following him ...

Respondent 13: We [my husband and I] would just smoke outside.

Respondent 21: Well, I had just moved to [name of a city] with him and he never smoked in his apartment, but when we both, well when I quit, he would go outside and we used to go outside together at night and just have our cigarette, so noticing that disappearance for a little bit was like, "oh", you know so.

Respondent 24: Well, my husband used to always tease me that I was, I smoke a cigarette like other people drink brandy, you know, swirling the ... and so for me it's, you know, I never noticed it until he pointed it out, but just, just the, the touching of the cigarette, everything about it, just like very ... I really like to smoke.

2. Temptations to smoke from their partners [n=8]

Respondent 5: I married a smoker and it's hard to stay quit when the person you live

with smokes. He smokes outside. He's not allowed to smoke in the car or in the house but it's still, I smell it on him and, you know, it brings back the craving of it.

Respondent 9: I'm just hoping that, I'm actually hoping my husband quits before I reach that time period because that will reinforce me also. It's harder because he smokes and I see him having one and I'm like, "oh that looks good", kind of thing so I'm hoping and he's been talking about it so I hope he quits as well.

Respondent 11: ...my partner smokes which makes it like really hard. Especially during pregnancy to stay not smoking ...

Respondent 13: The only thing that I can maybe think of is my husband, if he fully quit. Not saying that because he smokes I would pick it up but it would probably make it easier if whatever those trigger things might happen, you know what I mean, if he's not smoking that would make it easier to get rid of that, whatever the trigger is, you know?

Respondent 14: ...except for that he smokes and he smokes in front of me. I don't really care anymore but at first it really sucked... 'Cause he smell, like, not, he wouldn't smoke right next to me but you would kind have like, he would come back and kind of smelled like it and the smell of it is part of the addiction. You kind of want it and just knowing that he has one, kind of makes you want one too.

Respondent 19: ... but I haven't smoke for a while so I just, I'm just really trying and trying to quit but I know it's gonna be hard 'cause my kids' father smokes cigarettes so I know it's gonna be hard. I know I'm gonna get the urge but I'm gonna have to try not to smoke cigarettes ...

Respondent 19:

I: How soon after you delivered did you go back to smoking?

R: Right after.

I: Like days?

R: Right after. Soon as I, soon as I had 'em, my baby father, he went downstairs to smoke a cigarette and he came back up and I smelled it and from right on, from right there I had to go outside, smoke me a cigarette.

I: So while you're still in the hospital?

R: Yeah, I had to go, at this, I was too weak, I was real weak but ...

Respondent 21: ... so I was just, you know, kind of on the edge because he was, not that he smoked in the apartment at all. He never smoked in the apartment or anywhere around me or anything, but it was really hard seeing him smoke ...

Respondent 21: Well, I had just moved to [name of a city] with him and he never smoked in his apartment, but when we both, well when I quit, he would go outside and we used to go outside together at night and just have our cigarette, so noticing that disappearance for a little bit was like, "oh", you know so. Little things like that but he never really smoked in front of his family so it wasn't that, but going over like to my family outings he would

sit there and smoke with my dad so it's, it's like he had that bond now with my father and I didn't so, little things like that but that, that's pretty much it.

Respondent 24: I know some people whose husbands, whose spouses like still smoke in the house right next to them when they're trying to quit. I don't know how people can quit like that. That's crazy 'cause it affects you differently when you're not smoking I mean it, it's just crazy.

3. Partner smoking behavior during pregnancy

a. Co-quitting or reduction of smoking [n=6]

Respondent 2: [Boyfriend] I told her every day she go without a cigarette, from here I'm gonna quit, but I think I'm gonna renege on that. I'm gonna try, just to make sure she don't smoke no more. Because that's less smoke around the baby so ...

Respondent 6:

I: And the father of your child, just before he left, mentioned that he was trying to stop ...

R: 'Cause he sees that I don't do it so again, he goes outside by himself and he's like, shit what is she doing in there. So he sees me in the house and I'm bull shitting or hanging out with the kids or I'll start a movie and he's like "well I'm gonna go out and have a cigarette". "Well okay, see you later". He's like "well damn; I don't want to go by myself".

Respondent 12:

I: So did you guys quit together, or did you do it at different times?

R: No, he did it, hmm, like, recently. But I've been stopped it. Yeah.

I: Do you think that you were support for each other, or do you think that ... ?

R: I help him a lot. Because he's kind of weak, when it comes to smoking. But he's doing a lot better.

Respondent 13:

I: Is he trying to ... [stop]?

R: Yes, yes he is. He used to smoke about a pack a day and now I think a pack lasts him about five. So, we're making progress. Not too thrilled, but he's making an effort.

Respondent 21:

I: And what about your husband, how did he feel?

R: He, he wanted to quit before and he was more adamant about it before, than I was.

I: Quit himself or that you should quit?

R: Both of us should quit and he was always like, "yeah, I have to, you know, I have to think about quitting and blah, blah, blah" and I was like, "oh, I love smoking, I'm not gonna quit" and it was funny because I, I just quit cold turkey and he was like, "I know I have to quit, I know I have to quit" and I, I didn't know if he was

gonna and I said, “you know it would really good if you quit before she came” because then we would, you know, both be on the same level and so he quit in Jan-, and I think it was January so it was quite a few months later but he still did it and he did it cold turkey too, so.

Respondent 21: Yeah, I think, I think he saw like that how much it was kind of like hurting me too, to see him smoke because I, obviously if you love someone you want them to be healthy but like I said, I would never pressure anyone to quit smoking. It’s just not me, you know. They really need to, and that, that comes from my experience, so they really need to quit on their own and everything and I think he finally realized after I started to show a little bit and stuff that yes, we’re having a child, you know? So, daddy should be healthy and, and then we just both supported each other so much and we would talk about it and we communicate so well with each other so we would talk about it and just say, “oh, did you smell that cigarette?” You know, and just kind of work it out that way and stuff but. But I, I mean I see it all the time, like my mom doesn’t smoke but my dad does and they’ve been together for, oh God, I don’t how long, thirty years, I don’t know. So they’ve been together a long time and you know, I think she still wants a cigarette here or there but she gets, you know, she gets upset that my dad is coughing or something and it’s just hard for them, so doing it together is definitely the best way.

Respondent 21: I think that if my husband was still smoking I would go back to it. Just because, I don’t know, that social thing and that connection and that bond and everything but I think since knowing he quit and I feel more control over it. I think I’m fine and I, I do have total control, so.

Respondent 24:

I: Is your husband a smoker?

R: Hmm, hmm. And he’s a part time smoker now though. When he, I mean we both, even before I stopped he, he also cut down from like a pack a day down to like a half a pack a day and now if, if he smokes five cigarettes in a day now it’s, it’s unusual.

b. Refusal to quit or indifference [n=8]

Respondent 3: Four years went by and - but in that four year I’m thinking, you know, I need to stop because due to financial, well financial reasons and also for health, because I have hypertension and, you know, the risk of, you know, of weight, I’m thinking maybe we should stop and I approached my husband, but my husband still continued.

Respondent 5:

I: How did he feel about you stopping smoking?

R: He just looked at it as more cigarettes for him.

Respondent 9: I’d like to see my husband quit, he’s older than I am, he coughs a lot so I know by my quitting that reinforces to him so, and he would like to. He has a harder time. He has a much more addiction to the nicotine itself.

Respondent 9: I'm just hoping that, I'm actually hoping my husband quits before I reach that time period because that will reinforce me also. It's harder because he smokes and I see him having one and I'm like, "oh that looks good", kind of thing so I'm hoping and he's been talking about it so I hope he quits as well.

Respondent 11: ... I've been trying to tell the baby's dad like I don't want him to smoke and how much I can smell it now that I don't smoke and how disgusting ...

Respondent 15: What my parents think doesn't influence me at all, but what my husband thinks does. But the only downfall with my husband is because he chews, I think he feels like he's really not one to tell me to quit smoking because the problem with us both having our own separate addictions like that is we kind of just leave each other alone and it's really not good. Like, if one of us is like, if I only smoked, he'd probably bug me all the time to quit smoking. Like, I know all his friends that chew, their wives are always like, "you have to quit" or they won't chew in front of their wives or they hide it or their wives like bug them about it but I never do, like I don't think I've ever bugged him about quitting because, you know, it all just comes back to you. So that's kind of like a bad thing, you know?

Respondent 17: They understand [if I returned to smoking], I mean you know, when you go through difficult times, you know, sometimes, you know, everybody has their own coping mechanisms and this is one for me, even though it's not a major one, I mean, my husband used to smoke, he doesn't anymore so he can't really, you know, say much.

Respondent 19: He been told me "quit smokin' cigarettes" and I'm like, "if I gotta quit, you quit". Like you know, "you can't tell me to stop smoking cigarettes when you're still smoking" but he basically tryin' to say is that, that I gotta be around for the kids. I gotta be around for the kids. "You gotta be around for the kids too, not just me", but.

Respondent 20: That's his life, he wants to smoke, let him. Go right ahead, anything happens, that's your, that's all on you. I tell him to quit all the time but he doesn't listen to me either, so.