

BREASTFEEDING AND POSTPARTUM DEPRESSION

**Breastfeeding and Postpartum Depression:
Assessing the Influence of Breastfeeding Intention and Other Risk Factors**

Carley J. Pope

**A thesis submitted to the Faculty of Graduate Studies
In partial fulfillment of the requirements for the degree of**

Master of Arts (Clinical Psychology)

Department of Psychology

Lakehead University

Thunder Bay, Ontario

April 2015

Supervisor: Dr. D. Mazmanian

Second Reader: Dr. M. Bédard

Internal External Examiner: Dr. K. McQueen

© Carley J. Pope

ProQuest Number: 10611976

All rights reserved

INFORMATION TO ALL USERS

The quality of this reproduction is dependent upon the quality of the copy submitted.

In the unlikely event that the author did not send a complete manuscript and there are missing pages, these will be noted. Also, if material had to be removed, a note will indicate the deletion.



ProQuest 10611976

Published by ProQuest LLC (2017). Copyright of the Dissertation is held by the Author.

All rights reserved.

This work is protected against unauthorized copying under Title 17, United States Code
Microform Edition © ProQuest LLC.

ProQuest LLC.
789 East Eisenhower Parkway
P.O. Box 1346
Ann Arbor, MI 48106 - 1346

BREASTFEEDING AND POSTPARTUM DEPRESSION

Abstract

Risk and protective factors for postpartum depression have been extensively studied, and more recently an association between breastfeeding and maternal mood has been reported. The purpose of the present study was to clarify the association between breastfeeding and postpartum depression by assessing if women who did not breastfeed were at greater risk of postpartum depression compared to women who attempted to breastfeed, and if intent to breastfeed or other known risk factors influenced the association. The association between breastfeeding duration and postpartum depressive symptoms was also examined. Breastfeeding information, demographic information, and scores on the Edinburgh Postnatal Depression Scale were examined from the Canadian Maternity Experience Survey. This survey contains data collected from 6421 Canadian mothers between October 2006 and January 2007, and 2848 women between five and seven months postpartum were included in the current analyses. In contrast to previous research and the hypotheses of this study, logistic regression analyses revealed that breastfeeding attempt and duration were not associated with postpartum depression at five to seven months postpartum. Although a relationship between the prenatal intention to combination feed and postpartum depression was observed, these variables were no longer related once other potential risk factors were controlled for. Factors that were associated with postpartum depression included lower income, higher perceived stress, lower perceived social support, no history of depression, or no recent history of abuse. These findings suggest that the association between breastfeeding and postpartum depression reported by previous researchers may in fact be due to alternative risk factors.

BREASTFEEDING AND POSTPARTUM DEPRESSION

Acknowledgements

This work would not be possible without the support and contribution from a number of very special individuals, each of whom have altruistically contributed to my personal, academic, and professional development in their own unique way.

First and foremost I offer my sincerest gratitude to my supervisor Dr. Dwight Mazmanian whose support and guidance has made my thesis work possible and an invaluable learning experience. His motivation and enthusiasm, as well as his immense knowledge and propensity for detail, make him an excellent mentor. I consider myself very fortunate to have the opportunity to learn from him and to be challenged by him, and know that my empirical and clinical skills are being enhanced considerably as a result.

I would also like to thank my thesis committee. Dr. Michel Bédard played an instrumental role in this project and I am very grateful for his expertise, advice, and thorough attention to detail. As well, some of Dr. Karen McQueen's empirical work contributed to the conceptualization for this thesis and I am sincerely grateful for her support of this project and helpful advice.

I must also thank Dr. Verinder Sharma whose compassionate and innovative clinical and empirical work has inspired my genuine passion for clinical research and academic writing. I am incredibly fortunate to have him as an ongoing supporter and collaborator in this project and others, and I will be forever grateful to have him as a mentor and role model.

I am also grateful to Ms. Christina Sommerdyk, who opened her home to me on several occasions so I could complete this project. I am so very thankful for her ongoing support, guidance, and friendship. I consider myself very fortunate and appreciative to have her in my corner both as my dearest friend and as my colleague.

BREASTFEEDING AND POSTPARTUM DEPRESSION

I would also like to thank Dr. Riley Hinson and Dr. Monica Stelzl for their continual support to pursue my academic goals. I hope everyone, at least once in their lifetime, gets to experience a mentor as caring, reassuring, and encouraging as they were with me.

As well, I am eternally grateful for the unwavering love, devotion, and encouragement of my husband Adam. He is my rock and my greatest supporter. I am so fortunate that he was and is so enthusiastic about coming on this amazing adventure with me.

I would like to thank the Public Health Agency of Canada and Statistics Canada for compiling the data and making it available for empirical exploration and thanks to Mika Oehling for her kind assistance with the application process. Sincere thanks to Western University Research Data Center's Academic Director, Dr. Paul Philippe-Pare, for graciously allowing me to use Western's facility to access the data. I would also like to thank the staff at the Research Data Center at Western University, Bradley Corbett, Nathalie Metzger, and Kelly Bairos, for their patience, guidance, and assistance in accessing the micro data files and for being so welcoming at each visit.

Finally, thank you to all of my colleagues in the Health, Hormones, and Behaviour lab and the faculty, staff, and students in the Clinical Psychology and Psychological Science programs and in the Department of Graduate Studies at Lakehead University for everything you are teaching me and all the support you provide. In particular, thanks to Nicole Poirier, Victoria Pitura, and Chad Keefe for accompanying and supporting me through what is proving to be the most exhilarating and rewarding experience of my life.

BREASTFEEDING AND POSTPARTUM DEPRESSION

Table of Contents

Abstract.....	i
Acknowledgements.....	ii
List of Tables.....	vi
List of Abbreviations.....	vii
List of Appendices.....	viii
Introduction.....	1
Epidemiology of Postpartum Depression.....	1
Consequences of Postpartum Depression.....	2
Risk Factors for Postpartum Depression.....	3
Protective Factors against Postpartum Depression.....	5
Breastfeeding.....	6
Breastfeeding and Postpartum Depression.....	7
Breastfeeding Intention and Initiation.....	8
Breastfeeding and Maternal Mood.....	9
Breastfeeding Duration.....	11
Breastfeeding Dose-Response Effect.....	12
Reciprocal Relational Findings.....	13
No Association or Non-Significant Trends.....	14
Mechanism of Action.....	14
Conflicting Research Findings.....	17
Current Investigation.....	18
Specific Aims.....	19

BREASTFEEDING AND POSTPARTUM DEPRESSION

Hypotheses.....	19
Method	19
Procedure	19
Participants.....	20
Materials	21
Measures.....	22
Statistical Analysis.....	24
Results	26
Descriptive Statistics	26
Reliability Analyses	26
Hypothesis 1	30
Hypothesis 2	32
Discussion	35
Strengths	42
Limitations	43
Future Research	46
Conclusions	48
References.....	51
Appendix 1.....	74
Appendix 2.....	121

BREASTFEEDING AND POSTPARTUM DEPRESSION

List of Tables

Table 1	Descriptive Statistics of Women in the Sample.....	23
Table 2	Descriptive Statistics of Depression and Breastfeeding Variables.....	27
Table 3	Edinburgh Postnatal Depression Scale (EPDS) Inter-Item Correlation Matrix.....	28
Table 4	Edinburgh Postnatal Depression Scale (EPDS) Corrected Item Total Correlation.....	29
Table 5	Binary Logistic Regression Analysis of Breastfeeding Intent, Attempt, and Postpartum Depression Risk Factors with Depression Scores.....	31
Table 6	Correlations for Breastfeeding Duration with Edinburgh Postnatal Depression Scale (EPDS) scores.....	33
Table 7	Binary Logistic Regression Analysis of Breastfeeding Duration and Edinburgh Postnatal Depression Scale (EPDS) Scores.....	34

BREASTFEEDING AND POSTPARTUM DEPRESSION

List of Abbreviations

APA	American Psychiatric Association
CMES	Canadian Maternity Experience Survey
DSM-5	Diagnostic and Statistical Manual for Mental Disorders - Fifth Edition
EPDS	Edinburgh Postnatal Depression Scale
HSS	Hormonal Sensitivity Syndrome
ICD	International Classification of Diseases
IOR	Inverted Odds Ratio
LICO	Low Income Cut-Off
OR	Odds Ratio
RDC	Research Data Centre
SES	socioeconomic status

BREASTFEEDING AND POSTPARTUM DEPRESSION

List of Appendices

Appendix 1	Canadian Maternity Experience Survey.....	74
Appendix 2	Variable Recoding of Canadian Maternity Experience Survey	121

BREASTFEEDING AND POSTPARTUM DEPRESSION

Breastfeeding and Postpartum Depression:

Assessing the Influence of Breastfeeding Intention and Other Risk Factors

Epidemiology of Postpartum Depression

Postpartum depression is a serious mental health condition that affects 13% to 19% of women who have recently given birth (O'Hara & McCabe, 2013). Postpartum depression is characterized as a persistent low mood in new mothers, which is often accompanied by feelings of sadness, worthlessness, and/or hopelessness. Postpartum depression differs from the "baby blues" as the "baby blues" is a briefer period of mild emotional disturbance (including dysphoria, tearfulness, mood lability, insomnia, irritability, and anxiety) which is experienced by 80% of women within the first few days following childbirth and usually remits within 10 days (Heron, Haque, Oyebode, Craddock, & Jones, 2009).

Currently, the Diagnostic and Statistical Manual for Mental Disorders - Fifth Edition (DSM-5) classifies depression with peripartum onset as beginning during pregnancy or within the first four weeks postpartum (American Psychiatric Association [APA], 2013). The International Classification of Diseases (ICD) classifies postpartum depression as occurring within the first six weeks postpartum (World Health Organization, n.d.). In contrast to the current recommendations, some researchers recommend that this time frame be extended in future revisions of these guides to account for episode onset within the first six months postpartum (Sharma & Mazmanian, 2014). Further, in spite of the current DSM-5 guidelines, many researchers use a time frame that ranges up to one year postpartum for onset of postpartum depression (O'Hara & McCabe, 2013).

While the clinical profile of postpartum depression is similar to depression occurring at other times in a woman's life, it may differ in some respects due to the profound physiological

changes occurring during pregnancy and the postpartum period (Bloch et al., 2000; O'Hara & McCabe, 2013). In fact, it is estimated that as many as 40 - 80% of postpartum women experience mild symptoms of mood disturbance within the first few days following childbirth (Buttner, O'Hara, & Wisner, 2012). Moreover, many postpartum women experience symptoms following pregnancy that are characteristic of depression, such as disturbances in appetite, energy, and sleep (O'Hara, Schlechte, Lewis, & Wright, 1991). These factors make it difficult to differentiate clinically significant depressive disorder from common symptoms experienced as a result of childbirth and caring for a new infant.

While postpartum depression can be brief and remit unexpectedly, it has been reported that that approximately 30% of women in community samples who experience postpartum depression continue to be depressed up to two years postpartum (Horowitz & Goodman, 2004) and 50% of women from clinical samples continue to have major depression throughout, and in some cases beyond, the first year postpartum (Vliegen, Casalin, & Luyten, 2014). Furthermore, the illness course can vary and chronic depression for these women may consist of stable mild depression, stable major depression, or recurrent episodes of major depression without full remission between episodes (Vliegen, Casalin, & Luyten, 2014).

Consequences of Postpartum Depression

Compared to depression occurring at other time points in a woman's life, there is some evidence to suggest that women experiencing postpartum depression are at an increased risk for comorbid obsessive compulsive disorder (Abramowitz et al., 2000; Russell, Fawcett, & Mazmanian, 2013) and anxiety (Hendrick, Altshuler, Strouse, & Grosser, 2000; O'Brien, Buikstra, & Hegney, 2008), as well as suicidal ideation and thoughts of harm to the self or the infant (Jennings, Ross, Popper, & Elmore, 1999; Pope, Xie, Sharma, & Campbell, 2013; Wisner

et al., 2013). Further, suicide is a leading cause of death for mothers during the postpartum period, and women experiencing a depressive episode are at particular risk (Lindahl, Pearson, & Colpe, 2005). In addition to being associated with comorbid disorders, postpartum depression is associated with numerous consequences (Pope, Sharma, & Mazmanian, 2014a). Negative long-term consequences to the infant's social, emotional, cognitive, and physical development have been reported (Field, 2010). Children of mothers with a history of unipolar disorder are at increased risk of developing psychosocial and emotional or behavioural disturbances (Korhonen, Luoma, Salmelin, & Tamminen, 2012), as well as intellectual disabilities (Morgan et al., 2012). Additionally, postpartum depression is associated with disturbance in mother-infant interactions and bonding as well as deficient parenting and parental safety practices (Field, 2010; Moehler, Brunner, Wiebel, Reck, & Resch, 2006). Infanticide is another possible serious and tragic consequence when postpartum depression is accompanied by psychosis. However, women experiencing nonpsychotic postpartum depression are unlikely to commit infanticide (Spinelli, 2004). Postpartum psychosis is far less common than postpartum depression but can result in serious and devastating consequences for the mother and the infant as well as the rest of the family (Ganjekar, Desai, & Chandra, 2013). Often postpartum psychosis leads to hospitalization and considerable functional impairment (Robertson, Jones, Haque, Holder, & Craddock, 2005). There is however, some debate concerning the degree to which psychosis is related to the unipolar variation of postpartum depression (Spinelli, 2004). Emerging evidence suggests that postpartum psychosis is more likely a variant of bipolar disorder (Brockington, 2004).

Risk Factors for Postpartum Depression

While younger age (Chaudron et al., 2001; Mayberry, Horowitz, & Declercq, 2007), minority status (Horowitz, Murphy, Gregory, & Wojcik, 2011; Howell, Mora, Horowitz, &

Leventhal, 2005), and lower levels of education (Horowitz et al., 2011; Meltzer-Brody, Boschloo, Jones, Sullivan, & Penninx, 2013; Mayberry et al., 2007) have been identified by some investigators as potential predictive factors for developing postpartum depression, it appears that low socioeconomic status (SES) may account for the associations found between these variables and postpartum depression (Hamdan & Tamim, 2012; O'Hara & McCabe, 2013). However, financial poverty in and of itself is not adequate to explain the development of postpartum depression, as many women of low SES do not develop depressive symptoms (Segre, O'Hara, Arndt, & Stuart, 2007). Moreover, moderate or high SES does not necessarily protect women from postpartum depression (Ross et al., 2006). Interestingly, returning to work in the early postpartum has also been found to be related to increased risk for postpartum depressive symptoms (Hamdan & Tamim, 2012), though this may also be a result of SES circumstances.

Additional predictors of postpartum depression include immigration status (Davey, Tough, Adair, & Benzies, 2011), living in a large urban area (Vigod et al., 2013), stressful life events (Davey, Tough, Adair, & Benzies, 2011), poor marital relationships (Bilszta et al., 2008), being single/divorced/separated (Nishioka et al., 2011), and poor social support (Nielsen Forman, Videbech, Hedegaard, Dalby Salvig, & Secher, 2000). Women are also at increased risk if they are primiparous (Di Florio et al., 2014), if they did not want the pregnancy (Csatordai et al., 2007), or if the infant has a difficult temperament (Britton, 2011). Other factors include neuroticism (Meltzer-Brody et al., 2013), and history of depression or anxiety prior to pregnancy, and depression during pregnancy (Davey et al., 2011; Elisei, Lucarini, Murgia, Ferranti, & Attademo, 2013; Hamdan & Tamim, 2012; Jardri et al., 2006; Pippins et al., 2006). As well as a history of recent abuse (Jesse, Walcott-McQuigg, Mariella, & Swanson, 2005; Meltzer-Brody et al., 2013), history of alcohol, substance abuse (see Chapman & Wu, 2013 for a

review) or smoking (Dagher & Shenassa, 2012) also increases risk. Moreover, a mood episode following a first childbirth increases the probability that the mother will experience a mood episode following subsequent deliveries (Freeman et al., 2002). In addition to predictors for developing postpartum depression, a few studies have also evaluated factors that predict a more chronic or persistent course of postpartum depression. These include poor quality relationships with spouse, stressful life circumstances, and a history of depression, sexual abuse, or maternal neglect as a child. As well, difficulty with role transition into motherhood may also result in a more chronic illness course (Vliegen, Casalin, & Luyten, 2014).

Protective Factors against Postpartum Depression

Some researchers have examined not only what puts women at risk for postpartum depression but also what factors may protect women from developing the postpartum illness. Miranda and colleagues (2012) found that healthier affective relationships with the postpartum women's own mothers resulted in women being less likely to develop postpartum depression, even when at high risk for developing the disorder. Moreover, increased perceived social support during the third trimester (Castle, Slade, Barranco-Wadlow, & Rogers, 2008) as well as in the first month following pregnancy (Pearlstein, Howard, Salisbury, & Zlotnick, 2009) is also inversely related to the development of depressive symptoms postpartum. Furthermore, Jesse and colleagues (2005) found that greater levels of social support and increased self-esteem were protective against postpartum depression for African American women at high risk for postpartum depression. As well, receiving educational information on "postnatal concerns" and "negative feelings" appear to offer some protective benefits against postpartum depressive symptoms in primiparous and multiparous women, respectively (Youash et al., 2013). Finally, research is emerging which suggests that breastfeeding may offer protective benefits against

postpartum depression (Figueiredo, Canário, & Field, 2013); however, the exact nature of the association between breastfeeding and postpartum depression remains unclear.

Breastfeeding

Breastfeeding has gained a notable amount of international attention due to increasing evidence that it is related to numerous infant and maternal health benefits. In fact, Health Canada (2013) recommends exclusive breastfeeding for at least the first six months postpartum and then continuing, in conjunction with complementary foods, for at least two years postpartum. Benefits for the infant include protection against infection, especially gastrointestinal and respiratory infection (Duijts, Ramadhani, & Moll, 2009). Breastfeeding is also associated with a lower incidence of postneonatal death (Chen & Rogan, 2004). In addition to the numerous short-term advantages, breastfeeding is also suggested to be associated with various long term advantages for the infant such as lower cholesterol and blood-pressure, as well as a reduced risk for the development of type-2 diabetes and obesity later in life (Robinson & Fall, 2012).

These infant health benefits are attributed to important nutrition and immunological support provided by breast milk (Riskin et al., 2012). For example, one particular antibody found in breast milk, secretory immunoglobulin A, offers particular immune system protection and cannot be reproduced in infant formula (Niers, Stasse-Wolthuis, Rombouts, & Rijkers, 2007). Moreover, the physical health benefits of breastfeeding are not limited to the infant; they also extend to the mother. Such benefits include a reduced risk for breast cancer (do Carmo, França-Botelho, Ferreira, França, França, & Honório-França, 2012), ovarian cancer (Luan et al., 2013), and osteoporosis later in life (Tsvetov, Levy, Benbassat, Shraga-Slutzky, & Hirsch, 2013).

BREASTFEEDING AND POSTPARTUM DEPRESSION

In addition to the various infant and maternal physical health benefits found to be related to breastfeeding, there are numerous reports of breastfeeding being associated with improved infant and maternal mental health and well-being. In particular, breastfeeding is associated with the improved cognitive and motor development of breastfed children (Bernard et al., 2013), though the exact role of breastfeeding is unclear (Walfisch, Sermer, Cressman, & Koren, 2013). In terms of maternal benefits, research shows that breastfeeding is associated with an increased amount of maternal sleep compared to mothers who formula feed their infants (Doan, Gardiner, Gay, & Lee, 2007). As well, breastfeeding is also implicated in improvements in maternal mood, including in women with postpartum depressive symptoms (Figueiredo, Canário, & Field, 2013).

Breastfeeding and Postpartum Depression

Initially the relationship between breastfeeding and postpartum depression was conceptualized to be unidirectional with postpartum depression resulting in lower rates of breastfeeding initiation and early cessation (Seimyr, Edhborg, Lundh, & Sjögren, 2004). More recently however, reports indicate that the relationship is likely bidirectional in nature, suggesting that while postpartum depression may reduce rates of breastfeeding, not engaging in breastfeeding may increase the risk of postpartum depression. Additionally, there is some evidence that breastfeeding may protect against postpartum depression or assist in a swifter recovery from symptoms (Figueiredo, Canário, & Field, 2013).

The association between breastfeeding and postpartum depression has been studied by a number of investigators but the direction of this relationship and confirmation of whether it is a direct relationship still eludes us. Numerous studies on the topic of breastfeeding and postpartum depression have come to contrasting conclusions, likely a result of the interaction

between the numerous and complex physiological, psychological, and sociocultural mechanisms responsible for the relationship (Hamdan & Tamim, 2012), as well as the use of varying methods for studying the association.

Specifically, a number of researchers have reported that they found no relationship between breastfeeding and postpartum depression (e.g., Chaudron et al., 2001) and two early reports suggest that breastfeeding mothers have a higher risk of depression (Alder & Bancroft, 1988; Alder & Cox, 1983). In contrast, a number of more recent studies report that women who formula feed have higher rates of depression than women who breastfeed (e.g., Groer, 2005), while some others report that mothers who experience postpartum depression are at greater risk of early breastfeeding cessation (e.g., Dennis & McQueen, 2007).

Breastfeeding Intention and Initiation

A number of studies have found no association between prenatal depressive symptoms and intention to breastfeed (Barnes, Stein, Smith, & Pollock, 1997; Jacobson, Jacobson, & Frye, 1991; Lee et al., 2005; McKee, Zayas, & Jankowski, 2004). In contrast, Insaf and colleagues (2011) did find that women with prenatal depressive symptoms were less likely to intend to breastfeed, though this study did not follow the women through to childbirth to determine initiation rates. Similarly, Fairlie and colleagues (2009) also found that prenatal depressive symptoms were associated with a reduced intention to breastfeed (reported in the second trimester). However, follow-up in the postpartum period revealed that depressive symptoms during pregnancy were not associated with the actual initiation of breastfeeding, indicating that some of the women who initially reported that they did not intend to breastfeed changed their minds and attempted to breastfeed. Further, Pippins and colleagues (2006) found, in their longitudinal study following a large sample of pregnant women, that women with prenatal

depressive symptoms were not significantly less likely to initiate breastfeeding. Thus it appears that women's prenatal intention to breastfeed fluctuates, perhaps due to breastfeeding encouragement or education in the third trimester. Moreover, while breastfeeding initiation may not be related to prenatal depressive symptoms, failure to breastfeed (when attempted) has been found to be associated with postpartum depressive symptoms (Davey et al., 2011). As well, women who never established breastfeeding are reported to have a 2.4-fold chance of developing depressive symptoms at 16 weeks postpartum compared to breastfeeding women (Nielsen Forman et al., 2000).

Breastfeeding and Maternal Mood

A number of studies report that women who are not breastfeeding are significantly more likely to have higher levels of depressive symptoms than women who are breastfeeding (Abou-Saleh, Ghubash, Karim, Krymski, & Bhai, 1998; Astbury, Brown, Lumley, & Small, 1994; Green, Broome, & Mirabella, 2006; Groër, 2005; Groër & Morgan, 2007; Gross, Wells, Radigan-Garcia, & Dietz, 2002; Hannah, Adams, Lee, Glover, & Sandler, 1992; Jardri et al., 2006; Lane et al., 1997; Mancini, Carlson, & Albers, 2007; McLearn et al., 2006; Nishioka et al., 2011; Tammentie, Tarkka, Åstedt-Kurki, & Paavilainen, 2002; Tashakori, Behbahani, & Irani, 2012; Warner, Appleby, Whitton, & Faragher, 1996; Yonkers et al., 2001). For example, a recent longitudinal study by Nishioka and colleagues (2011) found that at 5 months postpartum the proportion of mothers with EPDS of ≥ 9 (suggesting risk of postpartum depression) was significantly lower for women who were breastfeeding compared to women who were formula feeding ($p = .04$). Moreover, this relationship has been found to persist even once age, education ($OR = 0.28, p = .007$; Dunn, Davies, McCleary, Edwards, & Gaboury, 2006), income, race, previous history of depression, and current psychoactive medication use ($p < .001$; Hatton et al.,

2005) are controlled for. Interestingly one study found that depression severity was not related to breastfeeding status in a group of women diagnosed with postpartum depression (McCarter-Spaulding & Horowitz, 2007). This suggests that breastfeeding status did not influence the severity of depression when co-occurring with postpartum depression. Thus, while breastfeeding may be associated with depressive symptoms, it may not influence the severity of the symptoms.

While postpartum depression has been identified as a risk factor for early breastfeeding cessation (McLearn et al., 2006), early negative breastfeeding experience may be a risk factor for postpartum depression (Watkins, Meltzer-Brody, Zolnoun, & Stuebe, 2011). Further, it has also been suggested that breastfeeding may offer protective benefits against postpartum depression (Figueiredo, Canário, & Field, 2013). One study to report on the protective benefits of breastfeeding found lower levels of depressive symptoms in the prenatal but not postnatal period predicted exclusive breastfeeding. Further breastfeeding duration resulted in a significant decrease in depressive symptom scores from childbirth to 3-months postpartum when considering women who initiated breastfeeding. These investigators further found that women who did not initiate breastfeeding did not experience significant changes in depressive symptoms over the first three postpartum months. After considering the findings collectively, the investigators postulated that the results suggest that breastfeeding alleviates depressive symptomology over time (Figueiredo, Canário, & Field, 2013).

Additionally, results from a study by Mezzacappa and Katlin (2002) lend further support to the premise that breastfeeding offers ameliorating effects on postpartum depressive mood symptoms. These investigators looked at the acute effects of breastfeeding on maternal mood and found that breastfeeding mothers experienced a decrease in negative mood from pre-feeding to post-feeding. Moreover, bottle-feeding mothers experienced a decrease in positive mood from

pre-feeding to post-feeding. Thus, breastfeeding may offer both acute and long-term ameliorating effects on postpartum depression, however further research is required to substantiate these initial findings.

Breastfeeding Duration

Breastfeeding duration has been found to be inversely related to postpartum depressive symptoms. A relationship that has been found to persist even after controlling for socioeconomic status, age, and education level (Henderson, Evans, Straton, Priest, & Hagan, 2003); as well as for past history of depression, increased life stress, and psychoactive medication use (Hatton et al., 2005). In particular, a number of studies have reported an association between postpartum depressive symptoms and early weaning (Akman et al., 2008; Bick, MacArthur, & Lancashire, 1998; Cooper, Murray, & Stein, 1993; Falceto, Giugliani, & Fernandes, 2004; Fergerson, Jamieson, & Lindsay, 2002; Papinczak & Turner 2000; Pearlstein et al., 2009; Seimyr et al., 2004). In fact, McLearn, Minkovitz, Strobino, Marks, and Hou (2006) reported that mothers with depressive symptoms were less likely to continue breastfeeding through to two to four months postpartum compared to mothers without depressive symptoms ($AOR = 0.73, p < .001$).

A number of studies note that postpartum depressive symptoms preceded breastfeeding cessation (Henderson et al., 2003; Misri et al., 1997). In a large prospective study of postpartum women, Taveras and colleagues (2003) found that having higher depressive symptoms at two weeks postpartum was associated with discontinuation of breastfeeding at 12 weeks postpartum. Dennis and McQueen (2007) reported similar findings. Specifically, depressive symptomology in the early postpartum period predicted early cessation of breastfeeding at eight weeks postpartum. As well, in a smaller prospective study, Galler, Harrison, Biggs, Ramsey, and Forde

(1999) found that depressive symptoms at seven weeks postpartum inversely predicted breastfeeding practices at seven weeks, three months, and six months postpartum, even after controlling for disadvantaged environmental conditions. Interestingly, these investigators did not find an association between depressive symptoms at six months postpartum and breastfeeding practices at the same time point.

More recently, Dennis and McQueen (2007) found that after controlling for baseline depressive symptoms there was no relationship between infant feeding outcome (feeding method used, satisfaction with method, breastfeeding difficulties, breastfeeding self-efficacy) at one week postpartum and the development of postpartum depressive symptoms (measured one and two months postpartum). However, the women in this study who reported high levels of postpartum depressive symptoms were significantly more likely to discontinue breastfeeding. These women were also more likely to report being unsatisfied with their infant-feeding method, experience breastfeeding difficulties, and report lower breastfeeding self-efficacy. Taken together, these findings suggested that over time depressive symptoms can influence infant feeding outcomes to a point of discontinuation.

Breastfeeding Dose-Response Effect

A dose response effect of breastfeeding with regards to the association with postpartum depression has been proposed. In a large study of women evaluated between 8 and 12 weeks postpartum, Thome, Alder, and Ramel (2006) found that exclusively breastfeeding mothers had lower mean depressive symptom scores compared to partial breastfeeding mothers. Relatedly, Ystrom (2012) found that at six months postpartum, both partially breastfeeding and exclusively bottle-feeding were significantly related to higher levels of depressive symptoms in postpartum women compared to those who exclusively breastfed. Furthermore, bottle-feeding was related to

postpartum depression to a greater degree than partial breastfeeding. As well, when the investigator adjusted for baseline prenatal anxiety and depression (measured at 30 weeks gestation) the relationship persisted, indicating that breastfeeding may reduce depressive symptoms or depressive symptoms may result in breastfeeding titration.

One other study compared exclusive breastfeeding to exclusive bottle-feeding (Flores-Quijano et al., 2008). These investigators found an inverse association between postpartum depression and exclusive breastfeeding continuation. As well, it has also been found that as early as one week postpartum, levels of depressive symptoms are inversely related to exclusive breastfeeding (Clifford, Campbell, Speechley, & Gorodzinsky, 2006). Moreover, Kendall-Tackett, Cong, and Hale (2013) investigated the effects of breastfeeding on women at high risk for postpartum depression and sleep difficulties due to a history of being victims of sexual assault. These investigators reported that breastfeeding appeared to offer some protective benefits, compared to partial breastfeeding and bottle-feeding, as it was associated with a reduction in sleep difficulties and depression.

Reciprocal Relational Findings

In light of conflicting reports that postpartum depression leads to early breastfeeding cessation (e.g., McLearn et al., 2006) and that breastfeeding leads to a reduction in postpartum depressive symptoms (e.g., Mezzacappa & Katlin, 2002), recent investigations have looked further into a reciprocal relationship. Specifically, it is now proposed that postpartum depression can lead to early breastfeeding cessation but breastfeeding continuation may also reduce levels of postpartum depressive symptoms (Figueiredo, Canário, & Field, 2013). To date, two studies help to explicate this reciprocal relationship. A study by Hamdan and Tamim (2012) supports the reciprocal relationship hypothesis. These investigators found that women who were

breastfeeding at two months postpartum had a lower risk of postpartum depression at four months postpartum. On the other hand women who had postpartum depression at two months postpartum were less likely to be breastfeeding at four months postpartum. As well, Hahn-Holbrook, Haselton, Dunkel Schetter, and Glynn (2013) found that prenatal depressive symptoms predicted a reduced frequency of breastfeeding and earlier cessation within the first three months postpartum. As well, more frequent breastfeeding at three months postpartum was associated with greater subsequent declines in depressive symptom levels up to two years postpartum.

No Association or Non-Significant Trends

A number of studies have reported no significant relationship between postpartum depression and breastfeeding status (Bogen et al., 2010; Chaudron et al., 2001; Chung, McCollum, Elo, Lee, & Culhane, 2004; Cox, Connor, & Kendell, 1982; Josefsson et al., 2002; Lau & Chan, 2007; McKee, Zayas, & Jankowski, 2004; O'Neill, Murphy, & Greene, 1990; Ramsay, Gisel, McCusker, Bellavance, & Platt, 2002). However, two of these studies did report finding a non-significant trend suggestive of an inverse association (Chung et al 2004; Lau & Chan, 2007). In any case, most of these findings were incidental; the primary purpose of those investigations was not to evaluate the association between breastfeeding and postpartum depression.

Mechanism of Action

The mechanism by which breastfeeding is affected by, or affects, postpartum depression have been assessed in a number of studies. Breastfeeding self-efficacy and negative breastfeeding perceptions has been implicated as playing a primary role in the relationship. Specifically, during the first week postpartum, depressed mothers have been found to be at

increased risk for feeling unsatisfied with breastfeeding and were experiencing significant breastfeeding problems. They are also at risk for experiencing lower levels of breastfeeding self-efficacy compare to non-depressed mothers (Dennis & McQueen, 2007).

Further, mothers' postpartum depressive symptoms was found in one study to be inversely related to the belief that breastfeeding is the best option for infant feeding and positively related to the beliefs that breastfeeding is private and breastfeeding is restrictive (Galler, Harrison, Ramsey, Chawla, & Taylor, 2006). Additionally, in a study that did not find a relationship between breastfeeding and depressive symptoms, women who worried about breastfeeding were significantly more likely to develop depression than women who did not worry (Chaudron et al., 2001). Similarly, Tamminen (1988) found that women with more depressive symptoms also reported more breastfeeding difficulties, and Dennis (2003) noted that level of depressive symptoms at one, four, and eight weeks postpartum was inversely related to breastfeeding self-efficacy at the corresponding time periods. This is a similar finding to that recorded by Dai and Dennis (2003). Collectively, this research suggests that it is not necessarily the postpartum depression per se that leads to reduced breastfeeding, but rather it might be a consequence of the negative cognitions and perceptions of breastfeeding that are characteristic of postpartum depression.

Alternatively, complications with the mother infant interaction may also play a role. One study reported that breastfeeding led to less burping, less intrusive stimulation (e.g., mother poking the infant or moving) during nipple-in and nipple-out periods, and more stroking (by the mother to their infant) as well as superior mother-infant interaction rating scores as rated by an observer. Further, these benefits were found to extend to both the depressed and non-depressed

breastfeeding women (Field et al., 2010). Thus, breastfeeding may enhance the mother-child interaction, which may lead to improved maternal mental health.

Breastfeeding difficulties and lack of breastfeeding confidence are reported as common concerns for mothers with postpartum depressive symptoms (Edhborg, Matthiesen, Lundh, & Widström, 2005). Dennis and McQueen (2007) suggested that the factors underlying the relationship between breastfeeding duration and postpartum depression are multifactorial. In other words, it is likely that the interplay between the mothers' negative cognitions and impaired mother-infant interaction, in addition to other factors, such as underlying physiological processes, are responsible for the emergence of postpartum depression. Moreover, depressive symptoms in the early postpartum period resulted in the mother being more vulnerable to feelings of low self-esteem and self-efficacy. As a consequence, the depressive symptoms and accompanying negative cognitions may reinforce perceived breastfeeding difficulties or may reduce the mothers' ability to accurately interpret infant cues, further perpetuating actual breastfeeding difficulties (Dennis & McQueen, 2007). As well, breastfeeding is suggested to attenuate neuro-endocrine responses to stress and may act to enhance maternal mood. Specifically, oxytocin and prolactin, hormones responsible for lactation, are suggested to have mood-ameliorating effects. Oxytocin in particular is a hormone that promotes feelings of nurturance and relaxation, during nursing (Matthiesen, Ransjö-Arvidson, Nissen, & Uvnäs-Moberg, 2001; Skalkidou, Hellgren, Comasco, Sylvén, & Sundström Poromaa, 2012; Viero et al., 2010). As well, lactation is suggested to attenuate cortisol stress responses (Figueiredo, Dias, Brandão, Canário, & Nunes-Costa, 2013) by decreasing stress hormone levels (especially cortisol) and enhancing sleep (Tu, Lupien, & Walker, 2006).

Conflicting Research Findings

A majority of studies do report some association between breastfeeding and postpartum depression, however the direction of the relationship is unclear and some of the findings conflict with one another. This is likely a reflection of both the complex processes responsible for the association between breastfeeding and postpartum depression as well as the differences between the study designs and the samples used. Dennis and McQueen (2009) suggested that the contrasting findings may be due to differences in research methodology or study limitations. Some of the limitations include differences in definition and criteria for assessing breastfeeding and/or depressive symptomology. That is, a number of studies only classified breastfeeding as a “yes” or “no” dichotomy, failing to take into account partial breastfeeding (e.g., Chaudron et al., 2001; Cox, Connor, & Kendell, 1982; Josefsson et al., 2002; McKee, Zayas, & Jankowski, 2004; O'Neill, Murphy, & Greene, 1990). As well, some studies used assessment instruments non-specific to depression (e.g., Cox, Connor, & Kendell, 1982) or used lower cut-off scores (e.g., Lau & Chan, 2007; Josefsson et al., 2002) compared to most investigations. Furthermore, some studies used samples with higher than normal rates of women reporting postpartum depression. For instance, Lau and Chan (2007) found the rate of postpartum depression in their sample to be 34% which is about double the estimated prevalence (O'Hara & McCabe, 2013), likely a result of the low cut-off score they used. As well, some studies used women at high risk for postpartum depression. For instance Kendall-Tackett, Cong, and Hale's (2013) investigation used women who reported a history of sexual assault, a known risk factor for postpartum depression (Vliegen, Casalin, & Luyten, 2014). Furthermore, for many of the studies, the primary focus was not to delineate the relationship between breastfeeding and depression

(Dennis & McQueen, 2009), which likely explains many of the methodological or interpretive shortfalls noted.

Current Investigation

Specific conclusions regarding the association between breastfeeding and postpartum depression have not been obtained due to the nature of the phenomena being studied. Namely, randomized controlled trials of this relationship are not possible due to obvious ethical concerns. This being said, studying the association in naturalistic ways has provided valuable information regarding this relationship. While numerous studies have evaluated the association between postpartum depression and breastfeeding, few studies (Davey et al., 2011; Nielsen Forman et al., 2000) have looked at the rate of postpartum depression in women who never initiated (or failed to initiate) breastfeeding. Further, none of the studies have looked at postpartum depression rates in women who made the decision prenatally not to breastfeed and did not attempt to breastfeed. In response, the current study aimed to add to this available research by assessing if the risk of postpartum depression differed as a result of women's intention and/or initiation of breastfeeding. That is, if women who intended to breastfeed but do not initiate breastfeeding had an increased risk for the development of postpartum depression compared to women whose intent corresponds with their feeding practices (both intend and initiate breastfeeding / both intend and initiate bottle-feeding). Such information will clarify if the relationship between breastfeeding and postpartum depression is the result of the act of breastfeeding itself or the result of a failed attempt to initiate breastfeeding, which is often associated with negative self-evaluation.

Specific Aims

The primary aim of this study was to add to the existing literature on the association between breastfeeding and postpartum depression by assessing: 1) if women who did not attempt breastfeeding were at greater risk of postpartum depression compared to women who attempted breastfeeding, and if intent to breastfeed influenced these association; and 2) if breastfeeding duration was related to the experience of postpartum depressive symptoms.

Hypotheses

Given the available literature on the reciprocal nature of the relationship between breastfeeding and postpartum depression, it was predicted that women who report that they did not initiate breastfeeding, regardless of prenatal breastfeeding intention, would be at greater risk for postpartum depression compared to women who did initiate breastfeeding (Hypothesis 1). As well, it was predicted that shorter breastfeeding duration would put women at increased risk for postpartum depressive symptoms (Hypothesis 2). Disappointment and stress related to being unable to breastfeed, when this was the intention, are potential mediating variables found in some of the past literature. By including a group of women who did not intend to breastfeed, this study was better able to control for such extraneous variables and thus better able to explicate the relationship between breastfeeding and postpartum depression

Method**Procedure**

This study was based on a cross-sectional design utilizing survey data derived as part of the Canadian Maternity Experience Survey (CMES; Public Health Agency of Canada, 2009). Permission to access the CMES raw data set was obtained from the Social Sciences and Humanities Research Council, a division of the Government of Canada. The data was accessed

through the Research Data Centre (RDC) at Western University in London, Ontario. Western University's Academic Director approved the use of the institution's RDC for the purposes of this investigation. This study was approved by the Department of Psychology at Lakehead University and ethical approval was obtained from the Lakehead University Research Ethics Board.

Participants

A stratified sample of 8542 postpartum women were identified based on their 2006 Canadian Census survey responses, of which 6421 (78%) completed the survey. At the time of interviewing, women were found to be, on average, 7.3 months postpartum with 84.6% being between six and nine months postpartum. In 96.9% of cases the interviews were conducted between five and nine months postpartum for women residing in the provinces, and 10 – 14 months for women residing in the territories.

Eligible participants were birth mothers who were 15 years of age and older, who had a singleton live birth in Canada (between February 15, 2006 and May 15, 2006 for provinces or between November 1, 2005 and February 1, 2006 for territories), and who lived with their infant at the time of the interview. Due to what Statistics Canada refers to as “operational reasons”, birth mothers were not eligible to participate if they were under 15 years of age at the time of giving birth, lived on a First Nations reserve at the time of data collection, or lived in an institution at the time of data collection. As well, mothers who had a multiple birth, a stillbirth, or had experienced an infant death, were not eligible as the survey did not focus on birth mothers who experienced those specific circumstances. In total the data from 6421 birth mothers were available for analysis. For continuity, only women who were five to seven months postpartum were considered in this analysis ($N = 2848$). The mean age of women included in this analysis

was 30.39 ($SD = 5.11$). Table 1 presents descriptive statistics for the women included in the analyses as part of this study.

Materials

Canadian Maternity Experience Survey (CMES; Public Health Agency of Canada, 2009). The CMES was developed and implemented by the Public Health Agency of Canada in collaboration with Statistics Canada. The survey was an initiative to acquire representative pan-Canadian data on women's experiences during pregnancy and the postpartum period.

Approximately 70 trained female interviewers conducted the approximately 45 minute long interviews between October 23, 2006 and January 31, 2007, using a computer-assisted telephone interview application. The surveys were mostly administered by telephone (with a few being administered in person) in both official languages, English and French, as well as in 13 other languages.

Demographics and sociocultural characteristics, intention, initiation, and duration of breastfeeding were obtained from the raw survey data. This extraction resulted in the following breastfeeding variables being included in the analysis: Breastfeeding Intent (1 = formula feeding alone; 2 = a combination of formula and breastfeeding; 3 = breastfeeding alone), Breastfeeding Attempt (1 = attempted; 2 = did not attempt); Duration of Exclusive Breastfeeding (ranging from 0 – 32 weeks); Duration of Any Breastfeeding (ranging from 0 – 32 weeks). As well, the following risk factors variables were also included: Social Support (1 = none of the time; 2 = a little of the time; 3 = some of the time; 4 = most of the time; 5 = all of the time), Stress in Past Year (1 = not stressful; 2 = somewhat stressful; 3 = very stressful), Wanted Pregnancy (1 = no; 2 = yes), Previous Depression or Antidepressant Use (1 = yes; 2 = no), Current Smoker (1 = yes; 2 = no), Drinking During Pregnancy (1 = yes; 2 = no), Number of Live Births (range: 1 – 12 live

births), History of Abuse in the Last Two Years (1 = yes; 2 = no), Mother's Education (1 = grade 8 or lower; 2 = any high school; 3 = high school graduate; 4 = some post-secondary; 5 = college or trade or university certificate; 6 = university bachelors; 7 = graduate degree), Marital Status (1 = married/ common law; 2 = widowed/separated/ divorced; 3 = single/never married), Baby Age when Returned to Work (range: 0 – 32 weeks), Household Income (1 = Less than \$10000; 2 = \$10000 to less than \$15000; 3 = \$15000 to less than \$20000; 4 = \$20000 to less than \$30000; 5 = \$30000 to less than \$40000; 6 = \$40000 to less than \$50000; 7 = \$50000 to less than \$60000; 8 = \$60000 to less than \$80000; 9 = \$80000 to less than \$100000; 10 = \$100000 to less than \$150000; 11 = \$150000 to less than \$200000; 12 = \$200000 or more), and Rural (1 = rural; 2 = urban). See Appendix 1 for a copy of the complete survey (reprinted with permission).

Measures

Edinburgh Postnatal Depression Scale (EPDS; Cox, Holden, & Sagovsky, 1987).

Postpartum depression was measured based on the women's scores on the EPDS, a scale widely used to assess for postpartum depression and postpartum depression risk (Beck, 2001). The EPDS is a 10 item self-report scale which asks women to report the extent to which they have experienced specific depressive symptoms within the past seven days on a four point Likert-type scale (0 = no presence of the symptom, 3 = marked presence or change; Appendix 1 includes a copy of the EPDS questionnaire). The cut-off classifications are based on literature which suggests that total scores of 0-9 indicate not depressed, 10-12 some depressive symptoms present, and 13-30 indicative of a greater number/ severity of depressive symptoms which may indicate postpartum depression (the EPDS total score ranges from 0 to 30; Cox, Holden, & Sagovsky, 1987). When using a cut-off score of 12/13 the EPDS is reported to have satisfactory sensitivity (68-95%) and specificity (78-96%) for the purposes of this investigation. The

Table 1

Descriptive Statistics of Women in the Sample

Variable	Relative frequency
Marital Status (<i>N</i> = 2847)	
Married	2632 (92.4%)
Widowed, separated, or divorced	57 (2.0%)
Single	158 (5.6%)
Parity (<i>N</i> = 2845)	
Primiparous	1311 (46.1%)
Multiparous	1533 (53.8%)
Education (<i>N</i> = 2831)	
Did not graduate high school	182 (6.4%)
Graduated high school	382 (13.4%)
Some postsecondary	179 (6.3%)
Completed postsecondary education	2088 (73.3%)
Household Income (<i>N</i> = 2703)	
< \$10000	61 (2.2%)
\$10000 - \$15000	87 (3.2%)
\$15000 - \$20000	95 (3.5%)
\$20000 - \$30000	196 (7.2%)
\$30000 - \$40000	264 (9.8%)
\$40000 - \$50000	241 (8.9%)
\$50000 - \$60000	279 (10.3%)
\$60000 - \$80000	541 (20.0%)
\$80000 - \$100000	374 (13.8%)
\$100000 - \$150000	425 (15.7%)
\$150000 - \$200000	85 (3.1%)
> \$200000	56 (2.1%)
History of depression or antidepressant use* (<i>N</i> = 2844)	
Yes	432 (15.2%)
No	2412 (84.8%)
History of abuse (past two years) (<i>N</i> = 2846)	
Yes	304 (10.7%)
No	2542 (89.3%)
Social support availability (<i>N</i> = 2839)	
None of the time	40 (1.4%)
A little of the time	125 (4.4%)
Some of the time	283 (10.0%)
Most of the time	912 (32.1%)
All of the time	1479 (52.1%)
Stress in the past year prior to delivery (<i>N</i> = 2840)	
Not stressful	1213 (42.7%)
Somewhat stressful	1267 (44.6%)
Very stressful	360 (12.7%)

* Prior to pregnancy

Cronbach alpha coefficient is reported to be .87 (Cox, Holden, & Sagovsky, 1987; Dennis, 2004; Harris et al., 1989; Murray & Carothers, 1990). The EPDS has been translated across a number of languages and has shown to have satisfactory reliability and validity across cultures (Lau et al., 2007). The scale takes less than five minutes to complete (Cox, Holden, & Sagovsky, 1987) and was completed by participants in this study as part of the phone interview.

Statistical Analysis

IBM SPSS (version 22) was used to perform all statistical analyses. Descriptive statistics for the full sample population were calculated first and can be found in a preceding section in Table 1. Next, the data were examined for apparent errors. Women were stratified into three groups based on their EPDS score, using the cut-off scores suggested by Cox, Holden, and Sagovsky (1987). Although we recognize that categorizing a dimensional entity may impose restrictions on the information obtained (Streiner, 2002), doing so improved the clinical relevance and interpretability of the results. Specifically, in this particular investigation we were less interested in explaining subclinical variations in mood as we were in explaining which variables would predict clinical levels of postpartum depression (in the absence of a clinical diagnostic interview). A categorical approach allowed us to reduce the ambiguity that may result from not clearly delineating between levels of depression indicative of a clinical syndrome and subclinical levels of depressive symptomology [symptomatology] by comparing women who were almost certainly not depressed to women whose symptom endorsement would almost certainly be indicative of postpartum depression (Tuohy & McVey, 2008).

For the purposes of our analyses some of the variables needed to be recoded. Information pertaining to recoding can be found in Appendix 2. Any variables coded as not applicable, refused, or unknown were treated as missing data.

Due to the categorical nature of the outcome measure and the variations expected in sample size for each condition, a statistical method which does not require the assumption of normality, namely logistic regression analysis, was employed to test our hypotheses. While initially multinomial logistic regression was chosen for our main analyses, it became clear when conducting the analysis that binary logistic regression was a more appropriate statistical method for our purposes. The binary logistic regression enhanced the interpretability of the analysis as it compared women with no/low endorsement of depressive symptoms (indicative of no depression) to those with high endorsement of symptoms (indicative of a postpartum depression episode), removing individuals with moderate, sub-clinical symptom expression from the outcome variable.

Main effects to determine the risk for postpartum depression due to both feeding intention and attempt to breastfeed were then examined using logistic regression. The outcome variable was level of depressive symptoms based on the participants' scores on the EPDS comparing women with scores indicative of no/low depressive symptoms reported (score 0-9) to women with scores indicative of a greater number/ severity of depressive symptoms which may indicate postpartum depression (score 13-30).

In order to account for variance resulting from a number of known risk factors for postpartum depression and early breastfeeding cessation (younger age, lower level education, being single/divorced/separated, not wanting the pregnancy, lower socioeconomic status/income, primiparity, smoking, history of alcohol use, history of physical or sexual abuse, the experience of birth and postpartum stressors, history of depression and antidepressant use, residing in large urban areas, plan to return to work in the early postpartum, and poor social support; Dagher & Shenassa, 2012; O'Hara & McCabe, 2013), the binary logistic regression analysis was repeated

with the addition of variables related to these known risk factors. History of substance use has also been identified in past literature as a risk factor for postpartum depression (Chapman & Wu, 2013), however as the endorsement rate of street drug use during pregnancy was negligible in this sample ($n = 18$, 0.6%), this variable was not considered in the analyses. All analyses were weighted in accordance with guidelines issued by Statistics Canada to account for oversampling conducted in some geographic locations. In each analysis the Enter method was selected as this method enters all the predictor variables into the equation simultaneously and evaluates each as though it were entered into the equation last. This method of analysis is preferred when there is no specific hypothesis regarding the order or importance of the variables (Tabachnick & Fidell, 2014), as is the case in the current investigation.

Results

Descriptive Statistics

As can be seen in Table 2, 77.1% of women in this sample intended to exclusively breastfeed (including pumping breast milk), 13.5% intended to breastfeed and bottle-feed in combination, and 9.5% intended to exclusively bottle-feed. Of all the women included in the analysis 90.1% attempted to breastfeed and 57.4% were still breastfeeding at least occasionally at the time of the interview, 15.2% of whom were still exclusively breastfeeding.

Reliability Analyses

Mean score on the EPDS in this sample was 5.19 ($SD = 4.38$) and Cronbach's $\alpha = .81$. Table 3 provides all inter-item correlations for the EPDS items for this study. As can be seen from the chart, most (but not all) individual inter-item correlations fell between the generally accepted cut-off of .20 and .65, with the range of .16 (item 3 and 10) to .58 (item 8 and 9).

Table 2

Descriptive Statistics of Depression and Breastfeeding Variables

Variable	Mean (SD)	Relative Frequency
Edinburgh Postnatal Depression Scale score (<i>N</i> = 2817)	5.19 (4.38)	
EPDS score > 12		203 (7.2%)
EPDS score 10 – 12 (inclusive)		233 (8.3%)
EPDS score < 10		2381 (84.5%)
Breastfeeding intention (<i>N</i> = 2838)		
Exclusive breastfeeding		2187 (77.1%)
Combination feeding		383 (13.5%)
Exclusive formula feeding		269 (9.5%)
Breastfeeding attempt (<i>N</i> = 2848)		
Attempted to breastfeed		2589 (90.9%)
Did not attempt to breastfeed		260 (9.1%)
Intended to breastfeed/ Attempted breastfeeding		2169 (76.4%)
Intended to combination feed/ Attempted breastfeeding		366 (12.9%)
Intended to formula feed/ Attempted breastfeeding		47 (1.7%)
Intended to breastfeed/ Did not attempt to breastfeed		18 (0.6%)
Intended to combination feed/ Did not attempt to breastfeed		17 (0.6%)
Intended to formula feed/ Did not attempt to breastfeed		222 (7.8%)
Exclusive breastfeeding duration in weeks (<i>N</i> = 2844)	13.49 (11.77)	
Any breastfeeding duration in weeks (<i>N</i> = 2844)	20.66 (13.21)	

Note. EPDS = Edinburgh Postnatal Depression Scale

Table 3

Edinburgh Postnatal Depression Scale (EPDS) Inter-Item Correlation Matrix

EPDS Item	1	2	3	4	5	6	7	8	9
1									
2	.52								
3	.20	.22							
4	.23	.24	.40						
5	.20	.23	.34	.54					
6	.36	.34	.29	.33	.30				
7	.32	.35	.27	.32	.33	.34			
8	.38	.37	.33	.39	.37	.42	.47		
9	.31	.33	.33	.34	.32	.37	.41	.58	
10	.23	.28	.16	.17	.17	.21	.25	.29	.28

Table 4

Edinburgh Postnatal Depression Scale (EPDS) Corrected Item Total Correlation

EPDS Item	Original 10-Item Scale (Cronbach's $\alpha = .83$)	
	Corrected Item Total Correlation	Cronbach's α if Item Deleted
1	.46	.80
2	.48	.80
3	.46	.80
4	.55	.79
5	.52	.79
6	.52	.79
7	.53	.79
8	.64	.78
9	.58	.79
10	.34	.81

The corrected item-total correlation for all items of the EPDS fell within acceptable ranges (ranging from .34 to .64). See Table 4 for all corrected item-total correlations and corresponding Cronbach's α if the item was deleted.

Hypothesis 1

Binary logistic regressions were first conducted to determine if main effects exist between breastfeeding intent (model 1) or breastfeeding attempt (model 2) with EPDS depressive symptom categories (not depressed, depressed). Next, the analysis was then run once more with breastfeeding intent and attempt, as well as their interaction along with variables related to a number of prominent postpartum depression risk factors included in the equation (model 3). The results of each set of analysis can be found in Table 5.

As can be seen from the table, the univariate binary logistic regression results indicate that, compared to intent to exclusively breastfeed, intent to combination feed decreased the risk for meeting EPDS threshold criteria for depression at a level that is statistically significant ($\chi^2 (1) = 9.53, p = .001$). However, when the analysis was repeated controlling for other prominent postpartum depression risk factors, these factors were no longer related.

When considering all risk factors, the model was significant and accounted for approximately 22% of the variance in explaining EPDS scores > 12 (Nagelkerke R Squared). As can be seen from the table, when examined in the context of the other postpartum depression risk factors, intention to combination feed was no longer associated with meeting EPDS threshold criteria for depression. Moreover, the binary logistic regression results indicated that some, but not all, other risk factors included in the analysis were statistically significant in predicting risk of postpartum depression in this sample. In particular, when controlling for the other variables in the model, lower household income ($\chi^2 (1) = 22.50, p < .001$), higher perceived

Table 5

*Binary Logistic Regression Analysis of Breastfeeding Intent, Attempt, and Postpartum**Depression Risk Factors with Depression Scores*

Model	Variable	B	OR	IOR ^a	Sig.	95% Confidence Interval for OR [IOR]	
						Lower	Upper
1	Intent (intend to exclusively breastfeed)						
	Intend to exclusively formula feed	0.44	1.55		.159	0.84	2.86
	Intended to combination feed	-0.57	0.57	1.75	.002*	0.40 [1.25]	0.81 [2.50]
2	Breastfeeding Attempt (attempted)						
	Did not attempt breastfeed	0.32	1.37		.268	0.78	2.40
3	Mother's age	-0.03	0.97		.165	0.94	1.01
	Education	0.02	1.02		.807	0.88	1.17
	Marital status (married)						
	never married	0.42	1.52		.284	0.71	3.26
	widowed/separated	-0.21	0.81		.649	0.34	1.98
	Did not want pregnancy	-0.24	1.26		.502	0.64	2.50
	Household income	0.18	1.19	0.84	<.001**	1.11 [0.78]	1.28 [0.90]
	Number of live births	-0.11	0.90		.211	0.76	1.06
	Currently smoke	-0.03	0.97		.889	0.61	1.54
	Drinking during pregnancy	-0.05	0.95		.850	0.56	1.60
	History of abuse	-0.47	0.63	1.59	.044*	0.40 [1.01]	0.99 [2.50]
	Level of stress past year	-0.66	0.52	1.92	<.001**	0.41 [1.52]	0.66 [2.44]
	History depression/antidepressants	-1.01	0.36	2.78	<.001**	0.25 [1.89]	0.53 [4.00]
	Urban versus rural	0.43	1.54		.096	0.93	2.57
	Level of social support	0.69	1.98	0.51	<.001**	1.70 [0.43]	2.31 [0.59]
	Time returned to work postpartum	-0.03	0.97		.081	0.94	1.00
	Breastfeeding intent	-0.07	0.93		.745	0.61	1.42
	Breastfeeding attempt	0.59	1.81		.514	0.31	10.69
	Interaction intent & attempt	-0.45	0.64		.363	0.24	1.69

Note. OR = Odds Ratio; IOR = Inverted Odds Ratio.

a. Odds ratio values were manually inverted (formula $1/OR=IOR$) to enhance the interpretability of the data. Inverted variables reflect how the risk factor relates to endorsement of depression. (i.e., to reflect if the dependant variable was inverted where not depressed was coded 0 and depressed was coded 1).

* $p < .05$

** $p < .001$

level of stress ($\chi^2 (1) = 28.71, p < .001$), and lower social support ($\chi^2 (1) = 77.99, p < .001$) significantly predicted meeting EPDS threshold criteria for depression in this sample. As well, contrary to what would be expected based on existing literature, we found that no history of abuse ($\chi^2 (1) = 4.05, p < .05$) or no history of depression ($\chi^2 (1) = 26.92, p < .001$) significantly predicted meeting EPDS threshold criteria for depression in this sample. In other words, contrary to what has been reported, having a history of abuse or depression reduced the risk for postpartum depression in this sample.

Hypothesis 2

Correlation analysis was conducted to determine if a linear association existed between duration of exclusive or any breastfeeding and EPDS scores in this sample. Results of this analysis are presented in Table 6. As can be seen in the table, the relationship between duration of exclusive breastfeeding is associated with EPDS scores at a level that is statistically significant ($p < .05$). This suggests that shorter duration of exclusive breastfeeding increased the risk for postpartum depression. However, the effect size of this association is negligible. An association between any breastfeeding and EPDS scores was not supported in this analysis.

In order to assess if there was an association between the duration of exclusive or any breastfeeding between women who were depressed (EPDS > 12) compared to women who were not depressed (EPDS score < 9) a binary logistic regression was conducted. Results are reported in Table 7. Neither of these variables significantly predicted meeting EPDS threshold criteria for depression.

Table 6

Correlations for Breastfeeding Duration with Edinburgh Postnatal Depression Scale (EPDS)

scores

Variable	EPDS score	95% Confidence Interval	
		Lower	Upper
Duration of exclusive breastfeeding	-.046*	-.08	-.01
Duration of any breastfeeding	-.024	-.06	.01

* $p < .05$

Table 7

Binary Logistic Regression Analysis of Breastfeeding Duration and Edinburgh Postnatal

Depression Scale (EPDS) Scores

Variable	B	OR	Sig.	95% Confidence Interval for OR	
				Lower	Upper
Duration of exclusive breastfeeding	0.001	1.01	.466	0.99	1.02
Duration of any breastfeeding	-0.002	1.00	.732	0.99	1.01

Note. OR = Odds Ratio

Discussion

The primary purpose of this study was to determine if women who did not attempt to breastfeed were at an increased risk for postpartum depression. As well, we sought to determine if prenatal intention to breastfeed influenced the association between breastfeeding and postpartum depression. The results of this study, derived from a large population-based sample, failed to support findings of previous literature which suggested an association between breastfeeding and postpartum depression. Specifically, when other risk factors were considered, breastfeeding attempt or intention to breastfeed did not reduce the risk for postpartum depression. Thus, when other risk factors are considered, we failed to reject the null hypothesis that women who attempted to breastfeed differed from women who did not attempt to breastfeed for risk of postpartum depression at five to seven months postpartum. Moreover, when other risk factors are considered, we failed to reject the null hypothesis that women who intended to breastfeed differed from women who did not intend to breastfeed or intended to combination feed in risk for postpartum depression. As well, no interaction effect was evident between breastfeeding attempt and intent when other potential risk factors were considered in the equation.

As well, previous research has suggested a dose response effect of breastfeeding with postpartum depression (Hahn-Holbrook et al., 2013). That is, women who breastfeed more or for longer periods of time are reported to be at a reduced risk for postpartum depression (e.g., Thome, Alder, & Ramel, 2006; Ystrom, 2012). In this study, we examined the dose response effect in two ways: first, by examining duration of exclusive breastfeeding, and second, by examining duration of any breastfeeding. Correlational analysis revealed that duration of exclusive breastfeeding was negatively associated with scores on the EPDS. However, the effect

size of this association was negligible and supplementary examination with binary logistic regression did not show a significant association between duration of exclusive breastfeeding, comparing women who were not depressed to women who were depressed using EPDS threshold criteria. Further, in contrast with other research, the results of the present study did not reveal an association between duration of any breastfeeding and risk of postpartum depression when examined by correlational analysis or binary logistic analysis. Thus, the results of the current study align with that of the prospective study by Bogen and colleagues (2010) who also failed to find an association between breastfeeding intention, initiation, or duration and postpartum depressive symptoms measured at 2 and 12 weeks postpartum. The study by Bogen and colleagues was also designed to control for some of the limitations in previous research. Primarily, the investigators controlled for a number of potential covariates in their analysis and used clinician rated measures to assess for postpartum depression.

As well, large sample sizes, such as that used in the current investigation, allow for detection of even smaller differences, and minimize the likelihood of a Type II error in equivalency testing (Streiner, 2003). Moreover, an extreme group approach, which excluded individuals endorsing subclinical levels of depression from the analysis, was used in this study. Such an approach upwardly biased estimates of standardized effect size and increased the likelihood of detecting a significant difference between groups (Preacher, Rucker, MacCallum, & Nicewander, 2005). Thus, while non-significant findings do not assure that no association exists, when viewed in light of the considerably large sample size and method of categorization that encouraged differences to be detected, the results of this study strongly suggest breastfeeding status does not act as a standalone risk factor for the experience of postpartum depression. As stated, the correlational analysis suggested a negative relationship between

duration of exclusive breastfeeding and postpartum depression; however, the small magnitude of the effect size suggests that this association is unlikely to translate into clinically relevant observations. This assertion is further supported by the binary logistic regression which did not reveal a significant association in either duration of exclusive breastfeeding or duration of any breastfeeding with increased risk for postpartum depression.

The contrast between the results of this study and previous literature could be due to a number of methodological differences. For instance, in this study we investigated the experience of depression at five to seven months postpartum in contrast to other studies that have used an earlier time point in the postpartum period (e.g., Thome, Alder, & Ramel, 2006). However, Ystrom (2012) used a similar timeframe and, in contrast to our findings, found that women who exclusively breastfed were at a reduced risk for postpartum depression compared to women who combination fed or did not breastfeed at all. As well, in contrast to a number of the previous studies (e.g., Akman et al., 2008) we evaluated the association of breastfeeding and postpartum depression in a large population-based sample. However, Davey and colleagues (2011) examined the relationship between not breastfeeding at eight weeks postpartum and depression at eight weeks postpartum in a large sample of 1403 perinatal women and found that risk for postpartum depression was significantly increased in women who did not breastfeed. In spite of the large sample size, the study by Davey and Colleagues had a number of other disparities when contrasted with the current study. Namely, the time frame they used was much earlier in the postpartum period (8 weeks) and the dependent (EPDS score) and independent (breastfeeding status) variables were collected in reference to the same time period (8 weeks) making interpretation regarding the directionality of the relationship impossible.

Discerning whether breastfeeding is associated with decreased risk for postpartum depression has implications for postpartum depression interventions. For instance, some women may be advised to change their breastfeeding practices to help address symptoms associated with postpartum depression, such as trouble sleeping, or to increase the ability for others to assist in infant feedings (Pope, Sharma, & Mazmanian, 2014b). If in fact early breastfeeding cessation does increase a mother's risk for postpartum depression, then clinical recommendations such as the preceding examples may jeopardize the mother's mental health. As well, some experts have proposed that early breastfeeding cessation may be a non-invasive indicator for clinicians to identify women at risk of postpartum depression (Davey et al., 2011). However, the results of this study are not in agreement with previous literature and indicate that breastfeeding status alone is not a significant risk factor for postpartum depression. Thus, if a relationship does exist it is more complicated than the current way the relationship is conceptualized.

As part of this investigation the association of other factors (previously identified in existing literature as risk factors for postpartum depression) was also examined. Interestingly, not all of the risk factors identified in previous research were found to be significant risk factors for postpartum depression in this sample. In particular, when considering all potential risk factors in the model, mothers' age, education level, marital status, smoking and drinking status were not found to be significantly associated with depression status. Nor was not wanting the pregnancy, urban living, number of previous live births, or the time postpartum the mother returned to work. This suggests that when other risk factors are considered, these specific factors may not in fact put women at increased risk for postpartum depression.

However, in agreement with the previous literature some risk factors were found to be significantly related to depression status. Specifically, when considering all potential risk factors

included in the binary logistic regression model in this study, decrease in household income, higher perceived stress, and lower perceived social support were associated with meeting study threshold criteria for depression. In contrast with previous research no history of depression or antidepressant use increased the risk of endorsing an EPDS score, while not endorsing the experience of abuse in the past two years increased the risk of endorsing an EPDS score > 12.

As of 2014, in Canada, the low income cut-off (LICO), for a two person household was \$29,706 (Government of Canada, 2015), which captures approximately 16% of the women in this study. Consistent with past research (e.g., Galler et al., 1999), low household income was a risk factor for postpartum depression in this sample. This finding highlights that of previous research which suggests that women of low SES are at an increased risk for postpartum depression (Hamdan & Tamim, 2012; Jacobson et al., 1991; O'Hara & McCabe, 2013).

As well, for women in this sample, the experience of higher perceived stress in the 12 months prior to delivery of the index child and lower perceived social support during the postpartum period was associated with an elevated risk of postpartum depression. Congruent findings regarding the association between stress and postpartum depression have been reported by other investigators (e.g., Davey et al., 2011; Giallo, Cooklin, & Nicholson, 2014). Moreover, the finding that lower perceived social support was associated with postpartum depression is consistent with a number of studies that suggest social support may reduce the risk of, or protect against, postpartum depression (e.g., Leahy-Warren et al., 2012; Nielsen et al., 2000; Surkan et al., 2006). For instance, perceived social support from partners, other family members, and/or friends has been shown to be inversely related to postpartum depression (Leahy-Warren et al., 2012). Further, the availability of at least two individuals to provide a mother with social support has been reported to be significantly related to lower depressive scores compared to

mothers who reported having one or no friends or relatives available (Surkan et al., 2006). Taken together with the results of the current investigation, it appears that efforts to reduce a mother's perceived stress and strengthen a mother's available social support may improve maternal mental health outlook, specifically with regards to the experience of postpartum depression.

In contrast to other research, results of the current study suggest that women who do not report a recent experience of abuse (within two years) are at increased risk for postpartum depression compared to women who do endorse a recent history of abuse. This finding is counterintuitive to what would be hypothesized based on the existing research (e.g., Meltzer-Brody et al., 2013). In fact, a recent systematic review found that women who had a history of intimate-partner violence had a 1.5 to 2.0 fold increased risk for postpartum depression (Beydoun et al., 2012). The current study considered abuse by various perpetrators (a partner, family member, friend or stranger) and considered various forms of abuse (including verbal, physical, and sexual) which may account for the discrepancies seen between the current study and past research that used more specific criteria. It is possible that the broad classification of abuse used in the current study may have overshadowed an effect that may have been observed had each category of abuse (verbal, physical, sexual) been considered in isolation.

In addition, it has been well documented in the research literature that a history of depression increases the risk for the subsequent experience of depression (Colman et al., 2011) especially during the perinatal period (Davey et al., 2011; Freeman et al., 2002). However, in the current study, having no history of depression or antidepressant use increased the odds of women's relative risk of depression when other potential risk factors were also considered. It is possible that the results observed in the current study speak to a potential preventative effect.

That is, identification or treatment of depression prior to pregnancy may reduce the risk that a new mother will experience postpartum depression or may allow for swifter identification and treatment when it does occur. However, future research is required to test this conjecture.

It is notable that some of the risk factors identified in the current investigation are similar to factors that have been found by previous research to predict a more chronic course of postpartum depression. Specifically, lower family income, less perceived social support, and stressful life circumstances (Giallo, Cooklin, & Nicholson, 2014; Seto et al., 2005; Vliegen, Casalin, & Luyten, 2014) are implicated in more chronic postpartum depression. Thus, the current investigation may have captured women with a more persistent form of postpartum depression.

Finally, in the current study, we included a large number of risk factors identified by the empirical literature. Interestingly, the results of the current study suggest that even with the inclusion of many empirically supported risk factors, there is still a large proportion of variance unaccounted for (approximately 78%). However, in binary logistic regression an equivalent statistic to *R*-squared does not exist, so this estimate is based on a pseudo *R* square value (Tabachnick & Fidell, 2014). Based on this estimate it appears that even when we consider a number of empirically supported risk factors, the factors leading to postpartum depression are still largely unknown. However, more recent research points at potential underlying biological mechanisms, such as alterations in hormonal levels, inflammation, and genetic predisposition (Skalkidou et al., 2012). As well, differences in the type or form of depression experienced may also hinder our ability to detect significant predictive factors. For instance it is possible that the factors that increase the risk for postpartum unipolar depression differ from those that increase the risk for postpartum bipolar depression.

Strengths

The large population-based sample of postpartum women used in this study is a notable strength of this investigation. A larger sample size promotes more precise estimates of the magnitude of an association and the ability to detect small but statistically significant associations that may be overlooked when smaller sample sizes are used. Larger sample sizes have a reduced potential for producing false-positive results than do smaller samples and allows for covariates to be assessed in a manner that encourages more interpretable results (Hackshaw, 2008). As stated earlier, while the nonsignificant findings do not assure that no relationship exists, the extensive sample size of this study does allow for some confidence in the interpretation that breastfeeding practices are not a standalone risk factor for postpartum depression.

The sizable number of mothers included in this sample also allowed for the inclusion of multiple covariates without the risk of overfitting (models with too many variables for the number of outcome events; Babyak, 2004). The inclusion of several additional known risk factors for postpartum depression is another significant strength of this study. This provided two advantages. First, it allowed for the interpretation of the relationship, or lack thereof, of breastfeeding practices and postpartum depression after controlling the potential influence of other prominent risk factors. Second, it allowed us to examine what alternative covariate factors may be associated with an increased risk for postpartum depression in our sample. As a result, we were able to provide evidence for some, but not all, postpartum depression risk factors identified in the past literature.

The use of the EPDS (Cox, Holden, & Sagovsky, 1987) was also a significant strength of this study. The EPDS is one of the most commonly used instruments in research for the

assessment of postpartum depression (Beck, 2001). While the EPDS is not a clinical diagnostic instrument, the psychometric properties of the measure are well supported in the existing literature (Cox, Holden, & Sagovsky, 1987; Dennis, 2004; Harris et al., 1989; Murray & Carothers, 1990). In the current study, the reliability measures were good and consistent with values provided by past researchers.

The statistical method chosen in this study, logistic regression, is commonly used in the analysis of epidemiologic data to investigate the association between potential risk factors and a disorder or disease. The advantage of this type of analysis is that it can enhance our understanding of the circumstances regarding postpartum depression, because the coefficient of each risk factor or predictors explicitly describes the relative contribution of each risk factor in relation to the dependant variable, automatically controlling for the contribution of the other risk factors (Bagley, White, & Golomb, 2001). As well, results from binary logistic regression analysis are readily translated into clinically useful information regarding risk. However, we recognize that categorizing a dimensional entity does pose restrictions on the information that could be obtained from a continuous measure (Streiner, 2002).

Limitations

The findings of this study should be viewed in light of the following considerations. The measure of postpartum depression taken in this sample was not a clinical diagnostic instrument. However, currently there is no gold standard for measuring postpartum depression (Vliegen et al., 2014) and the EPDS is currently the most commonly used screening instrument for assessing depression throughout the perinatal period (Hewitt et al., 2009). Nonetheless, the EPDS only identifies the risk for having a disorder and diagnostic assessment is further required for a formal diagnosis (Wisner et al., 2013). However, administering a clinical interview to a population-

based sample comes with obvious practical restraints, as they require that interviewers be appropriately trained and requires much more time to administer. Moreover, exclusion of individuals scoring in the intermediate range on the EPDS (10-12) may limit the generalizability of our findings as they do not include information about women meeting subclinical criteria. In the current study the goal was to delineate if breastfeeding factors or other risk factors predicted postpartum depression when compared to women who were not depressed. However, future research should evaluate to what extent these results also apply to women endorsing subclinical postpartum depression symptoms.

In the current study, depression scores were derived from women at five to seven months postpartum which does not comply with the definitions of postpartum depression according to the current diagnostic criteria. However, there is currently a lack of consensus regarding the time frame to reference for a diagnosis of postpartum depression (Sharma & Mazmanian, 2014; Vliegen et al., 2014). For instance, currently the DSM-5 requires that a major depressive episode with peripartum onset begin during pregnancy or during the first four weeks following childbirth (APA, 2013), while the ICD classifies postpartum depression as occurring within the first six weeks postpartum (World Health Organization, n.d.). Further, a number of researchers argue that these time frames are arbitrary and longer time frames that range up to one year postpartum are more reflective of clinical practice (Sharma & Mazmanian, 2014; O'Hara & McCabe, 2013). This controversy is also reflected in the research literature as many investigations do not adhere to the four to six weeks following childbirth criterion (e.g., Hamdan & Tamim, 2012; Nielsen Forman et al., 2000). As there is currently no consensus regarding time frame for differentiating a postpartum depressive episode from a major depressive episode (Vliegen et al., 2014), and full comprehension of the natural course of postpartum disorder still

eludes experts, it is hoped that the current study might contribute to a better understanding of what puts women at risk for postpartum depression, with particular reference to the later postpartum period.

The method by which the data were derived also resulted in a few limitations. In particular, the questions used to obtain data in this research were developed for the purposes of the CMES. Thus, the current study was restricted to the use of data collected as part of this survey. The CMES was a rather comprehensive survey of women's experiences during the postpartum period which allowed for many risk variables identified by the literature to be examined as part of this study. However, as a consequence of having no control over the survey material there was some information missing from the analysis that would have been informative. Specifically, while women who had a history of depression or antidepressant use could be identified, information regarding when they were diagnosed or prescribed medication was not available, nor was information regarding use of psychoactive medication during pregnancy and the postpartum period. As medication use has implications for both breastfeeding practices and the experience of depressive symptoms (Bogen et al., 2010), this omission is a limitation of the current investigation. Based on available estimates provided in the existing research, we can infer that approximately 1.2% of our sample was being treated with antidepressant medication at the time of the survey (Munk-Olsen, Gasse, & Laursen, 2012). A further consideration that was not accounted for in this study was a distinction between unipolar and bipolar postpartum depression. This distinction is important as the causal factors may differ between these two disorders. Based on available estimates provided in the existing research, we can infer that approximately 1.3% of our sample who endorsed postpartum depression would

meet criteria for the bipolar variant (López-Zurbano, González-Pinto, & López, 2015).

Unfortunately symptoms of bipolar disorder were not assessed for as part of the CMES.

Findings from this study should also be considered in light of the typical limitations imposed by retrospective studies and studies relying on participant self-report measures. That is, both studies rely on participant recall of past events. Some of the women in this study may have inaccurately recalled some past experiences. However, most of the retrospective information that the women in this study were asked to provide regarded salient events from their pregnancy or following childbirth (e.g., when they stopped breastfeeding, when they returned to work) which might minimize recall error. Another potential issue with self-report measures is a risk that some participants may skew their answers to be viewed as more socially desirable. This study did not contain any measures of social desirability that could address this limitation. However, women were assured by the interviewers that their answers would remain strictly confidential to encourage more forthcoming responses.

Future Research

It would be ideal if future research could attempt to replicate the results of this study with other large population-based samples. It would also be interesting to see if similar results are seen when considering other time points during the postpartum. Considering the hormonal shifts that accompany cessation of breastfeeding, it would also be interesting to further assess if recent cessation is associated with an increase in depressive symptoms. If so how long do the symptoms persist for and do they correspond with hormonal changes? Such research would add to our knowledge regarding the potential for hormonal shifts to result in adverse physical and psychological symptoms in susceptible women. It is also possible that breastfeeding cessation is

associated with an increase in depressive symptoms in a subset of women as part of a Hormonal Sensitivity Syndrome (HSS; Pope, Oinonen, Mazmanian, & Stone, 2015).

The contrast between the current study and that of other research may also reside in the directionality of the relationship. For instance, researchers such as Dennis and McQueen (2007) found that depressive symptomology in the early postpartum predicted early cessation of breastfeeding at eight weeks postpartum. Not only do these results suggest that postpartum depression may contribute to early weaning, their findings further suggested that depressive symptoms may take several weeks to influence infant feeding outcomes to a point of discontinuation. This is encouraging because it means that if postpartum depression is caught and managed early, it may be less likely to adversely influence breastfeeding practices (Dennis, & McQueen, 2007; Taveras et al., 2003). Future research should look to corroborate these findings, throughout the postpartum period, perhaps using a longitudinal repeated measures approach. Such research would be especially useful in determining if there is a critical period during the postpartum period where postpartum depression influences breastfeeding practices.

While the current study did not look at course of treatment, the observation that the risk factors identified in this sample may suggest a more chronic course of depression brings light to the need for more research regarding the course of postpartum depression. Further, research investigating the factors that increase the risk of earlier versus later onset of the disorder as well as factors that may predict a longer course is also needed. This information may be valuable in guiding clinical decision making regarding: 1) which women require more careful monitoring, 2) the length of time women should be monitored for as informed by research and risk factors, and 3) which women are at risk of a more chronic course as this may be particularly important when considering pharmacological interventions.

Finally, it would also be clinically useful for future research to seek to identify factors that protect women from experiencing postpartum depression when they are at increased risk. While some research has looked at this topic, especially in relation to perceived social support, it would be ideal to better understand what factors protect against postpartum depression. Potential factors may be situational or environmental, such as perceived social support, or may be internal, such as personality characteristics (e.g., extraversion) or habits (e.g., exercise). As there may be little a clinician can offer to directly change past or current life circumstances that increase risk (e.g., poverty, stressful life events), it would be advantageous to know what modifiable factors (e.g., increased social support) may decrease the chances that a woman will experience postpartum depression, even in the face of these challenges. This would allow clinicians to make recommendations to help prevent postpartum depression.

Conclusions

In spite of the growing empirical evidence regarding breastfeeding and postpartum depression, there is still a lot we do not know. As well, interpretations of research are impeded by many of the same conundrums that exist when attempting to empirically understand postpartum depression in general. For instance, much of the research is naturalistic in nature, restricting the ability to make causal inferences. As well, the physiological changes that occur over the course of pregnancy and the postpartum are not completely understood and the hormonal shifts during pregnancy may influence a woman's mental health and well-being in different ways depending on the time period referenced. Hopefully, with further empirical study the existing gaps in our knowledge regarding postpartum depression will decrease and our ability to prevent postpartum depression will become more effective.

The current study set out to determine if a relationship between breastfeeding practices and postpartum depression observed by previous researchers was evident when controlling for other factors. In particular, the aim was to determine if not being able to breastfeed as intended, may augment the relationship between breastfeeding and postpartum depression. The rationale was that women who were unable to breastfeed in accordance with their intention may be more likely to experience depression due to psychosocial factors associated with the disappointment from not breastfeeding their baby as they had hoped and the decreased self-efficacy or feelings of inadequacy that may result. In contrast to previous research and the hypotheses of this study, when controlling for other risk factors, breastfeeding attempt and duration was not associated with the experience of postpartum depression at five to seven months postpartum.

As well, while the analysis did show a relationship between the intention to combination feed and postpartum depression, these variables were no longer related once other potential risk factors were controlled. As this study used a very large sample, our results add to the existing research as they imply that breastfeeding practices themselves may not contribute to an increased risk for postpartum depression, in contrast to findings by other investigations. Of course, these implications must be interpreted with considerations made for postpartum time frame as this investigation used depression scores derived at five to seven months postpartum.

This study offers a further contribution to the empirical literature, as it provided evidence regarding other risk factors for postpartum depression. Specifically, lower income, higher perceived stress, and lower perceived social support significantly predicted risk for postpartum depression at five to seven months postpartum. This aligns with research which suggests that these risk factors may predict a more chronic course of the disorder. In contrast to previous research, a history of depression or a recent history abuse *decreased* the risk for postpartum

depression. These findings may reflect the broad way by which the variables were measured or perhaps indicate a certain degree of resiliency or preparedness that may have evolved from such circumstances, especially a past history of depression. However, this conjecture must be substantiated or clarified by future research.

The prognosis of a disorder is especially important to consider when determining treatment recommendations. Results of the current study support previous research which suggests that women who are diagnosed with postpartum depression and endorse certain life experiences (e.g., low social support) are at an increased risk for a more chronic disorder. However, in contrast to previous research, findings from the current investigation suggest that the association between breastfeeding cessation and increased risk for postpartum depression reported by previous researchers may in fact be due to alternative risk factors.

References

- Abou-Saleh, M., Ghubash, R., Karim, L., Krymski, M., & Bhai, I. (1998). Hormonal aspects of postpartum depression. *Psychoneuroendocrinology*, *23*(5), 465-475. doi: 10.1016/S0306-4530(98)00022-5
- Abramowitz, J. S., Meltzer-Brody, S., Leserman, J., Killenberg, S., Rinaldi, K., Mahaffey, B. L., & Pedersen, C. (2010). Obsessional thoughts and compulsive behaviors in a sample of women with postpartum mood symptoms. *Archives of Women's Mental Health*, *13*(6), 523-530. doi: 10.1007/s00737-010-0172-4
- Akman, I., Kuscu, M. K., Yurdakul, Z., Özdemir, N., Solakoğlu, M., Orhon, L., . . . Özek, E. (2008). Breastfeeding duration and postpartum psychological adjustment: Role of maternal attachment styles. *Journal of Paediatrics and Child Health*, *44*(6), 369-373. doi: 10.1111/j.1440-1754.2008.01336.x
- Alder, E., & Bancroft, J. (1988). The relationship between breast feeding persistence, sexuality and mood in postpartum women. *Psychological Medicine*, *18*(2), 389-396. doi: 10.1016/0022-3999(83)90090-9
- Alder, E. M., & Cox, J. L. (1983). Breast feeding and post-natal depression. *Journal of Psychosomatic Research*, *27*(2), 139-144. doi: 10.1016/0022-3999(83)90090-9
- American Psychiatric Association. (2013). *Diagnostic and Statistical Manual of Mental Disorders (5th ed.)*. Washington, DC: Author.
- Astbury, J., Brown, S., Lumley, J., & Small, R. (1994). Birth events, birth experiences and social differences in postnatal depression. *Australian Journal of Public Health*, *18*(2), 176-84. doi: 10.1111/j.1753-6405.1994.tb00222.x

- Babyak, M. A. (2004). What you see may not be what you get: A brief, nontechnical introduction to overfitting in regression-type models. *Psychosomatic Medicine*, 66(3), 411-421. Retrieved from: <http://www.google.ca/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&cad=rja&uact=8&ved=0CCcQFjAB&url=http%3A%2F%2Fwww.cs.vu.nl%2F~eliens%2Fsg%2Flocal%2Ftheory%2Foverfitting.pdf&ei=BqfBVOidMIGlgwTxwIPICQ&usg=AFQjCNGQx1ZN7q3EGQDzqkwayRUEg2Xs-Q>
- Bagley, S.C., White, H., & Golomb, B. A. (2001). Logistic regression in the medical literature. *Journal of Clinical Epidemiology*, 54(10), 979-985. Retrieved from http://resolver.scholarsportal.info/resolve/08954356/v54i0010/979_lritml
- Barnes, J., Stein, A., Smith, T., & Pollock, J.I. (1997). Extreme attitudes to body shape, social and psychological factors and a reluctance to breast feed. ALSPAC Study Team. Avon Longitudinal Study of Pregnancy and Childhood. *Journal of the Royal Society of Medicine*, 90(10), 551-559. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1296597/pdf/jrsocmed00035-0029.pdf>
- Beck, C.T. (2001). Predictors of postpartum depression: An update. *Nursing Research*, 50(5), 275-285. Retrieved from: <http://journals.lww.com/nursingresearchonline/pages/default.aspx>
- Bernard, J. Y., De Agostini, M., Forhan, A., Alfaiate, T., Bonet, M., Champion, V., . . . Heude, B. (2013). Breastfeeding duration and cognitive development at 2 and 3 years of age in the EDEN Mother–Child cohort. *Journal of Pediatrics*, 163(1), 36-42. doi: 10.1016/j.jpeds.2012.11.090

- Bick, D.E., MacArthur, C., & Lancashire, R.J. (1998). What influences the uptake and early cessation of breast feeding? *Midwifery*, *14*(4), 242-247. doi: 10.1016/S0266-6138(98)90096-1
- Bilszta, J. L. C., Tang, M., Meyer, D., Milgrom, J., Ericksen, J., & Buist, A. E. (2008). Single motherhood versus poor partner relationship: Outcomes for antenatal mental health. *Australian and New Zealand Journal of Psychiatry*, *42*(1), 56-65. doi: 10.1080/00048670701732731
- Bloch, M., Schmidt, P. J., Danaceau, M., Murphy, J., Nieman, L., & Rubinow, D. R. (2000). Effects of gonadal steroids in women with a history of postpartum depression. *The American Journal of Psychiatry*, *157*(6), 924-930. doi: 10.1176/appi.ajp.157.6.924
- Bogen, D. L., Hanusa, B. H., Moses-Kolko, E., & Wisner, K. L. (2010). Are maternal depression or symptom severity associated with breastfeeding intention or outcomes? *Journal of Clinical Psychiatry*, *71*(8), 1069-1078. doi: 10.4088/JCP.09m05383blu
- Buttner, M. M., O'Hara, M. W., & Watson, D. (2012). The structure of women's mood in the early postpartum. *Assessment*, *19*(2), 247-256. doi:10.1177/1073191111429388
- Britton, J.R. (2011). Infant temperament and maternal anxiety and depressed mood in the early postpartum period. *Women's Health*, *51*(1), 55-71. doi: 10.1080/03630242.2011.540741
- Brockington, I. (2004). Postpartum psychiatric disorders. *Lancet*, *363*(9405), 303-310. doi: 10.1016/S0140-6736(03)15390-1.
- Buttner, M. M., O'Hara, M. W., & Watson, D. (2012). The structure of women's mood in the early postpartum. *Assessment*, *19*(2), 247-256. doi: 10.1177/1073191111429388

- Castle, H., Slade, P., Barranco-Wadlow, M., & Rogers, M. (2008). Attitudes to emotional expression, social support and postnatal adjustment in new parents. *Journal of Reproductive and Infant Psychology, 26*(3), 180-194. doi: 10.1080/02646830701691319
- Chapman, S. L. C., & Wu, L. (2013). Postpartum substance use and depressive symptoms: A review. *Women & Health, 53*(5), 479-503. doi:10.1080/03630242.2013.804025
- Chaudron, L.H., Klein, M.H., Remington, P., Palta, M., Allen, C., & Essex, M.J. (2001). Predictors, prodromes and incidence of postpartum depression. *Journal of Psychosomatic Obstetrics & Gynaecology, 22*(2),103-112. doi: 10.3109/01674820109049960
- Chen, A., & Rogan, W.J. (2004). Breastfeeding and the risk of postneonatal death in the United States. *Pediatrics, 113*(5), e435-e439. Retrieved from <http://pediatrics.aappublications.org/content/113/5/e435.full.pdf+html>
- Chung, E.K., McCollum, K.F., Elo, I.T., Lee, H.J., & Culhane, J.F. (2004). Maternal depressive symptoms and infant health practices among low-income women. *Pediatrics, 113*(6), e523-e529. Retrieved from <http://pediatrics.aappublications.org/content/113/6/e523.full.pdf+html>
- Colman, I., Naicker, K., Zeng, Y., Ataullahjan, A., Senthilselvan, A., & Patten, S. B. (2011). Predictors of long-term prognosis of depression. *CMAJ: Canadian Medical Association Journal, 183*(17), 1969–1976. doi:10.1503/cmaj.110676
- Clifford, T.J., Campbell, M.K., Speechley, K.N., & Gorodzinsky, F. (2006). Factors influencing full breastfeeding in a southwestern Ontario community: Assessments at 1 week and at 6 months postpartum. *Journal of Human Lactation, 22*(3), 292-304. doi: 10.1177/0890334406290043

- Cooper, P. J., Murray, L., & Stein, A. (1993). Psychosocial factors associated with the early termination of breast-feeding. *Journal of Psychosomatic Research*, *37*(2), 171-176. doi: 10.1016/0022-3999(93)90084-S
- Cox, J.L., Connor, Y., & Kendell, R.E. (1982). Prospective study of the psychiatric disorders of childbirth. *British Journal of Psychiatry*, *140*, 111-117. doi: 10.1192/bjp.140.2.111
- Cox, J.L., Holden, J.M., & Sagovsky, R. (1987). Detection of postnatal depression: Development of the 10-item Edinburgh Postnatal Depression Scale. *British Journal of Psychiatry*, *150*, 782-786. doi: 10.1192/bjp.150.6.782
- Csatornai, S., Kozinszky, Z., Devosa, I., Tóth, É., Krajcsi, A., Sefcsik, T., & Pál, A. (2007). Obstetric and sociodemographic risk of vulnerability to postnatal depression. *Patient Education and Counseling*, *67*(1-2), 84-92. doi: 10.1016/j.pec.2007.02.004
- Dagher, R. K., & Shenassa, E. D. (2012). Prenatal health behaviors and postpartum depression: is there an association?. *Archives of Women's Mental Health*, *15*(1), 31-37. doi: 10.1007/s00737-011-0252-0
- Dai, X., & Dennis, C.L. (2003). Translation and validation of the Breastfeeding Self-Efficacy Scale into Chinese. *Journal of Midwifery Women's Health*, *48*(5), 350-356. doi: 10.1016/S1526-9523(03)00283-6
- Davey, H.L., Tough, S.C., Adair, C.E., & Benzies, K.M. (2011). Risk factors for sub-clinical and major postpartum depression among a community cohort of Canadian women. *Maternal and Child Health Journal*, *15*(7):866-875. doi: 10.1007/s10995-008-0314-8.
- Dennis, C.L. (2003). The breastfeeding self-efficacy scale: Psychometric assessment of the short form. *Journal of Obstetric, Gynecologic, & Neonatal Nursing*, *32*(6), 734-744. doi: 10.1177/0884217503258459

Dennis, C. (2004). Can we identify mothers at risk for postpartum depression in the immediate postpartum period using the Edinburgh Postnatal Depression Scale? *Journal of Affective Disorders, 78*(2), 163-169. doi: 10.1016/S0165-0327(02)00299-9

Dennis, C., & McQueen, K. (2007). Does maternal postpartum depressive symptomatology influence infant feeding outcomes? *Acta Paediatrica, 96*(4), 590-594. doi: 10.1111/j.1651-2227.2007.00184.x

Dennis, C., & McQueen, K. (2009). The relationship between infant-feeding outcomes and postpartum depression: A qualitative systematic review. *Pediatrics, 123*(4), e736-e751. doi: 10.1542/peds.2008-1629

Di Florio, A., Jones, L., Forty, L., Gordon-Smith, K., Robertson Blackmore, E., Heron, J., . . . Jones, I. (2014). Mood disorders and parity – A clue to the aetiology of the postpartum trigger. *Journal of Affective Disorders, 152-154*(6), 334-339. doi:10.1016/j.jad.2013.09.034

do Carmo França-Botelho, A., Ferreira, M.C., França, J.L., França, E.L., & Honório-França, A.C. (2012). Breastfeeding and its relationship with reduction of breast cancer: A review. *Asian Pacific Journal of Cancer Prevention, 13*(11), 5327-5332. doi: 10.7314/APJCP.2012.13.11.5327

Doan, T., Gardiner, A., Gay, C.L., & Lee, K.A. (2007). Breast-feeding increases sleep duration of new parents. *Journal of Perinatal and Neonatal Nursing, 21*(3), 200-206. doi: 10.1097/01.JPN.0000285809.36398

Duijts, L., Ramadhani, M.K., & Moll, H.A. (2009). Breastfeeding protects against infectious diseases during infancy in industrialized countries. A systematic review. *Maternal and Child Nutrition, 5*(3), 199-210. doi: 10.1111/j.1740-8709.2008.00176.x.

- Dunn, S., Davies, B., McCleary, L., Edwards, N., & Gaboury, I. (2006). The relationship between vulnerability factors and breastfeeding outcome. *Journal of Obstetric, Gynecologic, & Neonatal Nursing: Clinical Scholarship for the Care of Women, Childbearing Families, & Newborns*, 35(1), 87-97. doi: 10.1111/j.1552-6909.2006.00005.x
- Edhborg, M., Matthiesen, A.S., Lundh, W., & Widström, A.M. (2005). Some early indicators for depressive symptoms and bonding 2 months postpartum--a study of new mothers and fathers. *Archives of Women's Mental Health*, 8(4), 221-231. doi: 10.1007/s00737-005-0097-5
- Elisei, S., Lucarini, E., Murgia, N., Ferranti, L., & Attademo, L. (2013). Perinatal Depression: A study of prevalence and of risk and protective factors. *Psychiatria Danubina*, 25, 258-262. Retrieved from http://www.hdbp.org/psychiatria_danubina/pdf/dnb_vol25_sup2/dnb_vol25_sup2_258.pdf
- Fairlie, T. G., Gillman, M. W., & Rich-Edwards, J. (2009). High pregnancy-related anxiety and prenatal depressive symptoms as predictors of intention to breastfeed and breastfeeding initiation. *Journal of Women's Health*, 18(7), 945-953. doi: 10.1089/jwh.2008.0998
- Falceto, O.G., Giugliani, E.R., & Fernandes, C.L. (2004). Influence of parental mental health on early termination of breast-feeding: A case-control study. *The Journal of the American Board of Family Medicine*, 17(3), 173-183. doi: 10.3122/jabfm.17.3.173
- Ferguson, S. S., Jamieson, D. J., & Lindsay, M. (2002). Diagnosing postpartum depression: Can we do better? *American Journal of Obstetrics & Gynecology*, 186(5), 899-902. doi: 10.1067/mob.2002.123404

- Field, T. (2010). Postpartum depression effects on early interactions, parenting, and safety practices: A review. *Infant Behavior & Development*, 33(1), 1-6. doi: 10.1016/j.infbeh.2009.10.005
- Field, T., Diego, M., Hernandez-Reif, M., Figueiredo, B., Ezell, S., & Siblalingappa, V. (2010). Depressed mothers and infants are more relaxed during breastfeeding versus bottle feeding interactions: Brief report. *Infant Behavior and Development*, 33(2):241-4. doi: 10.1016/j.infbeh.2009.12.006
- Figueiredo, B., Canário, C., & Field, T. (2013). Breastfeeding is negatively affected by prenatal depression and reduces postpartum depression. *Psychological Medicine*, 3, 1-10. doi: 10.1017/S0033291713001530
- Figueiredo, B., Dias, C. C., Brandão, S., Canário, C., & Nunes-Costa, R. (2013). Breastfeeding and postpartum depression: State of the art review. *Jornal de Pediatria*, 89(4), 332-338. doi: 10.1016/j.jpdp.2012.12.004
- Flores-Quijano, M.E., Córdova, A., Contreras-Ramírez, V., Farias-Hernández, L., Cruz Tolentino, M., & Casanueva, E. (2008). Risk for postpartum depression, breastfeeding practices, and mammary gland permeability. *Journal of Human Lactation*, 24(1), 50-57. doi: 10.1177/0890334407310587.
- Freeman, M.P., Smith, K.W., Freeman, S.A., McElroy, S.L., Kmetz, G.E., Wright, R., & Keck, P.E. Jr. (2002). The impact of reproductive events on the course of bipolar disorder in women. *Journal of Clinical Psychiatry*, 63(4), 284-287.
- Galler, J. R., Harrison, R. H., Biggs, M. A., Ramsey, F., & Forde, V. (1999). Maternal moods predict breastfeeding in Barbados. *Journal of Developmental and Behavioral Pediatrics*, 20(2), 80-87.

- Galler, J.R., Harrison, R.H., Ramsey, F., Chawla, S., & Taylor, J. (2006). Postpartum feeding attitudes, maternal depression, and breastfeeding in Barbados. *Infant Behavior and Development, 29*(2), 189-203. doi: 10.1016/j.infbeh.2005.10.005
- Ganjekar, S., Desai, G., & Chandra, P. S. (2013). A comparative study of psychopathology, symptom severity, and short-term outcome of postpartum and nonpostpartum mania. *Bipolar Disorders, 15*(6), 713-718. doi: 10.1111/bdi.12076
- Giallo, R., Cooklin, A., & Nicholson, J. (2014). Risk factors associated with trajectories of mothers' depressive symptoms across the early parenting period: An Australian population-based longitudinal study. *Archives of Women's Mental Health, 17*(2), 115-125. doi:10.1007/s00737-014-0411-1
- Government of Canada. (2015). Sponsorship of Adopted Children and other Relatives — The Sponsor's Guide. Retrieved January 21, 2015 from <http://www.cic.gc.ca/english/information/applications/guides/5196ETOC.asp#table3>
- Green, K., Broome, H., & Mirabella, J. (2006). Postnatal depression among mothers in the United Arab Emirates: Socio-cultural and physical factors. *Psychology, Health & Medicine, 11*(4), 425-431. doi: 10.1080/13548500600678164
- Groër, M.W. (2005). Differences between exclusive breastfeeders, formula-feeders, and controls: A study of stress, mood, and endocrine variables. *Biological Research for Nursing, 7*(2):106-117. doi: 10.1177/1099800405280936
- Groër, M.W., & Morgan, K. (2007). Immune, health and endocrine characteristics of depressed postpartum mothers. *Psychoneuroendocrinology, 32*(2):133-139. doi: 10.1016/j.psyneuen.2006.11.007

- Gross, K.H., Wells, C.S., Radigan-Garcia, A., & Dietz, P.M. (2002). Correlates of self-reports of being very depressed in the months after delivery: Results from the Pregnancy Risk Assessment Monitoring System. *Maternal and Child Health Journal*, 6(4):247-53. doi: 10.1023/A:1021110100339
- Hahn-Holbrook, J., Haselton, M.G., Dunkel Schetter, C., & Glynn, L.M. (2013). Does breastfeeding offer protection against maternal depressive symptomatology?: A prospective study from pregnancy to 2 years after birth. *Archives of Women's Mental Health*, 16(5), 411-422. doi: 10.1007/s00737-013-0348-9
- Hackshaw, A. (2008). Small studies: Strengths and limitations. *European Respiratory Journal*, 32 (5), 1141-1143. doi: 10.1183/09031936.00136408.
- Hannah, P., Adams, D., Lee, A., Glover, V., & Sandler, M. (1992). Links between early postpartum mood and post-natal depression. *The British Journal of Psychiatry*, 160, 777-780. doi: 10.1192/bjp.160.6.777
- Harris, B., Huckle, P., Thomas, R., Johns, S., & Fung, H. (1989). The use of rating scales to identify post-natal depression. *The British Journal of Psychiatry*, 154, 813-817. doi: 10.1192/bjp.154.6.813
- Hatton, D.C., Harrison-Hohner, J., Coste, S., Dorato, V., Curet, L.B., & McCarron, D.A. (2005). Symptoms of postpartum depression and breastfeeding. *Journal of Human Lactation*, 21(4), 444-449. doi 10.1177/0890334405280947
- Health Canada. (2013). *Infant Feeding*. Retrieved November 2, 2013 from <http://www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/index-eng.php>.

- Hamdan, A., & Tamim, H. (2012). The relationship between postpartum depression and breastfeeding. *International Journal of Psychiatry in Medicine, 43*(3), 243-259. doi: 10.2190/PM.43.3.d
- Henderson, J. J., Evans, S. F., Straton, J. A. Y., Priest, S. R., & Hagan, R. (2003). Impact of postnatal depression on breastfeeding duration. *Birth: Issues in Perinatal Care, 30*(3), 175-180. doi: 10.1046/j.1523-536X.2003.00242.x
- Hendrick, V., Altshuler, L., Strouse, T., & Grosser, S. (2000). Postpartum and nonpostpartum depression: Differences in presentation and response to pharmacologic treatment. *Depression and Anxiety, 11*, 66-72. doi: 10.1002/(SICI)1520-6394(2000)11:2<66::AID-DA3>3.0.CO;2-D
- Heron, J., Haque, S., Oyeboode, F., Craddock, N., & Jones, I. (2009). A longitudinal study of hypomania and depression symptoms in pregnancy and the postpartum period. *Bipolar Disorders, 11*(4), 410 -417. doi: 10.1111/j.1399-5618.2009.00685.x
- Horowitz, J.A., & Goodman, J. (2004). A longitudinal study of maternal postpartum depression symptoms. *Research and Theory for Nursing Practice, 18*(2-3), 149-163. doi: 10.1891/rtnp.18.2.149.61285
- Horowitz, J. A., Murphy, C. A., Gregory, K. E., & Wojcik, J. (2011). A community based screening initiative to identify mothers at risk for postpartum depression. *Journal of Obstetric, Gynecologic, & Neonatal Nursing: Clinical Scholarship for the Care of Women, Childbearing Families, & Newborns, 40*(1), 52-61. doi: 10.1111/j.1552-6909.2010.01199.x

- Howell, E. A., Mora, P. A., Horowitz, C. R., & Leventhal, H. (2005). Racial and ethnic differences in factors associated with early postpartum depressive symptoms. *Obstetrics & Gynecology, 105*(6), 1442-1450. doi: 10.1097/01.AOG.0000164050.34126.37
- Insaf, T. Z., Fortner, R. T., Pekow, P., Dole, N., Markenson, G., & Chasan-Taber, L. (2011). Prenatal stress, anxiety and depressive symptoms as predictors of intention to breastfeed among Hispanic women. *Journal of Women's Health, 20*(8), 1183-1192. doi: 10.1089/jwh.2010.2276
- Jacobson, S.W., Jacobson, J.L., & Frye, K.F. (1991). Incidence and correlates of breast-feeding in socioeconomically disadvantaged women. *Pediatrics, 88*(4), 728-736.
- Jardri, R., Pelta, J., Maron, M., Thomas, P., Delion, P., Codaccioni, X., & Goudemand, M. (2006). Predictive validation study of the Edinburgh Postnatal Depression Scale in the first week after delivery and risk analysis for postnatal depression. *Journal of Affective Disorders, 93*(1-3), 169-176. doi: 10.1016/j.jad.2006.03.009
- Jennings, K. D., Ross, S., Popper, S., & Elmore, M. (1999). Thoughts of harming infants in depressed and nondepressed mothers. *Journal of Affective Disorders, 54*(1-2), 21-28. doi: 10.1016/S0165-0327(98)00185-2
- Jesse, D. E., Walcott-McQuigg, J., Mariella, A., & Swanson, M. S. (2005). Risks and protective factors associated with symptoms of depression in low-income African American and Caucasian women during pregnancy. *Journal of Midwifery & Women's Health, 50*(5), 405-410. doi: 10.1016/j.jmwh.2005.05.001
- Josefsson, A., Angelsiö, L., Berg, G., Ekström, C.M, Gunnervik, C., Nordin, C., & Sydsjö, G. (2002). Obstetric, somatic, and demographic risk factors for postpartum depressive symptoms. *Obstetrics & Gynecology, 99*(2), 223-228.

- Kendall-Tackett, K., Cong, Z., & Hale, T.W. (2013). Depression, sleep quality, and maternal well-being in postpartum women with a history of sexual assault: A comparison of breastfeeding, mixed-feeding, and formula-feeding mothers. *Breastfeeding Medicine*, 8(1), 16-22. doi: 10.1089/bfm.2012.0024
- Korhonen, M., Luoma, I., Salmelin, R., & Tamminen, T. (2012). A longitudinal study of maternal prenatal, postnatal and concurrent depressive symptoms and adolescent well-being. *Journal of Affective Disorders*, 136(3), 680-692. doi: 10.1016/j.jad.2011.10.007
- Lane, A., Keville, R., Morris, M., Kinsella, A., Turner, M., & Barry, S. (1997). Postnatal depression and elation among mothers and their partners: Prevalence and predictors. *The British Journal of Psychiatry*, 171, 550-555. doi: 10.1192/bjp.171.6.550
- Lau Y, & Chan KS. (2007). Influence of intimate partner violence during pregnancy and early postpartum depressive symptoms on breastfeeding among Chinese women in Hong Kong. *Journal of Midwifery Women's Health*, 52(2), e15-e20. doi: 10.1016/j.jmwh.2006.09.001
- Leahy-Warren, P., McCarthy, G., & Corcoran, P. (2012). First-time mothers: Social support, maternal parental self-efficacy and postnatal depression. *Journal of Clinical Nursing*, 21(3-4), 388-397. doi:10.1111/j.1365-2702.2011.03701.x
- Lee, H. J., Rubio, M. R., Elo, I. T., McCollum, K. F., Chung, E. K., & Culhane, J. F. (2005). Factors associated with intention to breastfeed among low-income, inner-city pregnant women. *Maternal and Child Health Journal*, 9(3), 253-261. doi: 10.1007/s10995-005-0008-5

- Lindahl, V., Pearson, J. L., & Colpe, L. (2005). Prevalence of suicidality during pregnancy and the postpartum. *Archives of Women's Mental Health*, 8(2), 77-87. doi: 10.1007/s00737-005-0080-1
- López-Zurbano, S., González-Pinto, A., & López, P. (2015). Gender Differences in Bipolar Disorder. In M. Sáenz-Herrero (Ed.) *Psychopathology in Women*. Springer International Publishing. New York. pp. 641-659.
- Luan, N.N., Wu, Q.J., Gong, T.T., Vogtmann, E., Wang, Y.L., & Lin, B. (2013). Breastfeeding and ovarian cancer risk: A meta-analysis of epidemiologic studies. *American Journal of Clinical Nutrition*, 98(4), 1020-1031. doi: 10.3945/ajcn.113.062794
- Mancini, F., Carlson, C., & Albers, L. J (2007). Use of the Postpartum Depression Screening Scale in a collaborative obstetric practice. *Midwifery Women's Health*, 52(5), 429-434. doi: 10.1016/j.jmwh.2007.03.007
- Matthiesen, A.S., Ransjö-Arvidson, A.B., Nissen, E., & Uvnäs-Moberg, K. (2001). Postpartum maternal oxytocin release by newborns: Effects of infant hand massage and sucking. *Birth*, 28(1), 13-19. doi: 10.1046/j.1523-536x.2001.00013.x
- Mayberry, L. J., Horowitz, J. A., & Declercq, E. (2007). Depression symptom prevalence and demographic risk factors among U.S. women during the first 2 years postpartum. *Journal of Obstetric, Gynecologic, & Neonatal Nursing: Clinical Scholarship for the Care of Women, Childbearing Families, & Newborns*, 36(6), 542-549. doi:10.1111/j.1552-6909.2007.00191.x
- McCarter-Spaulding, D., & Horowitz, J. A. (2007). How does postpartum depression affect breastfeeding? *MCN: The American Journal of Maternal/Child Nursing*, 32(1), 10-17. doi: 10.1097/00005721-200701000-00004

- McKee, M. D., Zayas, L. H., & Jankowski, K. R. B. (2004). Breastfeeding intention and practice in an urban minority population: Relationship to maternal depressive symptoms and mother-infant closeness. *Journal of Reproductive and Infant Psychology, 22*(3), 167-181. doi: 10.1080/02646830410001723751
- McLearn, K.T., Minkovitz, C.S., Strobino, D.M., Marks, E., & Hou, W. (2006). Maternal depressive symptoms at 2 to 4 months postpartum and early parenting practices. *Archives of Pediatrics and Adolescent Medicine, 160*(3), 279-284. doi: 10.1001/archpedi.160.3.279.
- Meltzer-Brody, S., Boschloo, L., Jones, I., Sullivan, P.F., & Penninx, B.W. (2013). The EPDS-Lifetime: Assessment of lifetime prevalence and risk factors for perinatal depression in a large cohort of depressed women. *Archives of Women's Mental Health, 16*(6), 465-473. doi: 10.1007/s00737-013-0372-9.
- Mezzacappa, E.S., & Katlin, E.S. (2002). Breast-feeding is associated with reduced perceived stress and negative mood in mothers. *Health Psychology, 21*(2), 187-193. doi: 10.1037/0278-6133.21.2.187
- Miranda, A. M., Soares, C. N., Moraes, M. L., Fossaluzza, V., Serafim, P. M., & Mello, M. F. (2012). Healthy maternal bonding as a resilience factor for depressive disorder. *Psychology & Neuroscience, 5*(1), 21-25. doi: 10.3922/j.psns.2012.1.04
- Misri, S., Sinclair, D. A., & Kuan, A. J. (1997). Breast-feeding and postpartum depression: Is there a relationship? *The Canadian Journal of Psychiatry / La Revue Canadienne De Psychiatrie, 42*(10), 1061-1065.
- Moehler, E., Brunner, R., Wiebel, A., Reck, C., & Resch, F. (2006). Maternal depressive symptoms in the postnatal period are associated with long-term impairment of mother-

child bonding. *Archives of Women's Mental Health*, 9(5), 273-278. doi: 10.1007/s00737-006-0149-5

Morgan, V. A., Croft, M. L., Valuri, G. M., Zubrick, S. R., Bower, C., McNeil, T. F., & Jablensky, A. V. (2012). Intellectual disability and other neuropsychiatric outcomes in high-risk children of mothers with schizophrenia, bipolar disorder and unipolar major depression. *The British Journal of Psychiatry*, 200(4), 282-289. doi: 10.1192/bjp.bp.111.093070

Murray, L., & Carothers, A. D. (1990). The validation of the Edinburgh Post-Natal Depression Scale on a community sample. *The British Journal of Psychiatry*, 157, 288-290. doi: 10.1192/bjp.157.2.288

Murphy, K. R., & Davidshofer, C. O. (2005). *Psychological Testing: Principles and Applications* (6th ed.). Pearson, New Jersey. pp. 197.

Nishioka, E., Haruna, M., Ota, E., Matsuzaki, M., Murayama, R., Yoshimura, K., & Murashima, S. (2011). A prospective study of the relationship between breastfeeding and postpartum depressive symptoms appearing at 1-5 months after delivery. *Journal of Affective Disorders*, 133(3), 553-559. doi: 10.1016/j.jad.2011.04.027.

Nielsen Forman, D., Videbech, P., Hedegaard, M., Dalby, J., & Secher, N. J. (2000). Postpartum depression: Identification of women at risk. *BJOG: An International Journal of Obstetrics & Gynaecology*, 107(10), 1210-1217. doi: 10.1111/j.1471-0528.2000.tb11609.x

Niers, L., Stasse-Wolthuis, M., Rombouts, F.M., Rijkers, G.T. (2007). Nutritional support for the infant's immune system. *Nutrition Reviews*, 65(8 Pt 1), 347-360. doi: 10.1111/j.1753-4887.2007.tb00313.x

- O'Brien, M., Buikstra, E., & Hegney, D. (2008). The influence of psychological factors on breastfeeding duration. *Journal of Advanced Nursing*, 63(4), 397-408. doi: 10.1111/j.1365-2648.2008.04722x
- O'Hara, M.W., Schlechte, J.A., Lewis, D.A., & Wright, E.J. (1991). Prospective study of postpartum blues. Biologic and psychosocial factors. *Archives of General Psychiatry*, 48(9), 801-806. doi: 10.1001/archpsyc.1991.01810330025004
- O'Hara, M.W., & McCabe, J.E. (2013). Postpartum depression: Current status and future directions. *Annual Review of Clinical Psychology*, 9, 379-407. doi: 10.1146/annurev-clinpsy-050212-185612
- O'Neill, T., Murphy, P., & Greene, V.T. (1990). Postnatal depression--aetiological factors. *Irish Medical Journal*, 83(1), 17-18. Retrieved from <http://www.imj.ie/Archive/Postnatal%20depression.pdf>
- Papinczak, T.A., & Turner, C.T. (2000). An analysis of personal and social factors influencing initiation and duration of breastfeeding in a large Queensland maternity hospital. *Breastfeeding Review*, 8(1), 25-33.
- Pearlstein, T., Howard, M., Salisbury, A., & Zlotnick, C. (2009). Postpartum depression. *American Journal of Obstetrics & Gynecology*, 200(4), 357-364. doi: 10.1016/j.ajog.2008.11.033.
- Pippins, J.R., Brawarsky, P., Jackson, R.A., Fuentes-Afflick, E., & Haas, J.S. (2006). Association of breastfeeding with maternal depressive symptoms. *Journal of Women's Health (Larchmt)*, 15(6), 754-762. doi: 10.1089/jwh.2006.15.754.

- Pope, C.J., Oinonen, K.A, Mazmanian, D., & Stone, S. (2015). The Hormonal Sensitivity Hypothesis in Women: Data from Across the Lifespan. Manuscript submitted for publication.
- Pope, C.J., Sharma, V, & Mazmanian, D. (2014a). Recognition, diagnosis, and treatment of postpartum bipolar depression. *Expert Review of Neurotherapeutics*, 14(1), 19-28. doi:10.1586/14737175.2014.846219
- Pope, C.J., Sharma, V., & Mazmanian, D. (2014b). Bipolar disorder in the postpartum period: Management strategies and future directions. *Women's Health*, 10(4), 359-371. doi: 10.2217/whe.14.33.
- Pope, C.J., Xie, B., Sharma, V., & Campbell, M.K. (2013). A prospective study of thoughts of self-harm and suicidal ideation during the postpartum period in women with mood disorders. *Archives of Women's Mental Health*, 16(6), 483-488. doi: 10.1007/s00737-013-0370-y
- Preacher, K.J., Rucker, D.D., MacCallum, R.C., & Nicewander, W.A. (2005). Use of the Extreme Groups Approach: A Critical Reexamination and New Recommendations. *Psychological Methods*, 10(2), 178-192. doi: 0.1037/1082-989X.10.2.178
- Public Health Agency of Canada. (2009). *What Mothers Say: The Canadian Maternity Experiences Survey*. Retrieved October 6, 2013 from <http://www.phac-aspc.gc.ca/rhs-ssg/survey-eng.php>
- Ramsay, M., Gisel, E. G., McCusker, J., Bellavance, F., & Platt, R. (2002). Infant sucking ability, non-organic failure to thrive, maternal characteristics, and feeding practices: A prospective cohort study. *Developmental Medicine & Child Neurology*, 44(6), 405-414. doi: 10.1017/S0012162201002286

- Riskin, A., Almog, M., Peri, R., Halasz, K., Srugo, I., & Kessel, A. (2012). Changes in immunomodulatory constituents of human milk in response to active infection in the nursing infant. *Pediatric Research*, *71*(2), 220-225. doi: 10.1038/pr.2011.34.
- Robinson, S., & Fall, C. (2012). Infant nutrition and later health: A review of the current evidence. *Nutrients*, *4*, 859-874. doi: 10.3390/nu4080859
- Robertson, E., Jones, I., Haque, S., Holder, R., & Craddock, N. (2005). Risk of puerperal and non-puerperal recurrence of illness following bipolar affective puerperal (post-partum) psychosis. *The British Journal of Psychiatry*, *186*(3), 258-259. doi: 10.1192/bjp.186.3.258
- Ross, L. E., Campbell, V. L. S., Dennis, C., & Blackmore, E. R. (2006). Demographic characteristics of participants in studies of risk factors, prevention, and treatment of postpartum depression. *The Canadian Journal of Psychiatry*, *51*(11), 704-710. Retrieved from:
<http://eds.b.ebscohost.com.ezproxy.lakeheadu.ca/ehost/pdfviewer/pdfviewer?sid=d9fcb749-b39e-4063-8eeb-c479ad97efdf%40sessionmgr110&vid=1&hid=112>
- Russell, E., Fawcett, J., & Mazmanian, D. (2013). Risk of obsessive-compulsive disorder in pregnant and postpartum women: A meta-analysis. *Journal of Clinical Psychiatry*, *74*(4), 377-385. doi: 10.4088/JCP.12r07917
- Seimyr, L., Edhborg, M., Lundh, W., & Sjögren, B.J. (2004). In the shadow of maternal depressed mood: Experiences of parenthood during the first year after childbirth. *Journal of Psychosomatic Obstetrics & Gynaecology*, *25*(1), 23-34. doi: 10.1080/01674820410001737414

- Segre, L. S., O'Hara, M. W., Arndt, S., & Stuart, S. (2007). The prevalence of postpartum depression. *Social Psychiatry and Psychiatric Epidemiology*, 42(4), 316-321. doi: 10.1007/s00127-007-0168-1
- Seto, M., Cornelius, M. D., Goldschmidt, L., Morimoto, K., & Day, N. L. (2005). Long-term effects of chronic depressive symptoms among low-income childrearing mothers. *Maternal and Child Health Journal*, 9(3), 263-271. doi:10.1007/s10995-005-0002-x
- Sharma, V., & Mazmanian, D. (2014). The DSM-5 peripartum specifier: Prospects and pitfalls. *Archives of Women's Mental Health*.17(2), 171-173. doi: 10.1007/s00737-013-0406-3
- Skalkidou, A., Hellgren, C., Comasco, E., Sylvén, S., & Sundström Poromaa I. (2012). Biological aspects of postpartum depression. *Women's Health (Lond Engl)*. 8(6), 659-672. doi: 10.2217/whe.12.55
- Spinelli, M. G. (2004). Maternal infanticide associated with mental illness: Prevention and the promise of saved lives. *The American Journal of Psychiatry*, 161(9), 1548-1557. doi: 10.1176/appi.ajp.161.9.1548
- Streiner, D. L. (2002). Breaking up is hard to do: The heartbreak of dichotomizing continuous data. *Canadian Journal of Psychiatry*, 47(3), 262-265. Retrieved from: <http://ww1.cpa-apc.org:8080/Publications/Archives/CJP/2002/april/researchMethodsDichotomizingData2.asp>
- Streiner, D. L. (2003). Unicorns do exist: a tutorial on "proving" the null hypothesis. *Canadian Journal of Psychiatry*, 48(11), 756-761. Retrieved from: <http://eds.a.ebscohost.com.ezproxy.lakeheadu.ca/ehost/detail/detail?sid=5baf56fd-2fc0-45af-aeb4-65cd53a81609%40sessionmgr4004&vid=0&hid=4102&bdata=JnNpdGU9ZWhvc3QtbGl2ZQ%3d%3d#db=aph&AN=11833756>

- Surkan, P. J., Peterson, K. E., Hughes, M. D., & Gottlieb, B. R. (2006). The role of social networks and support in postpartum women's depression: A multiethnic urban sample. *Maternal and Child Health Journal, 10*(4), 375-383. doi:10.1007/s10995-005-0056-9
- Tabachnick, B.G., Fidell, L.S., 2014. Using Multivariate Statistics (6th international ed.). Pearson, London. pp. 500,506.
- Tamminen T. (1988). The impact of mother's depression on her nursing experiences and attitudes during breastfeeding. *Acta Paediatrica Scandinavica, Suppl. 344*, 87-94. doi: 10.1111/j.1651-2227.1988.tb10864.x
- Tammentie, T., Tarkka, M., Åstedt-Kurki, P., & Paavilainen, E. (2002). Sociodemographic factors of families related to postnatal depressive symptoms of mothers. *International Journal of Nursing Practice, 8*(5), 240-246. doi: 10.1046/j.1440-172X.2002.00373.x
- Tashakori, A., Behbahani, A.Z., & Irani, R.D. (2012). Comparison of prevalence of postpartum depression symptoms between breastfeeding mothers and non-breastfeeding mothers. *Iran Journal of Psychiatry, 7*(2), 61-65. Retrieved from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3428639/>
- Taveras, E.M., Capra, A.M., Braveman, P.A., Jensvold, N.G., Escobar, G.J., & Lieu, T.A. (2003). Clinician support and psychosocial risk factors associated with breastfeeding discontinuation. *Pediatrics, 112*(1 Pt 1), 108-115.
- Tsvetov, G., Levy, S., Benbassat, C., Shraga-Slutzky, I., & Hirsch D. (2013). Influence of number of deliveries and total breast-feeding time on bone mineral density in premenopausal and young postmenopausal women. *Maturitas*. Advanced online publication. doi: 10.1016/j.maturitas.2013.11.003

- Thome, M., Alder, E.M., & Ramel, A. (2006). A population-based study of exclusive breastfeeding in Icelandic women: Is there a relationship with depressive symptoms and parenting stress? *International Journal of Nursing Studies*, 43(1), 11-20. doi: 10.1016/j.ijnurstu.2004.10.009
- Tu, M.T., Lupien, S.J., & Walker, C.D. (2006). Diurnal salivary cortisol levels in postpartum mothers as a function of infant feeding choice and parity. *Psychoneuroendocrinology*, 31(7), 812-824. doi: 10.1016/j.psyneuen.2006.03.006
- Tuohy, A., & McVey, C. (2008). Subscales measuring symptoms of non-specific depression, anhedonia, and anxiety in the Edinburgh Postnatal Depression Scale. *British Journal of Clinical Psychology*, 47(2), 153-169. doi: 10.1348/014466507X238608
- Viero, C., Shibuya, I., Kitamura, N., Verkhatsky, A., Fujihara, H., Katoh, A., ... & Dayanithi, G. (2010). Oxytocin: Crossing the bridge between basic science and pharmacotherapy. *CNS Neuroscience & Therapeutics*, 16(5), e138-e156. doi: 10.1111/j.1755-5949.2010.00185.x
- Vliegen, N., Casalin, S., & Luyten, P. (2014). The course of postpartum depression: A review of longitudinal studies. *Harvard Review of Psychiatry*, 22(1), 1-22. doi: 10.1097/HRP.000000000000013
- Walfisch, A., Sermer, C., Cressman, A., Koren, G. (2013). Breast milk and cognitive development--the role of confounders: A systematic review. *British Medical Journal*, 3(8), e003259. doi: 10.1136/bmjopen-2013-003259.
- Warner, R., Appleby, L., Whitton, A., & Faragher, B. (1996). Demographic and obstetric risk factors for postnatal psychiatric morbidity. *The British Journal of Psychiatry*, 168(5), 607-611. doi: 10.1192/bjp.168.5.607

- Watkins, S., Meltzer-Brody, S., Zolnoun, D., & Stuebe, A. (2011). Early breastfeeding experiences and postpartum depression. *Obstetrics & Gynecology, 118*(2 Pt 1), 214-221. doi: 10.1097/AOG.0b013e3182260a2d.
- Wisner, K. L., Sit, D. K. Y., McShea, M. C., Rizzo, D. M., Zoretich, R. A., Hughes, C. L., . . . Hanusa, B. H. (2013). Onset timing, thoughts of self-harm, and diagnoses in postpartum women with screen-positive depression findings. *JAMA Psychiatry, 70*(5), 490-498. doi: 10.1001/jamapsychiatry.2013.87
- World Health Organization. (n.d.). *The ICD-10 Classification of Mental and Behavioural Disorders*. Retrieved January 25, 2014 from <http://www.who.int/classifications/icd/en/>
- Yonkers, K. A., Ram in, S. M., Rush, A. J., Navarrete, C. A., Carmody, T., March, D., . . . Leveno, K. J. (2001). Onset and persistence of postpartum depression in an inner-city maternal health clinic system. *The American Journal of Psychiatry, 158*(11), 1856-1863. doi: 10.1176/appi.ajp.158.11.1856
- Youash, S., Campbell, K., Avison, W., Peneva, D., Sharma, V., & Xie, B. (2013). Influence of health information levels on postpartum depression. *Archives of Women's Mental Health, 16*(6), 489-498. doi: 10.1007/s00737-013-0368-5
- Ystrom, E. (2012). Breastfeeding cessation and symptoms of anxiety and depression: A longitudinal cohort study. *BMC Pregnancy and Childbirth, 12*, 36 - 41. doi: 10.1186/1471-2393-12-36

Appendix 1

Canadian Maternity Experience Survey

A Statistics Canada User Guide document for the
Canadian Maternity Experience Survey

Retrieved from: http://www23.statcan.gc.ca/imdb/p3Instr.pl?Function=getInstrumentList&Item_Id=34371&UL=1V&



Public Health
Agency of Canada

Agence de la sante
publique du Canada

What Mothers Say: The Canadian Maternity Experiences Survey

Canada

To promote and protect the health of Canadians through leadership, partnership, innovation and action in public health.
— Public Health Agency of Canada

What Mothers Say: The Canadian Maternity Experiences Survey
is available on Internet at the following address:
<http://www.publichealth.gc.ca/mes>

Également disponible en français sous le titre :
Ce que disent les mères : l'Enquête canadienne sur l'expérience de la maternité

To obtain additional copies, please contact:
Maternal and Infant Health Section
Health Surveillance and Epidemiology Division
Centre for Health Promotion
Health Promotion and Chronic Disease Prevention Branch
200 Eglantine Driveway, Tunney's Pasture
Jeanne Mance Building, 10th Floor, A.L. 1910D
Ottawa, Ontario K1A 0K9
Tel.: (613) 941-2395
Fax: (613) 941-9927
E-Mail: mes@phac-aspc.gc.ca

This publication can be made available in alternative formats upon request.

Suggested Citation:
Public Health Agency of Canada. What Mothers Say: The Canadian Maternity Experiences Survey. Ottawa, 2009.

© Her Majesty the Queen in Right of Canada, 2009
Cat.: HP5-74/2-2009E-PDF
ISBN: 978-1-100-10828-5

Maternity Experiences Survey, 2006
Questionnaire

Section: Survey introduction (IS)

INT_BEG Beginning of Section

INT_R01 This survey will collect information on the maternity experiences of women in Canada. Results from the survey will be used to help improve the health care information available to women during this time of their lives.

INT_R02 Your answers will be kept strictly confidential and used only for statistical purposes.

INT_END While participation in this survey is voluntary, your cooperation is important to ensure that the information collected in this survey is accurate and as comprehensive as possible.

Section: End of Section

Section: Conception of baby (CB)

CB_BEG Beginning of Section

CB_R01A This survey is about your pregnancy, labour and early motherhood experiences with your baby.

CB_R01B I will start with the events around the time of your baby's conception.

CB_Q01 How many weeks pregnant were you when you realized you were pregnant?

INTERVIEWER: If respondent given in months, probe for an answer in weeks. If response is given in weeks and a decimal or fraction is given, round down to the nearest week. For example 3 and 1/2 weeks become 3 weeks.

[2 spaces] [Min: 1 Max: 42]

DK, RF

Coverage:

CB_Q02 Thinking back to just before you became pregnant, would you say that you wanted to be pregnant...?

INTERVIEWER: We are referring to the respondent's pregnancy with her baby. Read categories to respondent.

1 Sooner
2 Later
3 Then
4 Not at all
DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

TABLE OF CONTENTS

1 Survey introduction

1 Conception of baby

3 Prenatal care

7 Procedures and tests

8 Height and weight

10 Health problems during pregnancy

11 Stressful events

14 Information on pregnancy, labour and birth

18 Labour

22 Caesarean

23 Vaginal birth

27 Birth of baby

28 Pain management

33 Postpartum care

40 Breastfeeding

46 Baby at home

48 Mother at home

66 Information on the postpartum period

69 Edinburgh Postnatal Depression Scale

61 Smoking

63 Alcohol

83 Drugs

85 Reproductive history

86 Abuse and violence

70 Socio-demographic information

75 Work activities

80 Permission to share

85

Maternity Experiences Survey, 2006
Questionnaire

CB_Q03	When you first realized you were pregnant, what was your reaction? Were you...?	
	INTERVIEWER: Read categories to respondent.	
	1 Very happy	
	2 Somewhat happy	
	3 Neither happy nor unhappy	
	4 Somewhat unhappy	
	5 Very unhappy	
	DK, RF	
Coverage:	All respondents	
CB_Q04	In the 3 months before you got pregnant with ^baby's name, did you take a multivitamin containing folic acid or a folic acid supplement?	
	1 Yes	(Go to CB_Q08)
	2 No	(Go to CB_Q06)
	DK, RF	
Coverage:	All respondents	
CB_Q05	Did you take it every day?	
	1 Yes	
	2 No	
	DK, RF	
Coverage:	Respondents who took a multivitamin containing folic acid or a folic acid supplement in the 3 months before they got pregnant	
CB_Q06	During the first 3 months of your pregnancy with ^baby's name, did you take a multivitamin containing folic acid or a folic acid supplement?	
	1 Yes	(Go to CB_Q08)
	2 No	(Go to CB_Q06)
	DK, RF	
Coverage:	All respondents	
CB_Q07	Did you take it every day?	
	1 Yes	
	2 No	
	DK, RF	
Coverage:	Respondents who took a multivitamin containing folic acid or a folic acid supplement during the first 3 months of their pregnancy	
CB_Q08	Before your pregnancy with ^baby's name, did you know that taking folic acid before pregnancy can help prevent some birth defects?	
	1 Yes	
	2 No	
	DK, RF	
Coverage:	All respondents	
CB_Q09	Did you use any fertility medications or medical procedures to help you get pregnant with your baby?	
	1 Yes	(Go to CB_Q08)
	2 No	(Go to CB_END)
	DK, RF	
Coverage:	Respondents who when thinking back to just before they became pregnant said that they wanted to be pregnant, sooner, later or then	
CB_END	End of Section	
Section:	Prenatal care (PC)	
PC_BEG	Beginning of Section	
PC_R01	I would like to ask you about your visits to a doctor, nurse or other healthcare provider for check-ups and advice on your pregnancy before ^baby's name was born. Will you refer to these visits as prenatal care?	
PC_Q01	How many weeks pregnant with ^baby's name were you when you had your first visit to prenatal care? This includes the first time your pregnancy was confirmed by a healthcare provider.	
	INTERVIEWER: If response given in months, probe for an answer in weeks. If response is given in weeks and a decimal or fraction is given, round down to the nearest week. For example 3 and 1/4 weeks become 3 weeks.	
	Enter 94 if respondent did not have prenatal care visits.	
	(2 spaces) [Min: 1 Max: 94]	
	DK, RF	
Coverage:	All respondents	
PC_Q02	If PC_Q01 = 94	(Go to PC_Q07A)
	Else	(Go to PC_Q02)

Maternity Experiences Survey, 2006
Questionnaire

CB_Q03	When you first realized you were pregnant, what was your reaction? Were you...?	
	INTERVIEWER: Read categories to respondent.	
	1 Very happy	
	2 Somewhat happy	
	3 Neither happy nor unhappy	
	4 Somewhat unhappy	
	5 Very unhappy	
	DK, RF	
Coverage:	All respondents	
CB_Q04	In the 3 months before you got pregnant with ^baby's name, did you take a multivitamin containing folic acid or a folic acid supplement?	
	1 Yes	(Go to CB_Q08)
	2 No	(Go to CB_Q06)
	DK, RF	
Coverage:	All respondents	
CB_Q05	Did you take it every day?	
	1 Yes	
	2 No	
	DK, RF	
Coverage:	Respondents who took a multivitamin containing folic acid or a folic acid supplement in the 3 months before they got pregnant	
CB_Q06	During the first 3 months of your pregnancy with ^baby's name, did you take a multivitamin containing folic acid or a folic acid supplement?	
	1 Yes	(Go to CB_Q08)
	2 No	(Go to CB_Q06)
	DK, RF	
Coverage:	All respondents	
CB_Q07	Did you take it every day?	
	1 Yes	
	2 No	
	DK, RF	
Coverage:	Respondents who took a multivitamin containing folic acid or a folic acid supplement during the first 3 months of their pregnancy	

Maternity Experiences Survey, 2006
Questionnaire

PC_Q07A During your pregnancy with ^baby's name, did you attend prenatal or childbirth education classes?
INTERVIEWER: Only classes attended during the pregnancy with her baby will be included for this question.

1 Yes
2 No
DK, RF

(Go to PC_Q08)
(Go to PC_Q08)

Coverage: All respondents
PC_Q07B Did you attend these classes in...?
INTERVIEWER: Read categories to respondent.

- 1 A hospital
- 2 A health clinic
- 3 A community centre
- 4 Privately, such as with a midwife or doula
- 5 Other

DK, RF
Respondents who attended prenatal or childbirth education classes

PC_Q08 What was the expected or due date for the birth of ^baby's name?
INTERVIEWER: If respondent is having difficulty remembering, please probe for an approximate date. Probe by asking if the baby was born before, on or after the due date.

DK, RF
Call date block.
Coverage: All respondents

PC_Q09 If PC_Q07B = RF, DK (Go to PC_Q09)

PC_Q09 If PC_Q01 = 04 (Go to PC_END)
Else (Go to PC_Q09)

PC_Q09 At any time during your pregnancy, before your labour or the birth, did you request a caesarean from your healthcare provider?
INTERVIEWER: We are referring to the pregnancy with her baby.

- 1 Yes
2 No
DK, RF

Coverage: Respondents who had prenatal care visits

Maternity Experiences Survey, 2006
Questionnaire

PC_Q10 At any time during your pregnancy, before your labour or the birth, did your healthcare provider recommend a caesarean?
INTERVIEWER: We are referring to a recommendation made before the respondent went into labour or gave birth to her baby.

1 Yes
2 No
DK, RF

Coverage: Respondents who had prenatal care visits

PC_END End of Section

Section: Procedures and tests (PT)

PT_BEG Beginning of Section

PT_Q01 If PC_Q01 = 04 (Go to PT_END)
Else (Go to PT_Q01)

PT_Q01 How many ultrasounds did you have during your pregnancy with ^baby's name?
INTERVIEWER: If respondent is having difficulty remembering, ask for best estimate.

DK, RF (2 spaces) [Min: 0 Max: 30]

Coverage: Respondents who had prenatal care visits

PT_Q02 If PT_Q01 = (Go to PT_Q02)
Else (Go to PT_Q02)

PT_Q02 Were you offered an ultrasound during your pregnancy with ^baby's name?
1 Yes
2 No
DK, RF

(Go to PT_Q04)

Coverage: Respondents who had prenatal care visits but did not have an ultrasound

BREASTFEEDING AND POSTPARTUM DEPRESSION

Maternity Experiences Survey, 2006 Questionnaire

HW_Q01B INTERVIEWER: Enter the number of centimetres. 1 metre = 100 centimetres.
 _____ (3 spaces) [Min: 90 Max: 300]
 DK, RF
 (Go to HW_Q02A)
 Coverage: Respondents whose height was measured in centimetres

Default: _____
 Coverage: Respondents whose height was measured in centimetres

HW_Q01C INTERVIEWER: Enter the number of feet in this screen and inches in the next.
 _____ (2 spaces) [Min: 0 Max: 7]
 DK, RF
 Coverage: Respondents whose height was measured in feet and inches

HW_Q01D INTERVIEWER: Enter the number of inches.
 _____ (2 spaces) [Min: 0 Max: 95]
 DK, RF
 Coverage: Respondents whose height was measured in feet and inches

HW_Q02A Just before your pregnancy with 'baby's name', how much did you weight?
 INTERVIEWER: Enter amount only: Weight
 _____ (3 spaces) [Min: 0 Max: 75]
 DK, RF
 Coverage: All respondents

HW_Q02B INTERVIEWER: What is your weight in pounds or kilograms?
 1 Pounds
 2 Kilograms
 DK, RF
 Coverage: All respondents

HW_Q03A How much weight did you gain during your pregnancy with 'baby's name'?
 INTERVIEWER: Enter amount only: Weight
 If respondent reports losing weight during pregnancy, then enter '0'.
 _____ (3 spaces) [Min: 0 Max: 100]
 DK, RF
 Coverage: All respondents

HW_Q03 If HW_Q03A > 0
 Otherwise, _____
 Coverage: All respondents

Maternity Experiences Survey, 2006 Questionnaire

PT_Q03 How many weeks pregnant were you when you had your first ultrasound?
 INTERVIEWER: If response given in months, probe for an answer in weeks. If response is given in weeks and a decimal or fraction is given, round down to the nearest week. For example 3 and 3/4 weeks become 3 weeks.
 _____ (2 spaces) [Min: 1 Max: 42]
 DK, RF
 Coverage: Respondents who had prenatal care visits and at least one ultrasound

PT_Q04 During your pregnancy with 'baby's name, did you have a blood test for HIV, the virus that causes AIDS?
 1 Yes
 2 No
 DK
 RF
 Coverage: Respondents who had prenatal care visits

PT_Q05 How involved were you in deciding whether or not to have a test for HIV?
 INTERVIEWER: Read categories to respondent.
 1 Very involved
 2 Somewhat involved
 3 Not involved
 DK, RF
 Coverage: Respondents who had prenatal care visits

PT_END End of Section
 Section: Height and Weight (JWH)

HW_BEG Beginning of Section

HW_R01 The next few questions ask about your height and the changes in your weight related to the pregnancy.
 How tall are you without shoes on?
 INTERVIEWER: Was that in feet and inches or in centimetres?
 1 Centimetres
 2 Feet and inches
 DK, RF
 Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

HP_Q02 INTERVIEWER: During your pregnancy, did you develop any new medical conditions or health problems that required you to take medication for more than 2 weeks, have special care, or extra tests?
 1 Yes
 2 No
 DK, RF
 Coverage: All respondents

HP_Q03 INTERVIEWER: Including morning sickness if it required respondent to take medication for more than 2 weeks, have special care, or extra tests.
 1 Yes
 2 No
 DK, RF
 Coverage: All respondents

HP_Q04 INTERVIEWER: We are referring to the respondent's pregnancy with her baby.
 1 Yes
 2 No
 DK, RF
 Coverage: All respondents

HP_END (Before your labour and the birth,) how many nights in total did you stay in a hospital during your pregnancy with baby's name?
 1 Yes
 2 No
 DK, RF
 Coverage: All respondents

SE_R01 INTERVIEWER: If respondent is having difficulty remembering, ask for best estimate.
 1 Yes
 2 No
 DK, RF
 Coverage: All respondents

SE_BEG (Before your pregnancy, did you have any medical conditions or health problems that required you to take medication for more than 2 weeks, have special care, or extra tests during your pregnancy?)
 1 Yes
 2 No
 DK, RF
 Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

HW_Q03B INTERVIEWER: Was that in pounds or kilograms?
 1 Pounds
 2 Kilograms
 DK, RF
 Coverage: Respondents who gained weight during their pregnancy

HW_Q04A How much do you weigh now?
 INTERVIEWER: Enter amount only: Weight
 _____ (3 spaces) [Min: 0 Max: 575]
 DK, RF
 Coverage: All respondents

HW_Q04B INTERVIEWER: Was that in pounds or kilograms?
 1 Pounds
 2 Kilograms
 DK, RF
 Coverage: All respondents

HP_END End of section

Section: Health problems during pregnancy (HP)

HP_BEG Beginning of section

HP_R01 The next section deals with health problems that you may have had during your pregnancy with baby's name.
 1 Yes
 2 No
 DK, RF
 Coverage: All respondents

HP_Q01 Before your pregnancy, did you have any medical conditions or health problems that required you to take medication for more than 2 weeks, have special care, or extra tests during your pregnancy?
 1 Yes
 2 No
 DK, RF
 Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

SE_Q06 In the 12 months before 'baby's name was born...

--your husband or partner lost his job?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SE_Q07 In the 12 months before 'baby's name was born...

--you lost your job even though you wanted to go on working?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SE_Q08 In the 12 months before 'baby's name was born...

--you and your husband or partner argued more than usual?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SE_Q09 In the 12 months before 'baby's name was born...

--your husband or partner said he did not want you to be pregnant?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SE_Q10 In the 12 months before 'baby's name was born...

--you had a lot of bills you couldn't pay?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

SE_Q01 Thinking about the amount of stress in your life during the 12 months before 'baby's name was born, would you say that most days were...?

INTERVIEWER: Read categories to respondent.

- 1 Not stressful
- 2 Somewhat stressful
- 3 Very stressful

Coverage: All respondents

SE_R02 Now I'm going to read you a list of things that might happen soon in your life. Please tell me if any of the following events happened to you in the 12 months before 'baby's name was born. If you feel a question does not apply to you answer 'no'.

SE_Q02 In the 12 months before 'baby's name was born...

--a close family member was very sick and had to go into the hospital?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SE_Q03 In the 12 months before 'baby's name was born...

--you got separated or divorced from your husband or partner?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SE_Q04 In the 12 months before 'baby's name was born...

--you moved to a new address?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SE_Q05 In the 12 months before 'baby's name was born...

--you were homeless?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

SI_Q01 During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information about the following topics...
... about physical changes to your body during pregnancy such as water retention, backache or indigestion?

- 1 Yes
 - 2 No
 - DK, RF
- Coverage: All respondents

SI_Q02 During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information...
... about emotional changes some women experience during pregnancy such as feeling insecure or afraid?

- 1 Yes
 - 2 No
 - DK, RF
- Coverage: All respondents

SI_Q03 During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information...
... about warning signs of complications during pregnancy, such as headaches and high fevers?

- 1 Yes
 - 2 No
 - DK, RF
- Coverage: All respondents

SI_Q04 During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information...
... about how taking medication could affect your baby?

- 1 Yes
 - 2 No
 - DK, RF
- Coverage: All respondents

INTERVIEWER: Includes prescription and over the counter medication.

Maternity Experiences Survey, 2006
Questionnaire

SE_Q11 In the 12 months before ^baby's name was born...
...you were involved in a physical fight?

- 1 Yes
 - 2 No
 - DK, RF
- Coverage: All respondents

SE_Q12 In the 12 months before ^baby's name was born...
...you or your husband or partner went to jail or a detention centre?

- 1 Yes
 - 2 No
 - DK, RF
- Coverage: All respondents

SE_Q13 In the 12 months before ^baby's name was born...
...someone very close to you had a bad problem with drinking or drugs?

- 1 Yes
 - 2 No
 - DK, RF
- Coverage: All respondents

SE_Q14 In the 12 months before ^baby's name was born...
...someone very close to you died?

- 1 Yes
 - 2 No
 - DK, RF
- Coverage: All respondents

SE_END End of Section

Section: Information on pregnancy, labour and birth (SI)

SI_END Beginning of Section

SI_ROY The next few questions are about information you had during your pregnancy.

Maternity Experiences Survey, 2006
Questionnaire

SI_Q09 During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information...

-- about medical tests or procedures that may be required during pregnancy such as ultrasound or amniocentesis?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SI_Q10

During your pregnancy with ^baby's name, who or what was your most useful source of information about pregnancy, labour and birth?

INTERVIEWER: If respondent says 'doctor', probe to find out what type of doctor.

- 01 Previous pregnancy
- 02 Family or friends
- 03 Obstetrician/gynaecologist
- 04 Family doctor/general practitioner
- 05 Midwife
- 06 Nurse/nurse practitioner
- 07 Doula
- 08 Books
- 09 Prenatal/childbirth classes
- 10 Internet
- 11 Other... (Go to SI_S10)
- DK, RF

Default: (Go to SLR11)

Coverage: All respondents

SI_S10

During your pregnancy with ^baby's name, who or what was your most useful source of information about pregnancy, labour and birth?

INTERVIEWER: Specify.

(80 spaces)

Coverage: Respondents who reported another useful source of information about pregnancy

SI_R11

People sometimes look to others for companionship, assistance or other types of support.

Maternity Experiences Survey, 2006
Questionnaire

SI_Q06 During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information...

-- about what to expect during labour and the birth?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SI_Q06

During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information...

-- about what your husband or partner could do to support you during labour and the birth?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SI_Q07

During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information...

-- about the use of medication-free pain management techniques during labour and the birth such as breathing exercises or massage?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

SI_Q08

During your pregnancy with ^baby's name, before your labour and the birth, did you have enough information...

-- about potential side effects of the use of pain medication and anaesthetics during labour and the birth?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

LB_Q04 Did you travel to another city, town or community, to give birth to 'baby's name?

1 Yes..... (Go to LB_Q05A)
2 No
DK, RF

Default: (Go to LB_Q08)
Coverage: All respondents

LB_Q05A In kilometres or miles, how far did you travel to give birth?
INTERVIEWER: Enter distance only.
____ (4 spaces) [Min: 1 Max: 995]
DK, RF (Go to LB_Q08)
Respondents who travelled to another city, town or community, to give birth to their baby

LB_Q05B Was that in kilometres or miles?
1 Kilometres
2 Miles
DK, RF
Respondents who travelled to another city, town or community, to give birth to their baby

LB_Q06 How many nights did you stay in this city, town or community before you gave birth?
INTERVIEWER: If less than 1 night, enter 0.
____ (2 spaces) [Min: 0 Max: 90]
DK, RF
Respondents who travelled to another city, town or community, to give birth to their baby

LB_Q07 Overall, was the experience of travelling to another city, town or community to give birth to 'baby's name...?
INTERVIEWER: Read categories to respondent.
1 Very positive
2 Somewhat positive
3 Neither positive nor negative
4 Somewhat negative
5 Very negative
6 DK, RF
Respondents who travelled to another city, town or community, to give birth to their baby

LB_Q08 HPC_Q01 = 94
Else..... (Go to LB_Q11A)
..... (Go to LB_Q08)

Maternity Experiences Survey, 2006
Questionnaire

SL_Q11 During your pregnancy, how often was support available to you when you needed it?
INTERVIEWER: Read categories to respondent.
1 None of the time
2 A little of the time
3 Some of the time
4 Most of the time
5 All of the time
DK, RF
All respondents

SL_END End of Section

Section: Labour (LB)

LB_BEG Beginning of Section

LB_R01 Now, some questions about your labour and the birth of 'baby's name.

LB_Q01 Was 'baby's name born in a hospital, clinic, birthing centre or in a private home (i.e. home birth)?
INTERVIEWER: If respondent says birthing centre, code 2 regardless of whether it was in or outside a hospital.
1 Hospital or clinic
2 Birthing centre (Go to LB_Q04)
3 Private home (Go to LB_Q04)
4 Other (Go to LB_Q04)
DK, RF (Go to LB_Q04)
All respondents

LB_Q02 In what city or town was this hospital or clinic located?
INTERVIEWER: Enter name of city or town.
____ (25 spaces)
DK, RF
Respondents whose baby was born in a hospital, clinic or birthing centre

LB_Q03 What was the name of the hospital or clinic where you gave birth to 'baby's name?
INTERVIEWER: Enter name.
____ (255 spaces)
DK, RF
Respondents whose baby was born in a hospital, clinic or birthing centre

Maternity Experiences Survey, 2006
Questionnaire

LB_Q11B What type of doctor was this?
INTERVIEWER: Read categories to respondent.

1 Obstetrician
 2 Gynecologist
 3 Family doctor
 4 General practitioner
 5 Other doctor
 6 DK, RF

Coverage: Respondents who had a doctor (unspecified) as the person who primarily delivered their baby

LB_Q12 Did you have your husband or partner with you during labour before the birth of baby's name?
INTERVIEWER: The husband or partner must be in the same room as the respondent during labour for the answer to be 'yes'.

1 Yes
 2 No
 3 Did not go into labour/had caesarean
 4 Did not have a husband or partner at that time
 DK, RF

Coverage: All respondents

LB_Q13 How satisfied or dissatisfied were you with the support you received from your husband or partner during labour before the birth?
INTERVIEWER: Read categories to respondent.

1 Very satisfied
 2 Somewhat satisfied
 3 Neither satisfied nor dissatisfied
 4 Somewhat dissatisfied
 5 Very dissatisfied
 6 DK, RF

Coverage: Respondents who had their husband or partner with them during labour before the birth of their baby

LB_Q14 Did you have your husband or partner with you during the birth of baby's name?
INTERVIEWER: The husband or partner must be in the same room as the respondent at the time of birth for the answer to be 'yes'.

1 Yes
 2 No
 DK, RF

Coverage: Respondents who indicated they had a husband or partner (LB_Q12) at the time of the birth of their baby

Maternity Experiences Survey, 2006
Questionnaire

LB_Q06 Did the healthcare provider who cared for you during your pregnancy also care for you during the labour and birth?

1 Yes
 2 No
 DK, RF

Coverage: Respondents who had prenatal care visits

LB_Q09 Was it important to you to have had this healthcare provider with you?

1 Yes
 2 No
 DK, RF

Default: (Go to LB_Q11A)

Coverage: Respondents who had prenatal care visits and who had the same healthcare provider during their pregnancy as during the labour and birth

LB_Q10 Would it have been important to you to have had this healthcare provider with you?

1 Yes
 2 No
 DK, RF

Coverage: Respondents who had prenatal care visits and who did not have the same healthcare provider during their pregnancy as during the labour and birth

LB_Q11A Which type of healthcare provider such as an obstetrician, family doctor, or midwife was the person who primarily delivered baby's name?

INTERVIEWER: If more than one person was involved, indicate who handled the baby, helped the baby as the baby was being born.

01 Obstetrician
 02 Gynecologist
 03 Family doctor
 04 General practitioner/GP
 05 Midwife
 06 Nurse or nurse practitioner
 07 Other
 08 DK, RF

Default: (Go to LB_Q12)

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

CS_Q01	If LB_Q18 = 2 Else.....(Go to CS_Q01)(Go to CS_END)
CS_Q01	Was the cesarean planned, that is, the decision was made before you went into labour with "baby's name, or was it unplanned?
1	Planned.....(Go to CS_Q03)
2	Unplanned.....(Go to CS_Q03)
	DK, RF.....(Go to CS_Q03)
Coverage:	Respondents who had a cesarean birth for their baby
CS_Q02	Was it planned for medical or non-medical reasons? Health concerns for the mother or baby, or the position of the baby in the womb are examples of medical reasons. Most other reasons are non-medical.
1	Medical
2	Non-medical
	DK, RF
Default:	(Go to CS_END)
Coverage:	Respondents who had a planned cesarean birth for their baby
CS_Q03	Did you attempt to give birth vaginally to "baby's name?
	INTERVIEWER: Did the respondent experience labour?
1	Yes
2	No
	DK, RF
Coverage:	Respondents who had an unplanned cesarean birth for their baby
CS_END	End of Section
Section:	Vaginal Birth (VB)
VB_BEG	Beginning of Section
VB_Q01	If LB_Q18 = 1 or (LB_Q18 = 2 and CS_Q03 = 1).....(Go to VB_Q01A)
	Else.....(Go to VB_END)
VB_Q01A	Were forceps used?
	INTERVIEWER: We are referring to forceps being used on her baby.
1	Yes
2	No
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth

Maternity Experiences Survey, 2006
Questionnaire

LB_Q15	How satisfied or dissatisfied were you with the support you received from your husband or partner during the birth?
	INTERVIEWER: Read categories to respondent.
1	Very satisfied
2	Somewhat satisfied
3	Neither satisfied nor dissatisfied
4	Somewhat dissatisfied
5	Very dissatisfied
	DK, RF
Coverage:	Respondents who indicated they had a husband or partner (LB_Q12) at the time of the birth of their baby
LB_Q16	Did you have a companion with you during labour or the birth of "baby's name?
	INTERVIEWER: The companion(s) must be in the same room as the respondent during labour or at the time of birth for the answer to be yes.
1	Yes.....(Go to LB_Q18)
2	No.....(Go to LB_Q18)
	DK, RF
Coverage:	All respondents
LB_Q17	How satisfied or dissatisfied were you with the support you received from your companion(s)?
	INTERVIEWER: Read categories to respondent.
1	Very satisfied
2	Somewhat satisfied
3	Neither satisfied nor dissatisfied
4	Somewhat dissatisfied
5	Very dissatisfied
	DK, RF
Coverage:	Respondents who had a companion with them during labour or the birth of their baby
LB_Q18	Did you have a vaginal or cesarean birth for "baby's name?
1	Vaginal
2	Cesarean
	DK, RF
Coverage:	All respondents
LB_END	End of Section
Section:	Cesarean (CS)
CS_BEG	Beginning of Section

Maternity Experiences Survey, 2006
Questionnaire

VB_Q06 Did your healthcare provider try to start or induce your labour by the use of medication or some other technique?
INTERVIEWER: We are referring to the respondent's labour with her baby.

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

VB_Q08A After your labour started, did your healthcare provider try to speed it up by the use of medication or some other technique?
INTERVIEWER: We are referring to the respondent's labour with her baby.

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

VB_Q08B Did your healthcare provider give you enough information about the progress of your labour?
INTERVIEWER: We are referring to the respondent's labour with her baby.

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

VB_Q07 How many hours did your labour last from when you started having regular, strong contractions until the birth of ^baby's name?
INTERVIEWER: Response given with a decimal, fraction or minutes, should be rounded according to standard practice. For example 6 and 1/4 hours (or 6.5 hours) becomes 7 hours, or 6 hours and 20 minutes becomes 6 hours.

- 1 (2 spaces) (Min: 0 Max: 72)
- 2 DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

VB_Q09 Before or during labour, in preparation for birth, did you have your pubic hair or the hair around your vagina shaved?
INTERVIEWER: We are referring to the respondent's labour with and birth of the selected baby.

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

Maternity Experiences Survey, 2006
Questionnaire

VB_Q01B Was vacuum extraction used?
INTERVIEWER: We are referring to vacuum being used on her baby.

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

VB_Q02 If LB_Q18 = 2 (Go to VB_Q05)
Else (Go to VB_Q02)

VB_Q02 Was ^baby's name born head first?

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who had a vaginal birth

VB_Q03 Which of the following best describes your position when ^baby's name was born?
INTERVIEWER: This is the position the respondent was in when her baby was born, not during the labour. Read ^baby's name to respondent.

- 1 Lying on your side (Go to VB_Q05)
- 2 Propped up or sitting
- 3 Lying flat on your back
- 4 Some other position
- DK, RF

Coverage: Respondents who had a vaginal birth

VB_Q04 Were you lying in stirrups?
INTERVIEWER: We are referring to legs being in stirrups for the birth of the selected baby.

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who had a vaginal birth, and were not lying on their side when their baby was born

Maternity Experiences Survey, 2006
Questionnaire

VB_Q13	Was ^baby's name's heartbeat monitored during labour using some other method?
1	Yes
2	No
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth, and whose baby's heart was not monitored by an electronic fetal monitor (EFM) or any another instrument such as a stethoscope, Doppler, or fetoscope
VB_END	End of Section
Section:	Birth of baby (BB)
BB_BEG	Beginning of section
BB_Q01	If LB_Q18 = 2 (Go to BB_Q01) Else (Go to BB_Q02)
BB_Q01	What kind of anaesthesia were you given for the Caesarean? Were you given....?
	INTERVIEWER: Read categories to respondent.
1	An epidural or spinal anaesthesia (that team injection into your back to numb the lower part of your body)
2	A general anaesthetic (they put you to sleep)
3	Both
	DK, RF
Coverage:	Respondents who had a Caesarean birth for their baby
BB_Q02	If LB_Q18 = 2 and CS_Q03 = 1 (Go to BB_Q02) Else (Go to BB_Q05)
BB_Q02	During the birth of ^baby's name, did anyone push on the top of your abdomen to help push your baby down?
1	Yes
2	No
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth
BB_Q03	Just before the birth of ^baby's name, did you have an episiotomy, that is, a cut to enlarge your vagina?
1	Yes
2	No
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth

Maternity Experiences Survey, 2006
Questionnaire

VB_Q09	Before or during labour, in preparation for birth, did you have an enema to help you move your bowels?
1	Yes
2	No
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth
VB_Q10	During labour, were you attached to a machine, called an electronic fetal monitor (EFM), that recorded ^baby's name's heartbeat?
1	Yes
2	No
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth
VB_Q11	If VB_Q10 = 1 (Go to VB_Q11) Else (Go to VB_Q12)
VB_Q11	Was the electronic fetal monitor used....?
	INTERVIEWER: Read categories to respondent.
1	On arrival or admission during labour
2	On and off (intermittently) during labour
3	Continuously during labour
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth, and were attached to an electronic fetal monitor (EFM)
VB_Q12	During labour, was your baby's heartbeat monitored by another instrument such as a stethoscope, Doppler, or fetoscope (an instrument other than an electronic fetal monitor)?
1	Yes
2	No
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth
VB_Q13	If VB_Q10=2 or non-response and VB_Q12=2 or non-response (Go to VB_Q13) Else (Go to VB_END)

Maternity Experiences Survey, 2006
Questionnaire

PM_Q01C What medication-free methods did you use to cope with pain during labour or birth of 'baby's name? Did you...
... change positions?
1 Yes
2 No
DK, RF
Coverage: Respondents who had or attempted to have a vaginal birth

PM_Q01D What medication-free methods did you use to cope with pain during labour or birth of 'baby's name? Did you...
... walk around?
1 Yes
2 No
DK, RF
Coverage: Respondents who had or attempted to have a vaginal birth

PM_Q01E What medication-free methods did you use to cope with pain during labour or birth of 'baby's name? Did you...
... use a bath or shower?
1 Yes
2 No
DK, RF
Coverage: Respondents who had or attempted to have a vaginal birth

PM_Q01F What medication-free methods did you use to cope with pain during labour or birth of 'baby's name? Did you...
... use a vibrating ball?
1 Yes
2 No
DK, RF
Coverage: Respondents who had or attempted to have a vaginal birth

If PM_Q01A = 1 (Go to PM_Q02)
Else (Go to PM_Q03)

Maternity Experiences Survey, 2006
Questionnaire

BB_Q04 After the birth, did you have stitches near the opening of your vagina to repair a tear or cut?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had or attempted to have a vaginal birth

BB_Q05 Did you experience any complications or health problems during labour or the birth that required you to have special care, extra tests, or stay in a hospital?
INTERVIEWER: We are referring to the labour and the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: All respondents

BB_END End of section

Section: Pain management (PM)

PM_BEG Beginning of section

PM_Q01 If LB_Q18 = 1 or (LB_Q16 = 2 and CS_Q03 = 1) (Go to PM_Q01A)
If LB_Q18 = RF or DK (Go to PM_END)
Else (Go to PM_Q14)

PM_Q01A What medication-free methods did you use to cope with pain during labour or birth of 'baby's name? Did you...
... breathing exercises?
1 Yes
2 No
DK, RF
Coverage: Respondents who had or attempted to have a vaginal birth

PM_Q01B What medication-free methods did you use to cope with pain during labour or birth of 'baby's name? Did you...
... use massage?
1 Yes
2 No
DK, RF
Coverage: Respondents who had or attempted to have a vaginal birth

Maternity Experiences Survey, 2006
Questionnaire

PM_Q05	How helpful was walking around in relieving your pain? INTERVIEWER: Read categories to respondent if required.
1	Very helpful
2	Somewhat helpful
3	Not helpful at all
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth and who walked around to cope with pain during labour or birth of their baby
PM_Q06	If PM_Q01E = 1 (Go to PM_Q06) Else (Go to PM_Q07)
PM_Q06	How helpful was having a bath or showering in relieving your pain? INTERVIEWER: Read categories to respondent if required.
1	Very helpful
2	Somewhat helpful
3	Not helpful at all
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth and who used a bath or shower to cope with pain during labour or birth of their baby
PM_Q07	If PM_Q01F = 1 (Go to PM_Q07) Else (Go to PM_Q08)
PM_Q07	How helpful was the birthing ball in relieving your pain? INTERVIEWER: Read categories to respondent if required.
1	Very helpful
2	Somewhat helpful
3	Not helpful at all
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth and who used a birthing ball to cope with pain during labour

Maternity Experiences Survey, 2006
Questionnaire

PM_Q02	How helpful were the breathing exercises in relieving your pain? INTERVIEWER: Read categories to respondent if required.
1	Very helpful
2	Somewhat helpful
3	Not helpful at all
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth and who did breathing exercises to cope with the pain during labour or birth of their baby
PM_Q03	If PM_Q01B = 1 (Go to PM_Q03) Else (Go to PM_Q04)
PM_Q03	How helpful was massage in relieving your pain? INTERVIEWER: Read categories to respondent if required.
1	Very helpful
2	Somewhat helpful
3	Not helpful at all
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth and who used a massage to cope with pain during labour or birth of their baby
PM_Q04	If PM_Q01C = 1 (Go to PM_Q04) Else (Go to PM_Q05)
PM_Q04	How helpful was changing positions in relieving your pain? INTERVIEWER: Read categories to respondent if required.
1	Very helpful
2	Somewhat helpful
3	Not helpful at all
	DK, RF
Coverage:	Respondents who had or attempted to have a vaginal birth and who changed positions to cope with pain during labour or birth of their baby
PM_Q05	If PM_Q01D = 1 (Go to PM_Q05) Else (Go to PM_Q06)

Maternity Experiences Survey, 2006
Questionnaire

PM_Q12 How helpful was the pain killing medication in relieving your pain?
INTERVIEWER: Read categories to respondent if required.

1 Very helpful
2 Somewhat helpful
3 Not helpful at all
DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth and who used pain killing medications to cope with pain during labour or birth of their baby

PM_Q13 If PM_Q10=1 (Go to PM_Q13)
Else (Go to PM_Q14)

PM_Q13 How helpful was the gas in relieving your pain?
INTERVIEWER: Read categories to respondent if required.

1 Very helpful
2 Somewhat helpful
3 Not helpful at all
DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth and who used gas to cope with pain during labour or birth of their baby

PM_Q14 Overall, would you describe the experience of labour and birth as...?
INTERVIEWER: Read categories to respondent.

1 Very negative
2 Somewhat negative
3 Neither negative nor positive
4 Somewhat positive
5 Very positive
DK, RF

Coverage: All respondents

PM_END End of section
Section: Postpartum care (PP)
PP_BEG Beginning of Section
PP_R01 The next set of questions is about your experiences after the birth of 'baby's name.

Maternity Experiences Survey, 2006
Questionnaire

PM_Q06 How we are interested in medications you used to cope with pain during labour or birth of 'baby's name? Did you use...
... an epidural or spinal anaesthesia?
INTERVIEWER: For respondents who had a caesarean section, we are interested in what they used for pain during labour.

1 Yes
2 No
DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

PM_Q09 Did you use...
...pain killing medications such as Demerol, fentanyl or morphine?

1 Yes
2 No
DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

PM_Q10 Did you use...
...gas breathed through a mask or a piece such as nitrous oxide, also known as laughing gas or entonox?

1 Yes
2 No
DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth

PM_Q11 How helpful was the epidural or spinal anaesthesia in relieving your pain?
INTERVIEWER: Read categories to respondent if required.

1 Very helpful
2 Somewhat helpful
3 Not helpful at all
DK, RF

Coverage: Respondents who had or attempted to have a vaginal birth and who used an epidural or spinal anaesthetic to cope with pain during labour or birth of their baby

PM_Q12 If PM_Q09=1 (Go to PM_Q12)
Else (Go to PM_Q13)

Maternity Experiences Survey, 2006
Questionnaire

PP_Q03 How long was ^baby's name in the intensive care or special care unit?
 1 Less than 12 hours
 2 12 hours to less than 24 hours
 3 1 day to less than 4 days
 4 4 days to less than 7 days
 5 7 days or more
 DK, RF
 (Go to PP_Q12A)

Default: Respondents whose baby was admitted to an intensive care or special care unit immediately after birth
 Coverage:

PP_Q04 How soon after the birth did you first hold ^baby's name?
 INTERVIEWER: Includes baby being placed on the mother if they do.
 01 Immediately or within 5 minutes.....(Go to PP_Q08)
 02 6 minutes to less than 31 minutes.....(Go to PP_Q08)
 03 31 minutes to less than 60 minutes.....(Go to PP_Q08)
 04 1 hour to less than 6 hours
 05 6 hours to less than 12 hours
 06 12 hours to less than 24 hours
 07 24 hours or more
 DK, RF.....(Go to PP_Q08)

Coverage: Respondents whose baby was not admitted to intensive care or special care unit immediately after birth

PP_Q05 Why did you not hold ^baby's name sooner?
 INTERVIEWER: Read categories to respondent.

1 There were concerns about the baby's health
 2 You had a caregiver
 3 You weren't well for another reason
 4 There was no concern about the baby's or your condition, but the baby was not giving up your sooner
 DK, RF

Coverage: Respondents whose baby was not admitted to an intensive care or special care unit immediately after birth and who did not hold their baby during the first hour after birth

PP_Q06 Did you feel you held ^baby's name...?
 INTERVIEWER: Read categories to respondent.
 1 At the right time
 2 Too soon
 3 Too late
 DK, RF
 Coverage: Respondents whose baby was not admitted to an intensive care or special care unit immediately after birth

Maternity Experiences Survey, 2006
Questionnaire

PP_Q01A How much did ^his/her weight at birth, in grams, or pounds and ounces?
 INTERVIEWER: Choose grams or pounds/ounces below and enter number in the next question.
 1 Grams.....(Go to PP_Q01B)
 2 Pounds and ounces.....(Go to PP_Q01C)
 DK, RF.....(Go to PP_Q02)

Coverage: All respondents
 PP_Q01B Enter birth weight in grams. 1 kilogram =1000 grams.
 _____(4 spaces) [Min: 1000 Max: 8000]
 DK, RF
 (Go to PP_Q02)

Default: Respondents who entered the birth weight of their baby in grams
 Coverage: Respondents who entered the birth weight of their baby in grams
 PP_Q01C Enter birth weight in pounds in this screen, and ounces in the next.
 _____(2 spaces) [Min: 1 Max: 15]
 DK, RF.....(Go to PP_Q02)

Default: (Go to PP_Q01D)
 Coverage: Respondents who entered the birth weight of their baby in pounds and ounces

PP_Q01D Enter ounces.
 _____(2 spaces) [Min: 0 Max: 15]
 DK, RF
 Coverage: Respondents who entered the birth weight of their baby in pounds and ounces

PP_Q02 Immediately after birth, was ^baby's name admitted to an intensive care or special care unit?
 1 Yes
 2 No
 DK, RF.....(Go to PP_Q04)
 Coverage: All respondents

Default: (Go to PP_Q04)
 Coverage: (Go to PP_Q04)

Maternity Experiences Survey, 2006
Questionnaire

PP_Q11 In the first 24 hours following the birth, was the amount of time you spent with 'baby's name...?

INTERVIEWER: Read categories to respondent.

- 1 About right
- 2 Too little
- 3 Too much

DK, RF

Coverage: Respondents whose baby was not admitted to an intensive care or special care unit immediately after birth

PP_Q12A If LB_Q01 = 1 (hospital or clinic) or 2 (birthing centre)..... (Go to PP_Q12A)

Else..... (Go to PP_Q16)

PP_Q12A How many days, weeks or months did you stay in the hospital or clinic after 'baby's name was born?

INTERVIEWER: Enter length of time. If less than 1 day, enter 0 days.

____ (3 spaces) (Min: 0 Max: 364)

DK, RF..... (Go to PP_Q13)

Coverage: Respondents whose baby was born in a hospital, clinic or birthing centre

PP_Q12B

- 1 Days
- 2 Weeks
- 3 Months

DK, RF..... (Go to PP_Q13)

Coverage: Respondents whose baby was born in a hospital, clinic or birthing centre

PP_Q13 Do you feel your stay in the hospital or clinic was...?

INTERVIEWER: Read categories to respondent.

- 1 About right
- 2 Too short
- 3 Too long

DK, RF

Coverage: Respondents whose baby was born in a hospital, clinic or birthing centre

PP_Q14 If PP_Q03 = 4 and (PP_Q12B = 1 and PP_Q12A < 4)..... (Go to PP_Q15A)
If PP_Q03 = 5 and (PP_Q12B = 1 and PP_Q12A < 7)..... (Go to PP_Q15A)
Else..... (Go to PP_Q14)

Maternity Experiences Survey, 2006
Questionnaire

PP_Q07 The first time you held 'baby's name, was 'he/she naked? That is, not wrapped, dressed or in a diaper.

- 1 Yes
- 2 No

DK, RF

Coverage: Respondents whose baby was not admitted to an intensive care or special care unit immediately after birth

PP_Q08 The first time you held 'baby's name, was 'he/she against your naked skin?

INTERVIEWER: Meaning no sheet or clothing between mother and baby.

- 1 Yes
- 2 No

DK, RF

Coverage: Respondents whose baby was not admitted to an intensive care or special care unit immediately after birth

PP_Q09 Which of the following best describes when 'baby's name was during most of the first hour after birth?

INTERVIEWER: Read categories to respondent.

- 1 In bed with you
- 2 In the same room as you, but not in your bed
- 3 Not in the same room as you

DK, RF

Coverage: Respondents whose baby was not admitted to an intensive care or special care unit immediately after birth

PP_Q10 During the first 24 hours following the birth, how many hours in total was 'baby's name in another room? Please include the time 'he/she may have spent in another room while you were resting, at night or during the day.

INTERVIEWER: Read categories to respondent.

- 1 Less than 1 hour
- 2 1 hour to less than 6 hours
- 3 6 hours or more

DK, RF

Coverage: Respondents whose baby was not admitted to an intensive care or special care unit immediately after birth

Maternity Experiences Survey, 2006
Questionnaire

PP_Q18 Did you have enough information about circumcision?
 1 Yes
 2 No
 DK, RF
 Coverage: Respondents whose baby was male

PP_R19 Now, I would like to ask you about your satisfaction with various aspects of your maternity care.

PP_Q19A Please think back to your entire pregnancy, labour and birth, and immediate postpartum experience. Overall, how satisfied or dissatisfied were you with...
 ...the information given to you by your healthcare providers?
 INTERVIEWER: Read categories to respondent.
 1 Very satisfied
 2 Somewhat satisfied
 3 Neither satisfied nor dissatisfied
 4 Somewhat dissatisfied
 5 Very dissatisfied
 DK, RF
 Coverage: All respondents

PP_Q18B Please think back to your entire pregnancy, labour and birth, and immediate postpartum experience. Overall, how satisfied or dissatisfied were you with...
 ...the compassion and understanding shown by your healthcare providers?
 1 Very satisfied
 2 Somewhat satisfied
 3 Neither satisfied nor dissatisfied
 4 Somewhat dissatisfied
 5 Very dissatisfied
 DK, RF
 Coverage: All respondents

PP_Q18C Please think back to your entire pregnancy, labour and birth, and immediate postpartum experience. Overall, how satisfied or dissatisfied were you with...
 ...the competency of your healthcare providers?
 1 Very satisfied
 2 Somewhat satisfied
 3 Neither satisfied nor dissatisfied
 4 Somewhat dissatisfied
 5 Very dissatisfied
 DK, RF
 Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

PP_Q14 Did ^baby's name go home with you when you left the hospital or clinic?
 1 Yes
 2 No
 DK, RF
 Coverage: Respondents whose baby was born in a hospital, clinic or birthing centre, and who did not have their baby in an intensive care or special care unit when they were discharged

PP_Q15A Including the day of birth, for how many days, weeks or months did ^baby's name stay in the hospital or clinic?
 INTERVIEWER: Enter length of time. If the baby stayed less than one day, enter 0.
 ____ (3 spaces) [Min: 0 Max: 394]
 DK, RF
 Coverage: Respondents whose baby was born in a hospital, clinic or birthing centre and whose baby did not go home with them when they were discharged

PP_Q15B Was that in days, weeks or months?
 1 Days
 2 Weeks
 3 Months
 DK, RF
 Coverage: Respondents whose baby was born in a hospital, clinic or birthing centre and whose baby did not go home with them when they were discharged

PP_C16 If VSB_Q07 = 1 (Male) (Go to PP_Q16)
 Else (Go to PP_R19)

PP_Q16 Was ^baby's name circumcised?
 1 Yes
 2 No
 DK, RF
 Coverage: Respondents whose baby was male

PP_Q17 What was the main reason ^baby's name was circumcised? Was it for...?
 INTERVIEWER: Read categories to respondent.
 1 Religious reasons
 2 Health or hygiene reasons
 3 To be like his dad or brother
 4 To be like other boys
 5 Other reasons
 6 DK, RF
 Coverage: Respondents whose baby was circumcised

Maternity Experiences Survey, 2006
Questionnaire

PP_Q19D Once again, the questions refer to your pregnancy, labour and birth, and immediate postpartum experience. Overall, how satisfied or dissatisfied were you with...

...the concern of your healthcare providers for your privacy and dignity?

INTERVIEWER: Read categories to respondent.

- 1 Very satisfied
- 2 Somewhat satisfied
- 3 Neither satisfied nor dissatisfied
- 4 Somewhat dissatisfied
- 5 Very dissatisfied
- DK, RF

Coverage: All respondents

PP_Q19E Please think back to your entire pregnancy, labour and birth, and immediate postpartum experience. Overall, how satisfied or dissatisfied were you with...

...the respect shown to you by your healthcare providers?

- 1 Very satisfied
- 2 Somewhat satisfied
- 3 Neither satisfied nor dissatisfied
- 4 Somewhat dissatisfied
- 5 Very dissatisfied
- DK, RF

Coverage: All respondents

PP_Q19F Please think back to your entire pregnancy, labour and birth, and immediate postpartum experience. Overall, how satisfied or dissatisfied were you with...

...your involvement in decision making with your healthcare providers?

- 1 Very satisfied
- 2 Somewhat satisfied
- 3 Neither satisfied nor dissatisfied
- 4 Somewhat dissatisfied
- 5 Very dissatisfied
- DK, RF

Coverage: All respondents

PP_End End of Section

Section: Breastfeeding (BF)

BF_BEG Beginning of section

BF_R01 The next few questions are about your experiences feeding ^baby's name.

Maternity Experiences Survey, 2006
Questionnaire

BF_Q01 Prior to giving birth, did you intend to feed ^baby's name by formula alone, breastfeeding alone or a combination of both?

- 1 Formula feeding alone
- 2 Breastfeeding alone (including pumping breast milk)
- 3 A combination of formula and breastfeeding
- DK, RF

Coverage: All respondents

BF_Q02 Did you breastfeed or try to breastfeed ^baby's name even if only for a short time?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

BF_Q03 How long after the birth, was ^baby's name first put to the breast?

- 01 Never (baby was fed with pumped breast milk)
- 02 Immediately or within 5 minutes
- 03 6 minutes to less than 30 minutes
- 04 30 minutes to less than 2 hours
- 05 2 hours to less than 12 hours
- 06 12 hours to less than 24 hours
- 07 24 hours or more
- DK, RF

Coverage: Respondents who breastfed or tried to breastfeed their baby even if only for a short time

BF_Q04 Did your healthcare providers help you or offer to help you start breastfeeding?

INTERVIEWER: This could be during the hospital stay or later.

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

BF_Q05 Did they give you or offer to give you any free formula samples?

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

BF_Q06 If BF_Q02 not equal to 1 (Go to BF_Q06A)
Else (Go to BF_Q06A)

Maternity Experiences Survey, 2006
Questionnaire

BF_Q08C INTERVIEWER: Enter number of months.
____ (2 spaces) [Min: 1 Max: 17]
DK, RF (Go to BF_Q08A)

Default: (Go to BF_Q08A)

Coverage: Respondents who breastfed or tried to breastfeed their baby, and added liquids to baby's feeds, and age of baby when liquids were first added, reported in months

BF_Q08D INTERVIEWER: Enter number of months in this screen and weeks/decimals/fractions in the next.
____ (2 spaces) [Min: 1 Max: 17]
DK, RF (Go to BF_Q08A)

Coverage: Respondents who breastfed or tried to breastfeed their baby, and added liquids to baby's feeds, and age of baby when liquids were first added, reported in months and fractions of a month

BF_Q08E INTERVIEWER: Select number of weeks (decimal/fraction of a month).
1 week (0.25 or ¼ of a month)
2 weeks (0.5 or ½ of a month)
3 weeks (0.75 or ¾ of a month)
4 weeks
DK, RF

Coverage: Respondents who breastfed or tried to breastfeed their baby, and added liquids to baby's feeds, and age of baby when liquids were first added, reported in months and fractions of a month

BF_Q08A In weeks or months, how often was baby's name when solid foods such as cereals, mashed up, puréed vegetables, or fruits were first added to his feeds?
INTERVIEWER: Select one of the response options below.
1 No solids have been added to feeds (Go to BF_C10)
2 Less than one week old (Go to BF_C10)
3 Response in weeks only
4 Response in full months only (Go to BF_Q08C)
5 Response in months and weeks/decimals/fractions (Go to BF_Q08D)
DK, RF (Go to BF_C10)

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

BF_Q06A Did your healthcare providers give you information about community breastfeeding support resources for ongoing help?
1 Yes
2 No
DK, RF

Coverage: Respondents who breastfed or tried to breastfeed their baby even if only for a short time

BF_Q06B In the first week after the birth, did baby's name get a pacifier or soother to suck on?
1 Yes
2 No
DK, RF

Coverage: Respondents who breastfed or tried to breastfeed their baby even if only for a short time

BF_Q07 In the first week after the birth, did you breastfeed baby's name according to a fixed schedule such as every 3 hours, or whenever your baby seemed hungry, or a combination of both?
1 Fixed schedule
2 Whenever baby seemed hungry
3 A combination of both
DK, RF

Coverage: Respondents who breastfed or tried to breastfeed their baby even if only for a short time

BF_Q08A In weeks or months, how often was baby's name when liquids such as water, juice or formula were first added to his feeds?
INTERVIEWER: Select one of the response options below.
1 No other liquids have been added to feeds (Go to BF_Q08A)
2 Less than one week old (Go to BF_Q08A)
3 Response in weeks only (Go to BF_Q08C)
4 Response in full months only (Go to BF_Q08D)
5 Response in months and weeks/decimals/fractions (Go to BF_Q08A)
DK, RF (Go to BF_Q08A)

Coverage: Respondents who breastfed or tried to breastfeed their baby even if only for a short time

BF_Q08B INTERVIEWER: Enter number of weeks.
____ (2 spaces) [Min: 1 Max: 66]
DK, RF (Go to BF_Q08A)

Default: (Go to BF_Q08A)

Coverage: Respondents who breastfed or tried to breastfeed their baby, and added liquids to baby's feeds, and age of baby when liquids were first added, reported in weeks

Maternity Experiences Survey, 2006
Questionnaire

BF_Q11A in weeks or months, how old was ^baby's name when you stopped breastfeeding?

INTERVIEWER: Select one of the response options below.

1 Less than one week old..... (Go to BF_END)
 2 Response in weeks only..... (Go to BF_Q11C)
 3 Response in full months only..... (Go to BF_Q11D)
 4 Response in months and weeks/decimal fractions..... (Go to BF_END)
 DK, RF..... (Go to BF_END)

Coverage: Respondents who stopped breastfeeding

BF_Q11B **INTERVIEWER:** Enter number of weeks.

Responses given with a decimal should be rounded according to standard rounding methods, for example 2.5 weeks becomes 3 weeks.

DK, RF (2 spaces) [Min: 1 Max: 66]

Default: (Go to BF_END)

Coverage: Respondents who stopped breastfeeding, and age of baby when breastfeeding stopped reported in weeks

BF_Q11C **INTERVIEWER:** Enter number of months.

DK, RF (2 spaces) [Min: 1 Max: 17]

Default: (Go to BF_END)

Coverage: Respondents who stopped breastfeeding, and age of baby when breastfeeding stopped reported in months

BF_Q11D **INTERVIEWER:** Enter number of months in this screen and weeks/decimal fractions in the next.

DK, RF (2 spaces) [Min: 1 Max: 17]

Coverage: Respondents who stopped breastfeeding, and age of baby when breastfeeding stopped reported in months and fraction of months

BF_Q1E **INTERVIEWER:** Select number of weeks (decimal/fraction of a month).

1 1 week (0.25 or 1/4 of a month)
 2 2 weeks (0.5 or 1/2 of a month)
 3 3 weeks (0.75 or 3/4 of a month)
 4 4 weeks
 DK, RF

Coverage: Respondents who stopped breastfeeding, and age of baby when breastfeeding stopped reported in months and fraction of months

Maternity Experiences Survey, 2006
Questionnaire

BF_Q09B **INTERVIEWER:** Enter number of weeks.

Responses given with a decimal should be rounded according to standard rounding methods, for example 2.5 weeks becomes 3 weeks.

DK, RF (2 spaces) [Min: 1 Max: 66]

Default: (Go to BF_C10)

Coverage: Respondents who reported in weeks baby's age when solid foods were introduced

BF_Q09C **INTERVIEWER:** Enter number of months.

DK, RF (2 spaces) [Min: 1 Max: 17]

Default: (Go to BF_C10)

Coverage: Respondents who reported in months baby's age when solid foods were introduced

BF_Q09D **INTERVIEWER:** Enter number of months in this screen and weeks/decimal fractions in the next.

DK, RF (2 spaces) [Min: 1 Max: 17] (Go to BF_C10)

Coverage: Respondents who reported in months and fractions of a month baby's age when solid foods were introduced

BF_Q09E **INTERVIEWER:** Select number of weeks (decimal/fraction of a month).

1 1 week (0.25 or 1/4 of a month)
 2 2 weeks (0.5 or 1/2 of a month)
 3 3 weeks (0.75 or 3/4 of a month)
 4 4 weeks
 DK, RF

Coverage: Respondents who reported in months and fractions of a month baby's age when solid foods were introduced

BF_Q10 If BF_Q09E not equal to 1..... (Go to BF_END)
 Else..... (Go to BF_Q10)

BF_Q11 Are you still breastfeeding, even if only occasionally?

1 Yes..... (Go to BF_END)
 2 No..... (Go to BF_END)
 DK, RF..... (Go to BF_END)

Coverage: Respondents who breastfed or tried to breastfeed their baby even if only for a short time

Maternity Experiences Survey, 2006
Questionnaire

BH_S03 Reason it was difficult for respondent to see healthcare provider.
INTERVIEWER: Specify.
____ (80 spaces)

Coverage: Respondents who reported another reason why they found it somewhat difficult or very difficult to see a healthcare provider for their baby

BH_Q04 Not counting the birth, has 'baby's name stayed in a hospital overnight since he was born?

1 Yes
2 No
DK, RF

Coverage: All respondents

BH_Q06A How old was 'baby's name the first time 'he/she required overnight hospitalization?
INTERVIEWER: Enter value only.
____ (3 spaces) [Min: 0 Max: 364] (Go to BH_Q08)
DK, RF

Coverage: Respondents whose baby/has stayed in a hospital overnight since birth

BH_Q08B Was that in days, weeks or months?
1 Days
2 Weeks
3 Months
DK, RF

Coverage: Respondents whose baby/has stayed in a hospital overnight since birth

BH_Q08 Overall, how satisfied or dissatisfied are you with the healthcare 'baby's name has received since he was born?
INTERVIEWER: Read categories to respondent.

1 Very satisfied
2 Somewhat satisfied
3 Neither satisfied nor dissatisfied
4 Somewhat dissatisfied
5 Very dissatisfied
DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

BH_END End of section

Section: Baby at home (BH)

BH_BEG Beginning of section

BH_R01 The next set of questions is about your experiences at home with 'baby's name.

BH_Q01 Since he was born, has 'baby's name needed to see a doctor or other healthcare provider for a problem or illness other than a routine check-up?
INTERVIEWER: This includes taking the baby to the hospital

1 Yes
2 No
DK, RF

Coverage: All respondents

BH_Q02 Overall, how easy or difficult was it to see a healthcare provider for 'baby's name?
INTERVIEWER: Read categories to respondent.

1 Very easy
2 Somewhat easy
3 Neither easy nor difficult
4 Somewhat difficult
5 Very difficult
DK, RF

Coverage: Respondents whose baby/has needed to see a doctor or other healthcare provider for a problem or illness other than a routine check-up since their birth

BH_Q03 Why was it difficult?
INTERVIEWER: Mark all that apply.

01 Doctor/healthcare provider unavailable
02 Respondent didn't have child care
03 Respondent was too busy
04 Respondent didn't have transportation
05 Respondent couldn't take time off work
06 Other - Specify

Coverage: Respondents whose baby/has needed to see a doctor and who found it somewhat difficult or very difficult to see a healthcare provider for their baby

Maternity Experiences Survey, 2006
Questionnaire

MH_Q02 How old, in days, was ^baby's name when a healthcare provider first contacted you at home?

INTERVIEWER: If less than 1 day enter '0'.
____ (3 space) [Min: 0 Max: 364]
DK, RF

Coverage: Respondents who were contacted at home by a healthcare provider to see how they and their baby were doing

MH_Q03 Since ^baby's name was born, have you needed to see a healthcare provider for yourself, other than a routine postpartum visit or check-up?

INTERVIEWER: Lactation consultant (i.e., a professional who helps with breastfeeding) is included as a healthcare provider for the purpose of this question.

- 1 Yes
- 2 No
- DK, RF

All respondents

MH_Q04 Overall, how easy or difficult was it to see a healthcare provider for yourself?

INTERVIEWER: Read categories to respondent.

- 1 Very easy
- 2 Somewhat easy
- 3 Neither easy nor difficult
- 4 Somewhat difficult
- 5 Very difficult
- 6 DK, RF

Coverage: Respondents who needed to see a healthcare provider for themselves, other than a routine postpartum check-up since the birth of their baby

MH_Q05 Why was it difficult?

INTERVIEWER: Mark all that apply.

- 01 Doctor/healthcare provider unavailable
- 02 Respondent didn't have child care
- 03 Respondent was too busy
- 04 Respondent didn't have transportation
- 05 Respondent couldn't take time off work
- 06 Other - Specify _____ (Go to MH_S05)
- DK, RF

Coverage: Respondents who found it somewhat difficult or very difficult to see a healthcare provider for themselves

Maternity Experiences Survey, 2006
Questionnaire

BH_Q07 In the first 4 months after birth, did you usually put ^baby's name down to sleep on...?

INTERVIEWER: Read categories to respondent.

- 1 ^His/her side
- 2 ^His/her back
- 3 ^His/her stomach
- 4 Other position
- DK, RF

Coverage: All respondents

BH_Q08 How would you rate ^baby's name's health, is it...?

INTERVIEWER: Read categories to respondent.

- 1 Excellent
- 2 Very good
- 3 Good
- 4 Fair
- 5 Poor
- 6 DK, RF

Coverage: All respondents

BH_END End of section

Section: Mother at home (MH)

MH_BEG Beginning of Section

MH_Q01 The next few questions are about your contact with healthcare providers during the period following the birth of your child.

MH_Q02 Following the birth, were you contacted at home by a healthcare provider, such as a public health nurse or midwife, to see how you and ^baby's name were doing?

INTERVIEWER: A phone call or home visit by a healthcare provider are considered to be contact.

- 1 Yes
- 2 No
- DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

MH_Q08 During the first 3 months after the birth of 'baby's name, how much of a problem was...

...haemorrhoids due to the birth?

1 Not a problem
2 Somewhat of a problem
3 A great deal of a problem
DK, RF

Coverage: All respondents

MH_Q10 During the first 3 months after the birth of 'baby's name, how much of a problem was...

...urinary incontinence due to the birth?

1 Not a problem
2 Somewhat of a problem
3 A great deal of a problem
DK, RF

Coverage: All respondents

MH_Q11 During the first 3 months after the birth of 'baby's name, how much of a problem was...

...loss of bowel control due to the birth?

1 Not a problem
2 Somewhat of a problem
3 A great deal of a problem
DK, RF

Coverage: All respondents

MH_Q12 During the first 3 months after the birth of 'baby's name, how much of a problem was...

...severe headaches due to the birth?

1 Not a problem
2 Somewhat of a problem
3 A great deal of a problem
DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

MH_Q05 Reason it was difficult for respondent to see healthcare provider.

INTERVIEWER: Specify.
____ (60 spaces)

Coverage: Respondents who reported another reason why they found it somewhat difficult or very difficult to see a healthcare provider for themselves

MH_R06 The next few questions are about physical concerns many women have after giving birth.

MH_Q06 During the first 3 months after the birth of 'baby's name, how much of a problem was...

...pain in the area of your vaginas due to the birth or pain in the area of your caesarean incision?

INTERVIEWER: Read categories to respondent.

1 Not a problem
2 Somewhat of a problem
3 A great deal of a problem
DK, RF

Coverage: All respondents

MH_Q07 During the first 3 months after the birth of 'baby's name, how much of a problem was...

...breast pain?

INTERVIEWER: Read categories to respondent.

1 Not a problem
2 Somewhat of a problem
3 A great deal of a problem
DK, RF

Coverage: All respondents

MH_Q08 During the first 3 months after the birth of 'baby's name, how much of a problem was...

...back pain due to the birth?

1 Not a problem
2 Somewhat of a problem
3 A great deal of a problem
DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

MH_Q16 Do you still have...
...back pain due to the birth?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had a problem with back pain due to the birth during the first 3 months after the birth
MH_Q17 If MH_Q09 = 2 or 3... (Go to MH_Q17)
Else... (Go to MH_C18)
Do you still have...
...hemorrhoids due to the birth?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had a problem with hemorrhoids due to the birth during the first 3 months after the birth
MH_Q18 If MH_Q10 = 2 or 3... (Go to MH_Q18)
Else... (Go to MH_C19)
Do you still have...
...urinary incontinence due to the birth?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had a problem with urinary incontinence due to the birth during the first 3 months after the birth
MH_C19 If MH_Q11 = 2 or 3... (Go to MH_Q19)
Else... (Go to MH_C20)

Maternity Experiences Survey, 2006
Questionnaire

MH_Q13 During the first 3 months after the birth of baby's name, how much of a problem was...
...pain during sex due to the birth?
INTERVIEWER: Read categories to respondent.
1 Not a problem
2 Somewhat of a problem
3 A great deal of a problem
4 Did not have sex in the first 3 months after the birth
DK, RF
Coverage: All respondents
MH_C14 If MH_Q06 = 2 or 3... (Go to MH_Q14)
Else... (Go to MH_C15)
MH_Q14 Do you still have...
...pain in the area of your vagina due to the birth of pain in the area of your cesarean incision?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had a problem with no pain in the area of their vagina or pain in the area of their cesarean incision during the first 3 months after the birth
MH_C16 If MH_Q07 = 2 or 3... (Go to MH_Q15)
Else... (Go to MH_C16)
MH_Q15 Do you still have...
...breast pain?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had a problem with breast pain due to the birth during the first 3 months after the birth
MH_C16 If MH_Q08 = 2 or 3... (Go to MH_Q16)
Else... (Go to MH_C17)

Maternity Experiences Survey, 2006
Questionnaire

MH_Q19 Do you still have...
...loss of bowel control due to the birth?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had a problem with loss of bowel control due to the birth during the first 3 months after the birth

MH_Q20 if MH_Q12 = 2 or 3...
Else...
MH_Q20 Do you still have...
...severe headaches due to the birth?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had a problem with severe headaches due to the birth during the first 3 months after the birth

MH_Q21 if MH_Q13 = 2 or 3...
Else...
MH_Q21 Do you still have...
...pain during sex due to the birth?
INTERVIEWER: We are referring to the birth of the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who had a problem with pain during sex due to the birth during the first 3 months after the birth

MH_Q22 Not counting the labour and the birth, have you stayed in a hospital overnight since 'baby's name was born'?
1 Yes
2 No
DK, RF
Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

MH_Q23A How old was 'baby's name the first time you required overnight hospitalization?
INTERVIEWER: Enter value only.
____ (3 spaces) [Min: 0 Max: 354]
DK, RF (Go to MH_Q24)
Coverage: Respondents who stayed in a hospital overnight since their baby was born

MH_Q23B Was that in days, weeks or months?
1 Days
2 Weeks
3 Months
DK, RF
Coverage: Respondents who stayed in a hospital overnight since their baby was born

MH_Q24 Overall, how satisfied or dissatisfied are you with the healthcare you have received for yourself since 'baby's name was born'?
INTERVIEWER: Read categories to respondent.
1 Very satisfied
2 Somewhat satisfied
3 Neither satisfied nor dissatisfied
4 Somewhat dissatisfied
5 Very dissatisfied
DK, RF
Coverage: All respondents

MH_Q25 Overall, how would you rate your health? Is it...?
INTERVIEWER: Read categories to respondent.
1 Excellent
2 Very good
3 Good
4 Fair
5 Poor
DK, RF
Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

PI_Q04 Did you have enough information...
...about using an infant car seat?
1 Yes
2 No
DK, RF
All respondents
Coverage: PI_Q05
Did you have enough information...
...about possible negative feelings after having a baby such as feelings
of insecurity or unhappy?
1 Yes
2 No
DK, RF
All respondents
Coverage: PI_Q06
Did you have enough information...
...about postpartum depression?
1 Yes
2 No
DK, RF
All respondents
Coverage: PI_Q07
Did you have enough information...
...about bitter feelings after pregnancy, such as when and how you should
use it?
1 Yes
2 No
DK, RF
All respondents
Coverage: PI_Q08
Did you have enough information...
...about changes in your sexual responses and feelings?
1 Yes
2 No
DK, RF
All respondents
Coverage:

Maternity Experiences Survey, 2006
Questionnaire

PI_Q09 Since the birth of baby's name, how often has support been available to
you when you have needed it? Include companionship, assistance and
other types of support you may have needed.
INTERVIEWER: Read categories to respondent.
1 None of the time
2 A little of the time
3 Some of the time
4 Most of the time
5 All of the time
DK, RF
All respondents
Coverage: MI_END
End of Section
Section: PI_REG
Information on the postpartum period (PI)
Beginning of Section
PI_Q01 The next few questions are about information you had about the
postpartum period.
Did you have enough information about each of the following topics...
...the possible effects of having a new baby on your relationship with your
husband or partner?
1 Yes
2 No
DK, RF
All respondents
Coverage: PI_Q02
Did you have enough information...
...about physical demands on your body during the first few months after
having a baby?
1 Yes
2 No
DK, RF
All respondents
Coverage: PI_Q03
Did you have enough information...
...about SIDS, also known as sudden infant death syndrome?
1 Yes
2 No
DK, RF
All respondents
Coverage:

Maternity Experiences Survey, 2006
Questionnaire

Section:	Edinburgh Postnatal Depression Scale (ES)
ES_BEG	Beginning of Section
ES_R01	The next few questions refer to your feelings. For each of the following statements we would like you to choose the response that comes closest to how you have been feeling in the past 7 days, not just how you feel today. Please listen to all responses to each question before selecting your answer.
ES_Q01	During the past 7 days... ...you have been able to laugh and see the funny side of things. INTERVIEWER: Read categories to respondent. 1 As much as you always could 2 Not quite so much now 3 Definitely not so much now 4 Not at all DK, RF Coverage: All respondents
ES_Q02	During the past 7 days... ...you have looked forward with enjoyment to things. INTERVIEWER: Read categories to respondent. 1 As much as you ever did 2 Rather less than you used to 3 Definitely less than you used to 4 Hardly at all DK, RF Coverage: All respondents
ES_Q03	During the past 7 days... ...you have blamed yourself unnecessarily when things went wrong. INTERVIEWER: Read categories to respondent. 1 Yes, most of the time 2 Yes, some of the time 3 Not very often 4 No, never DK, RF Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

PL_Q09	Did you have enough information... ...about how to breastfeed your baby?
1	Yes
2	No DK, RF
Coverage:	All respondents
PL_Q10	Did you have enough information... ...about formula-feeding your baby, such as when to use formula, whether to prepare it?
1	Yes
2	No DK, RF
Coverage:	All respondents
PL_Q11	Who or what was your most useful source of information about the period after the birth of 'baby's name? INTERVIEWER: If respondent says 'doctor,' probe to find out what type of doctor. 01 Previous pregnancy 02 Family or friends 03 Obstetrician/gynecologist 04 Family doctor/general practitioner 05 Midwife 06 Nurse/nurse practitioner 07 Doula 08 Prenatal/childbirth classes 09 Books 10 Internet 11 Other DK, RF (Go to PL_S11)
Default:	(Go to PL_END)
Coverage:	All respondents
PL_S11	What was your most useful source of information about the period after the birth of 'baby's name? INTERVIEWER: Specify. ____ (80 spaces) Coverage: Respondents who reported another source of information that was most useful about the period after the birth of the baby
PL_END	End of Section

Maternity Experiences Survey, 2006
Questionnaire

ES_Q08 During the past 7 days...
...you have felt sad or miserable.
INTERVIEWER: Read categories to respondent.

- 1 Yes, most of the time
- 2 Yes, quite often
- 3 Not very often
- 4 No, not at all

Coverage: All respondents

ES_Q09 During the past 7 days...

...you have been so unhappy that you have been crying.

INTERVIEWER: Read categories to respondent.

- 1 Yes, most of the time
- 2 Yes, quite often
- 3 Only occasionally
- 4 No, never

Coverage: All respondents

ES_Q10 During the past 7 days...

...the thought of harming yourself has occurred to you.

INTERVIEWER: Read categories to respondent.

- 1 Yes, quite often
- 2 Sometimes
- 3 Hardly ever
- 4 Never

Coverage: All respondents

ES_Q11 Before your pregnancy with ^baby's name, had you ever been prescribed anti-depressants or been diagnosed with depression?

- 1 Yes
- 2 No

Coverage: All respondents

ES_END End of Section

Section: Smoking (SM)

SM_REG Beginning of section

Maternity Experiences Survey, 2006
Questionnaire

ES_Q04 During the past 7 days...
...you have felt anxious or worried for no good reason.
INTERVIEWER: Read categories to respondent.

- 1 No, not at all
- 2 Hardly ever
- 3 Yes, sometimes
- 4 Yes, very often

Coverage: All respondents

ES_Q05 During the past 7 days...

...you have felt scared or panicky for no good reason.

INTERVIEWER: Read categories to respondent.

- 1 Yes, quite a lot
- 2 Yes, sometimes
- 3 No, not much
- 4 No, not at all

Coverage: All respondents

ES_Q06 During the past 7 days...

...things have been going on top of you.

INTERVIEWER: Read categories to respondent.

- 1 Yes, most of the time you haven't been able to cope at all
- 2 Yes, sometimes you haven't been coping as well as usual
- 3 No, most of the time you have coped quite well
- 4 No, you have been coping as well as ever

Coverage: All respondents

ES_Q07 During the past 7 days...

...you have been so unhappy that you have had difficulty sleeping.

INTERVIEWER: Read categories to respondent.

- 1 Yes, most of the time
- 2 Yes, sometimes
- 3 Not very often
- 4 No, not at all

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

SM_Q01 Please remember that when we ask about your pregnancy, we are referring to your pregnancy with *your* baby's name. The next questions are about smoking.

SM_Q02 At the present time, do you smoke cigarettes daily, occasionally or not at all?

- 1 Daily (Go to SM_Q03)
- 2 Occasionally (Go to SM_Q04)
- 3 Not at all (Go to SM_Q10)

Coverage: All respondents

SM_Q03 How many cigarettes do you smoke each day?

DK, RF (2 spaces) [Min: 1 Max: 95]

Respondents who at the time of the interview smoked cigarettes daily

SM_Q04 On the days that you do smoke, how many cigarettes do you usually smoke?

DK, RF (2 spaces) [Min: 1 Max: 95]

Respondents who at the time of the interview smoked cigarettes occasionally

SM_Q05 In the three months before your pregnancy, or before you realized you were pregnant, did you smoke daily, occasionally or not at all?

INTERVIEWER: We are referring to the 3 months before the respondent's pregnancy with the selected baby.

- 1 Daily (Go to SM_Q06)
- 2 Occasionally (Go to SM_Q07)
- 3 Not at all (Go to SM_Q10)

Coverage: All respondents

SM_Q06 How many cigarettes did you usually smoke each day?

DK, RF (2 spaces) [Min: 1 Max: 95]

Respondents who in the three months before their pregnancy smoked cigarettes daily

SM_Q07 On the days that you smoked, how many cigarettes did you usually smoke?

DK, RF (2 spaces) [Min: 1 Max: 95]

Respondents who in the three months before their pregnancy smoked cigarettes occasionally

Maternity Experiences Survey, 2006
Questionnaire

SM_Q07 During the last 3 months of your pregnancy, did you smoke daily, occasionally, or not at all?

INTERVIEWER: We are referring to the last 3 months of the respondent's pregnancy with the selected baby.

- 1 Daily (Go to SM_Q09)
- 2 Occasionally (Go to SM_Q10)
- 3 Not at all (Go to SM_Q10)

Coverage: All respondents

SM_Q08 How many cigarettes did you usually smoke each day?

DK, RF (2 spaces) [Min: 1 Max: 95]

Respondents who in the last three months of their pregnancy smoked cigarettes daily

SM_Q09 On the days that you smoked, how many cigarettes did you usually smoke?

DK, RF (2 spaces) [Min: 1 Max: 95]

Respondents who in the last three months of their pregnancy smoked cigarettes occasionally

SM_Q10 During your pregnancy, was there any period of time when you lived with someone who smoked?

INTERVIEWER: We are referring to the respondent's pregnancy with the selected baby.

- 1 Yes
- 2 No

Coverage: All respondents

SM_END End of section

Section: Alcohol (AL)

AL_BEGIN Beginning of section

AL_ROW

Now, some questions about alcohol consumption. When we use the word 'drink' it means one bottle or can of beer or a glass of draft one glass of wine or a wine cooler one drink or cocktail with 1 and 1/2 ounces of liquor.

Maternity Experiences Survey, 2006
Questionnaire

AL_END End of section

Section: Drugs (DR)

DR_BIEG Beginning of section

DR_R01 Now I'm going to ask questions about drug use, specifically street drugs. Again, I would like to remind you that everything you say will remain strictly confidential.

DR_Q01 When I use the term street drugs, I am referring to drugs like marijuana, cocaine, heroin, ecstasy (MDA), snorting glue, gasoline or other solvents.

DR_Q02 In the three months before your pregnancy, or before you realized you were pregnant, did you use any street drugs?

INTERVIEWER: We are referring to the 3 months before the respondent's pregnancy with the selected baby.

1 Yes (Go to DR_Q03)
2 No (Go to DR_Q05)
DK, RF (Go to DR_Q05)

Coverage: All respondents

DR_Q03 How often did you use street drugs?

INTERVIEWER: Read categories to respondent.

1 Less than once a month
2 1 to 3 times a month
3 Once a week
4 More than once a week
5 Everyday
DK, RF (Go to DR_Q05)

Coverage: Respondents who in the three months before their pregnancy used street drugs

DR_Q04 After you realized you were pregnant, did you use street drugs?

INTERVIEWER: We are referring to the respondent's pregnancy with the selected baby.

1 Yes (Go to DR_Q05)
2 No (Go to DR_Q05)
DK, RF (Go to DR_Q05)

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

AL_Q01 In the three months before your pregnancy, or before you realized you were pregnant, how often did you drink alcoholic beverages? (Go to AL_Q03)

01 Was not drinking at the time
02 Less than once a month
03 Once a month
04 2 to 3 times a month
05 Once a week
06 2 to 3 times a week
07 4 to 6 times a week
08 Everyday
DK, RF (Go to AL_END)

Coverage: All respondents

AL_Q02 On the days that you did drink, how many drinks did you usually have? (Go to AL_END)

01 Less than 1 drink
02 1 drink
03 2 drinks
04 3 drinks
05 4 drinks
06 5 or more drinks
DK, RF (Go to AL_END)

Coverage: Respondents who in the three months before their pregnancy were drinking alcoholic beverages

AL_Q03 After you realized you were pregnant, how often did you drink alcoholic beverages?

INTERVIEWER: We are referring to the respondent's pregnancy with the selected baby.

01 Was not drinking at the time/stoppped drinking (Go to AL_END)
02 Less than once a month
03 Once a month
04 2 to 3 times a month
05 Once a week
06 2 to 3 times a week
07 4 to 6 times a week
08 Everyday
DK, RF (Go to AL_END)

Coverage: All respondents

AL_Q04 On the days that you did drink, how many drinks did you usually have?

01 Less than 1 drink
02 1 drink
03 2 drinks
04 3 drinks
05 4 drinks
06 5 or more drinks
DK, RF (Go to AL_END)

Coverage: Respondents who after they realized they were pregnant drank alcoholic beverages

Maternity Experiences Survey, 2006
Questionnaire

RH_Q03 If PREG = 1 or 0 (Go to RH_END)
Else (Go to RH_Q08)

Note: Calculate variable PREG
If RH_Q01 = 1 and RH_Q02 in (1 to 30) then set PREG = value in RH_Q02 - 1
Else if RH_Q01 not equal to 1 and RH_Q02 in (1 to 30) then PREG = value in RH_Q02
Else PREG = 0

RH_Q03 How old were you when you became pregnant for the first time?

INTERVIEWER: Enter age.

____ (2 spaces) [Min: 10 Max: 55]

DK, RF

Coverage: Respondents who have had more than one past pregnancy

RH_Q04 Including the birth of a baby's name, how many times have you given birth to a live baby?

INTERVIEWER: Enter number of live births.

____ (2 spaces) [Min: 1 Max: 30]

DK, RF (Go to RH_END)

Coverage: Respondents who have had more than one past pregnancy

RH_Q05 If BIRTH = 1 (Go to RH_Q08)
If BIRTH > 1 (Go to RH_Q05)
Else (Go to RH_END)

Note: Calculate variable BIRTH
If RH_Q04 in (1 to 30) then set BIRTH = value in RH_Q04
Else BIRTH = 1

RH_Q05 How old were you when you gave birth to a live baby for the first time?

INTERVIEWER: Enter age.

____ (2 spaces) [Min: 10 Max: 55]

DK, RF

Coverage: Respondents who have given birth to more than one live baby

Maternity Experiences Survey, 2006
Questionnaire

DR_Q04 How often did you use street drugs?

INTERVIEWER: Read categories to respondent.

- 1 Less than once a month
- 2 1 to 3 times a month
- 3 Once a week
- 4 More than once a week
- 5 Everyday

DK, RF

Coverage: Respondents who after they realized they were pregnant, used street drugs

DR_Q05 During your pregnancy, before your labour and the birth, did you have enough information about how smoking, drinking or using street drugs could affect your baby?

INTERVIEWER: We are referring to the respondent's pregnancy with the selected baby.

- 1 Yes
- 2 No

DK, RF

Coverage: All respondents

DR_END End of section

Section: Reproductive history (RH)

RH_BEG Beginning of Section

RH_Q01 Next I would like to ask a few questions about your pregnancy history.

RH_Q01 Are you currently pregnant?

- 1 Yes
- 2 No

DK, RF

Coverage: All respondents

RH_Q02 Including your pregnancy with a baby's name, how many times have you been pregnant? This includes pregnancies ending in a miscarriage, abortion, ectopic pregnancy, stillbirth and live birth.

INTERVIEWER: Enter the number of pregnancies.

____ (2 spaces) [Min: 1 Max: 30]

DK, RF

..... (Go to RH_END)

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

RH_C10 If NoBirthPreg2 = 0 (Go to RH_C13)
Else (Go to RH_Q10)

Note: Calculate NoBirthPreg1
NoBirthPreg1 = PREG - BIRTH
Calculate NoBirthPreg2
NoBirthPreg2 = NoBirthPreg1 - STILLBIRTH

RH_Q10 How many pregnancies ended in...
...a miscarriage?
 (2 spaces) [Min: 0 Max: 30]
DK, RF

INTERVIEWER: Blighted ovums are to be counted as a miscarriage.
Enter the number of miscarriages.

Coverage: Respondents who have had fewer five births than pregnancies, other than stillborn birth

RH_C11 If NoBirthPreg3 = 0 (Go to RH_C13)
Else (Go to RH_Q11)

Note: Calculate MISCARRIAGE
If RH_Q10 in (0..30) then MISCARRIAGE = RH_Q10
Else MISCARRIAGE = 0
Calculate NoBirthPreg3 (number of pregnancies not ending in birth, a stillbirth or a miscarriage)
NoBirthPreg3 = NoBirthPreg2 - MISCARRIAGE

RH_Q11 How many pregnancies ended in...
...a tubal or ectopic pregnancy?
 (2 spaces) [Min: 0 Max: 30]
DK, RF

INTERVIEWER: Enter the number of tubal or ectopic pregnancies.

Coverage: Respondents who have had fewer five births than pregnancies, other than stillborn birth and miscarriages

RH_C12 If NoBirthPreg4 = 0 (Go to RH_C13)
Else (Go to RH_Q12)

Note: Calculate ECTOPIC
If RH_Q11 in (0..30) then ECTOPIC = RH_Q11
Else ECTOPIC = 0
Calculate NoBirthPreg4 (number of pregnancies not ending in birth, stillbirth, miscarriage or a tubal pregnancy)
NoBirthPreg4 = NoBirthPreg3 - ECTOPIC

Maternity Experiences Survey, 2006
Questionnaire

RH_Q06 Including the pregnancy with 'baby's name, how many pregnancies ended
in...
...a cesarean birth?
 (2 spaces) [Min: 0 Max: 30]
DK, RF

INTERVIEWER: Enter number of cesarean births.

Coverage: Respondents who have given birth to more than one live baby

RH_Q07 Including the pregnancy with 'baby's name, how many pregnancies ended
...a premature birth, that is, a baby born at less than 37 weeks of
pregnancy?
 (2 spaces) [Min: 0 Max: 30]
DK, RF

INTERVIEWER: Enter number of premature births.

Coverage: Respondents who have given birth to more than one live baby

RH_C08 If BIRTH < PREG (Go to RH_Q08)
Else (Go to RH_C13)

Note: Also User Guide regarding inconsistent answers.
Coverage: Respondents who have given birth to more than one live baby

RH_Q08 How many pregnancies ended in the birth of a stillborn baby?
 (2 spaces) [Min: 0 Max: 30]
DK, RF

INTERVIEWER: Enter number of stillborn births.

Coverage: Respondents who have had fewer five births than pregnancies

RH_C09 If STILLBIRTH = 0 (Go to RH_C10)
Else (Go to RH_Q09)

Note: Calculate STILLBIRTH
If RH_Q08 in (0..30) then STILLBIRTH = RH_Q08
Else STILLBIRTH = 0

RH_Q09 How old were you when you gave birth to a stillborn baby for the first time?
 (2 spaces) [Min: 10 Max: 65]
DK, RF

INTERVIEWER: Enter age.

Coverage: Respondents who have given birth to one or more stillborn babies

Maternity Experiences Survey, 2006
Questionnaire

AV_R010 I am going to read you a list of 10 items. Please tell me whether a spouse or partner or anyone else has done any of the following things to you in the last two years. Again, remember that all responses will be kept strictly confidential.

AV_Q01 In the last two years has anyone ever...
...threatened to hit you with his or her fist or anything else that could have hurt you?

- 1 Yes
- 2 No
- DK, RF
- All respondents

AV_Q02 In the last two years has anyone ever...
...thrown anything at you that could have hurt you?

- 1 Yes
- 2 No
- DK, RF
- All respondents

AV_Q03 In the last two years has anyone ever...
...grabbed or shoved you in a way that could have hurt you?

- 1 Yes
- 2 No
- DK, RF
- All respondents

AV_Q04 In the last two years has anyone ever...
...slapped you?

- 1 Yes
- 2 No
- DK, RF
- All respondents

AV_Q05 In the last two years has anyone ever...
...kicked you, bit you or hit you with his or her fist?

- 1 Yes
- 2 No
- DK, RF
- All respondents

Maternity Experiences Survey, 2006
Questionnaire

RH_Q12 How many pregnancies ended in...
...a therapeutic or induced abortion?

INTERVIEWER: Enter the number of therapeutic or induced abortions.
DK, RF (2 spaces) [Min: 0 Max: 30]

Coverage: Respondents who have had fewer live births than pregnancies, other than stillborn births, miscarriages and fetal or ectopic pregnancies

RH_C13 If BIRTH = 1 (Go to RH_C14)
If BIRTH > 1 and RH_Q08 not equal to nonresponse... (Go to RH_Q13)
Else... (Go to RH_C14)

RH_Q13 Have you ever had a live born baby who subsequently died?

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who have given birth to more than one live baby

RH_Q14 If R1_Q13 = 1 or STILLBIRTH > 0 or MISCARRIAGE > 0 or ECTOPIC > 0 or
ABORTION > 0 (Go to RH_Q14)
Else... (Go to RH_END)

Note: Calculate ABORTION
If RH_Q12 in (0..30) then ABORTION = RH_Q12
Else ABORTION = 0

RH_Q14 Did you receive the support you needed to cope with your loss?

- 1 Yes
- 2 No
- DK, RF

Coverage: Respondents who have given birth to a live baby who subsequently died or had a stillborn baby, miscarriage, or a fetal or ectopic pregnancy or abortion

RH_END End of Section

Section: Abuse and violence (AV)

AV_BEG Beginning of Section

AV_R01A This next set of questions is about acts of physical or sexual violence. It is important to hear from women themselves if we are to understand the very serious problem of physical or sexual violence against women. Your responses are completely confidential and are important whether or not you have had any of these experiences.

Maternity Experiences Survey, 2006
Questionnaire

AV_Q11 If AV_DAV = 0 (Go to AV_END)
Else (Go to AV_Q11)

AV_Q11 What was your relationship to the person who was violent towards you?
Was this person...?

INTERVIEWER: Read categories to respondent. Mark all that apply.

1 Your partner, husband or boyfriend
2 A family member
3 A friend or acquaintance
4 A stranger
5 Other
DK, RF

Coverage: AV_Q12 How many different times did these things happen?
Respondents who have experienced abuse or violence in the last 2 years

01 1 time
02 2 times
03 3 times
04 4 times
05 5 times
06 6 times
07 7 times
08 8 times
09 9 times
10 10 times
11 11 or more times
DK, RF

INTERVIEWER: We are referring to the past 2 years.

Coverage: AV_Q13 Did any of these incidents happen during your pregnancy with baby's name?
Respondents who have experienced abuse or violence in the last 2 years

1 Yes
2 No
DK, RF

(Go to AV_Q15)
(Go to AV_Q15)

Maternity Experiences Survey, 2006
Questionnaire

AV_Q06 In the last two years has anyone ever...
...hit you with something that could have hurt you? Exclude hitting with a fist.

1 Yes
2 No
DK, RF

Coverage: AV_Q07 In the last two years has anyone ever...
...beaten you?

1 Yes
2 No
DK, RF

Coverage: AV_Q08 In the last two years has anyone ever...
...chickened you?

1 Yes
2 No
DK, RF

Coverage: AV_Q09 In the last two years has anyone ever...
...used or threatened to use a gun or knife on you?

1 Yes
2 No
DK, RF

Coverage: AV_Q10 In the last two years has anyone ever...
...forced you into any unwanted sexual activity by threatening you, holding you down, or hurting you in some way?

1 Yes
2 No
DK, RF

Coverage:

INTERVIEWER: Beaten means being hit repeatedly; that is, many times during the same incident.

INTERVIEWER: Chickened you means being intimidated or threatened.

Maternity Experiences Survey, 2006
Questionnaire

AV_Q18 If AV_Q17 = 2 or RF or DK. (Go to AV_Q19)
If AV_Q13 = 2 or RF or DK and (AV_Q15 = 2 or RF or DK). (Go to AV_Q19)
If AV_Q12 = 1. (Go to AV_Q19)
Else. (Go to AV_Q18)

AV_Q19 Since the birth of baby's name, has the violence increased, decreased or stayed the same?
1 Increased
2 Decreased
3 Stayed the same
DK, RF
Coverage: Respondents who experienced abuse or violence before and/or during their pregnancy and after the birth of the baby

AV_Q19 During the last 2 years, did you discuss or receive information about what to do if you were experiencing abuse?
1 Yes
2 No
DK, RF
Coverage: Respondents who have experienced abuse or violence in the last 2 years

AV_END End of Section

Section: Socio-demographic information (SD)

SD_BEG Beginning of Section

SD_R01 The next questions are about your background. Your answers will help us provide a portrait of mothers in Canada.

SD_Q01 In what country were you born?
INTERVIEWER: Please ask respondent to specify her country of birth according to current boundaries.
DK, RF
Coverage: Respondents

SD_Q01 If SD_Q01 = Other-specify. (Go to SD_S01)
Else. (Go to SD_C02)

SD_S01 In what country were you born?
INTERVIEWER: Specify.
____ (80 spaces)
Coverage: Respondents who were born in a country not on the list

Maternity Experiences Survey, 2006
Questionnaire

AV_Q14 Did the person who was violent towards you know you were pregnant at the time of these incidents?
INTERVIEWER: We are referring to the respondent's pregnancy with the selected baby.
1 Yes
2 No
DK, RF
Coverage: Respondents who have experienced abuse or violence during their pregnancy

AV_Q15 If (AV_Q12 = 1 and AV_Q13 = 1). (Go to AV_Q19)
Else. (Go to AV_Q16)

AV_Q15 Did any of these incidents happen before your pregnancy with baby's name?
1 Yes
2 No
DK, RF
Coverage: Respondents who experienced abuse or violence once during their pregnancy, or more than once in the last 2 years

AV_Q16A If AV_Q12 = 1. (Go to AV_Q19)
Else. (Go to AV_Q16B)

AV_Q16B If AV_Q13 = 2 or DK or RF. (Go to AV_Q17)
Else. (Go to AV_Q16)

AV_Q16 During your pregnancy, did the violence increase, decrease or stay the same?
INTERVIEWER: We are referring to the respondent's pregnancy with the selected baby.
1 Increased
2 Decreased
3 Stayed the same
DK, RF
Coverage: Respondents who experienced abuse or violence before and during their pregnancy in the last 2 years

AV_Q17 Did any of these incidents happen since the birth of baby's name?
1 Yes
2 No
DK, RF
Coverage: Respondents who experienced abuse or violence once, but not before and during pregnancy, or more than once in the last 2 years

Maternity Experiences Survey, 2006
Questionnaire

SD_Q07 Are you First Nations, Métis or Inuit?
INTERVIEWER: Mark all that apply. If respondent has already specified the Aboriginal group(s), select the group(s) from list below; if not, ask:
 1 First Nations/North American Indian
 2 Métis
 3 Inuit
 DK, RF
 Respondents who are an Aboriginal person
 Coverage: SD_R08
SD_Q08 What is your ethnic or cultural identity?
INTERVIEWER: Mark all that apply. Mark up to a maximum of 4 ethnic or cultural groups.
 DK, RF
 Note: Maximum of 4 groups can be selected from a list.
 Coverage: All respondents
SD_C08 If SD_Q08 = Other-specify _____ (Go to SD_S08)
 Else _____ (Go to SD_Q09)
SD_S08 What is your ethnic or cultural identity?
INTERVIEWER: Specify _____ (80 spaces)
 Respondents who reported another ethnic or cultural identity other than on the list
 Coverage: SD_Q09
SD_Q09 Thinking back to your entire pregnancy, labour and birth and immediate postpartum experience, were you able to get information and care in a language you speak well enough to conduct a conversation?
 1 Yes _____ (Go to SD_Q11)
 2 No _____ (Go to SD_Q11)
 DK, RF
 Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

SD_Q02 If SD_Q01 = 'Canada' _____ (Go to SD_C06)
 Else _____ (Go to SD_Q02)
SD_Q02 Are you now, or have you ever been, a landed immigrant in Canada?
 1 Yes _____ (Go to SD_Q04)
 2 No
 DK, RF
 Respondents who were not born in Canada
 Coverage: SD_Q03
SD_Q03 Were you born a Canadian citizen?
 1 Yes
 2 No
 DK, RF
 (Go to SD_Q05)
 Respondents who were not born in Canada, and are not now, or have ever been a landed immigrant in Canada
SD_C04 In what year did you first become a landed immigrant in Canada?
INTERVIEWER: Enter the year. If exact year is not known, ask for best estimate.
 _____ (4 spaces) [Min: 1956 Mar: 2006]
 DK, RF
 Respondents who were not born in Canada, and who were or are now a landed immigrant in Canada
 Coverage: SD_Q05
SD_Q05 In what year did you first come to Canada to live?
INTERVIEWER: Enter the year. If respondent moved to Canada more than once, enter the first time she came to live here.
 _____ (4 spaces) [Min: 1950 Mar: 2006]
 DK, RF
 Respondents who were not born in Canada
 Coverage: SD_Q06
SD_Q06 If SD_Q01=Canada, United States or Greenland _____ (Go to SD_Q08)
 Else _____ (Go to SD_R08)
SD_Q08 Are you an Aboriginal person, that is, First Nations, Métis or Inuit?
 1 Yes
 2 No
 DK, RF
 Respondents who were born in Canada, United States or Greenland
 Coverage:

Maternity Experiences Survey, 2006
Questionnaire

SD_Q12 Did you graduate from high school (secondary school)?

1 Yes
2 No
DK, RF

Coverage: Respondents whose highest grade of elementary or high school that they ever completed was the equivalent of grade 11 to grade 13

SD_Q13 Have you received any other education that could be counted towards a degree, certificate or diploma from an educational institution?

1 Yes
2 No
DK, RF

Coverage: Respondents who have received other education that could be counted towards a degree, certificate or diploma from an educational institution

SD_Q14 What is the highest degree, certificate or diploma you have obtained?

01 No post-secondary degree, certificate or diploma
02 Trade certificate or diploma from a vocational school or apprenticeship training
03 Non-university certificate or diploma from a community college, CEGEP, school of nursing, etc.
04 University certificate below bachelor's level
05 Bachelor's degree
06 University degree or certificate above bachelor's degree
DK, RF

Coverage: Respondents who have received other education that could be counted towards a degree, certificate or diploma from an educational institution

SD_Q15 How many years of formal education have you completed starting with grade one and not including repeated years at the same level?

INTERVIEWER: Enter total years of schooling.
(2 places) [Min: 0 Max: 30]
DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

SD_Q10 What languages can you speak well enough to conduct a conversation?

INTERVIEWER: Mark all that apply. Mark up to a maximum of 6 languages.

01 English
02 French
03 Cantonese
04 Mandarin
05 Gujarati
06 Hindi
07 Punjabi
08 Urdu
09 Arabic
10 Persian (Farsi)
11 Korean
12 Tagalog (Philipino)
13 Vietnamese
14 Serbo-Croatian
15 Creole
16 Ojibway
17 Athapaskan (Dene)
18 Inuktitut
19 Other - Specify: (Go to SD_S10)
DK, RF

Default: (Go to SD_Q11)

Note: Maximum of 6 can be selected.

Coverage: Respondents who were able to speak well enough in a language that they speak well enough to conduct a conversation

SD_Q11 What languages can you speak well enough to conduct a conversation?

INTERVIEWER: Mark all that apply. Mark up to a maximum of 6 languages.

01 English
02 French
03 Cantonese
04 Mandarin
05 Gujarati
06 Hindi
07 Punjabi
08 Urdu
09 Arabic
10 Persian (Farsi)
11 Korean
12 Tagalog (Philipino)
13 Vietnamese
14 Serbo-Croatian
15 Creole
16 Ojibway
17 Athapaskan (Dene)
18 Inuktitut
19 Other - Specify: (Go to SD_S10)
DK, RF

Default: (Go to SD_Q11)

Note: Maximum of 6 can be selected.

Coverage: Respondents who were able to speak well enough in a language that they speak well enough to conduct a conversation

SD_Q12 What is the highest grade of elementary or high school you ever completed?

1 Grade 8 or lower (Quebec: Secondary II or lower) (Go to SD_Q13)
2 Grade 9 - 10 (Quebec: Secondary III or IV, Newfoundland and Labrador: 1st year of secondary) (Go to SD_Q13)
3 Grade 11 - 13 (Quebec: Secondary V, Newfoundland and Labrador: 2nd to 4th year of secondary) (Go to SD_Q13)
DK, RF

Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

SD_C16

What is your marital status? Are you...?

INTERVIEWER: Please read categories to respondent. The categories widowed, separated, divorced, and single, apply only to respondents who are not in a common law relationship.

- 01 Married
- 02 Living common law
- 03 Widowed
- 04 Separated
- 05 Divorced
- 06 Single, never married
- DK, RF

(Go to SD_END)
(Go to SD_END)
(Go to SD_END)
(Go to SD_END)
(Go to SD_END)

Coverage:

All respondents

SD_C17

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

INTERVIEWER: Enter year.

DK, RF (4 spaces) [Min: 1968 Max: 2008]

Coverage:

Respondents who are either married or living in a common law relationship

SD_END

End of Section

Section:

Work activities (WA)

WA_BEG

Beginning of Section

WA_R01

The following questions ask about your activities during pregnancy and after baby's lungs are born.

Maternity Experiences Survey, 2006
Questionnaire

WA_Q01

During your pregnancy with baby's name, was your main activity working at a paid job or business, looking for paid work, going to school, caring for children, household work, or something else?

INTERVIEWER: If sickness or short-term illness is reported, ask for usual major activity.

- 01 Working at a paid job or business
- 02 Looking for paid work
- 03 Going to school
- 04 Caring for children
- 05 Household work
- 06 Retired
- 07 Maternity or parental leave
- 08 Long term illness
- 09 Other
- DK, RF

(Go to WA_Q03A)

Default: (Go to WA_Q02)

Coverage: All respondents

WA_S01

During your pregnancy with baby's name, was your main activity working at a paid job or business, looking for paid work, going to school, caring for children, household work, or something else?

INTERVIEWER: Specify.

(80 spaces)

Respondents who reported any main activity during their pregnancy

WA_Q03

Did you work at a paid job or business at any time during your pregnancy?

- 1 Yes
- 2 No
- DK, RF

(Go to WA_R09)
(Go to WA_R09)

Coverage:

Respondents whose main activity during their pregnancy was not working at a paid job or business

WA_Q03A

How many weeks or months pregnant were you with baby's name when you stopped working?

INTERVIEWER: Enter amount only.

(2 spaces) [Min: 1 Max: 42]

DK, RF (Go to WA_Q04)

Respondents who at any time during their pregnancy worked at a paid job or business

Maternity Experiences Survey, 2006
Questionnaire

WA_Q03 Since the birth of baby's twins, have you received maternity or parental benefits paid by employment insurance?
1 Yes
2 No
DK, RF
Coverage: (Go to WA_Q08)

INTERVIEWER: This question refers only to the employment insurance maternity or parental benefits the respondent herself received, not the benefits her husband or partner received.
1 Yes (Go to WA_Q08)
2 No (Go to WA_Q08)
DK, RF
Note: In the province of Quebec, the benefits are paid by the province; in the other provinces, the benefits are paid by employment insurance.
Coverage: Respondents who either have not returned to work or whose baby was at least 2 weeks old when they returned to work

WA_Q07 Were you eligible to receive maternity or parental benefits?
1 Yes
2 No
DK, RF
Coverage: Respondents who have not received benefits although they worked during pregnancy

WA_Q08 If WA_Q04 = 1, what was your main reason for returning to work? Was it...?
1 Because of finances
2 Because you felt it important to you or you wanted to go back to work
3 Because you felt obligated being at home
4 Because you did not want to lose your job
5 Other
6 DK
Coverage: Respondents who have worked at a job or a business since their baby was born
What was your main reason for returning to work?
INTERVIEWER: Read categories to respondent.

WA_S06 What was your main reason for returning to work?
1 Because of finances
2 Because you felt it important to you or you wanted to go back to work
3 Because you felt obligated being at home
4 Because you did not want to lose your job
5 Other
6 DK
Coverage: Respondents who have worked at a job or a business since their baby was born
What was your main reason for returning to work?
INTERVIEWER: Specify.
____ (80 spaces)
Coverage: Respondents who reported another main reason for returning to work

WA_R09 I would now like to ask you about your household income. Again, be assured that your answers will be used for statistical research only and will be kept confidential.

Maternity Experiences Survey, 2006
Questionnaire

WA_Q03B Was it in weeks or months?
1 Weeks
2 Months
DK, RF
Coverage: Respondents who at any time during their pregnancy worked at a paid job or business

WA_Q04 How long did you work at a job or a business since baby's name was born? Please include any paid work.
1 Yes
2 No
DK, RF
Coverage: (Go to WA_Q06)
Respondents who at any time during their pregnancy worked at a paid job or business

WA_Q05A In weeks or months, how old was baby's name when you returned to work?
INTERVIEWER: Enter value only. If less than 1 week, enter 0 weeks.
____ (2 spaces) (Min: 0 Max: 65)
DK, RF
Coverage: (Go to WA_Q06)
Respondents who at any time during their pregnancy worked at a paid job or business and who have worked at a job or a business since their baby was born

WA_Q05B Was that in weeks or months?
1 Weeks
2 Months
DK, RF
Coverage: Respondents who at any time during their pregnancy worked at a paid job or business and who have worked at a job or a business since their baby was born

WA_Q06 If WA_Q05B = 1 and WA_Q05A < 2, file.
Coverage: (Go to WA_Q07)
(Go to WA_Q06)

Maternity Experiences Survey, 2006
Questionnaire

WA_Q13 Do you live in this province?
1 Yes..... (Go to WA_END)
2 No DK, RF..... (Go to WA_END)
Coverage: Respondents who didn't give their postal code or the first 3 digits of their postal code

- WA_Q14 In which province or territory do you live?
10 Newfoundland and Labrador
11 Prince Edward Island
12 Nova Scotia
13 New Brunswick
14 Quebec
15 Ontario
16 Manitoba
17 Saskatchewan
18 Alberta
19 British Columbia
20 Yukon
21 Northwest Territories
22 Nunavut
23 DK, RF
Coverage: Respondents who didn't give their postal code or the first 3 digits of their postal code, and indicated they live in a different province

WA_END End of Section
Section: Permission to Share (P).....
PS_BRG Beginning of Section
PS_Q01 Statistics Canada is conducting this survey on behalf of the Public Health Agency of Canada - formerly part of Health Canada. In order to improve the statistical value of the information, we are asking your permission to share your responses with them.
PS_Q01 The Public Health Agency of Canada has undertaken to keep this information confidential and use it only for statistical purposes. Your and your baby's name, address and telephone number will not be shared.
Do you agree to share the information provided?
1 Yes
2 No DK, RF
Coverage: All respondents

PS_END End of Section
Coverage: All respondents

Maternity Experiences Survey, 2006
Questionnaire

WA_Q09 What is your best estimate of the total income, before taxes and deductions, of all household members from all sources in the past 12 months?
01 Less than \$10,000
02 \$10,000 to less than \$15,000
03 \$15,000 to less than \$20,000
04 \$20,000 to less than \$30,000
05 \$30,000 to less than \$40,000
06 \$40,000 to less than \$50,000
07 \$50,000 to less than \$60,000
08 \$60,000 to less than \$80,000
09 \$80,000 to less than \$100,000
10 \$100,000 to less than \$150,000
11 \$150,000 to less than \$200,000
12 \$200,000 or more
DK, RF
Coverage: All respondents

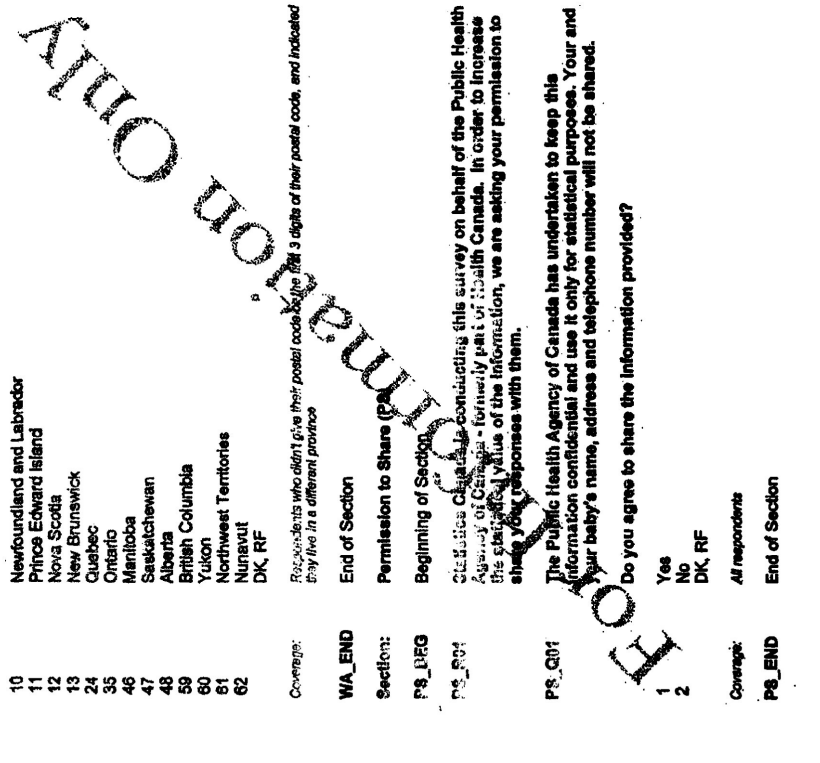
WA_Q10 Including yourself and baby's name, how many people live in this household?
INTERVIEWER: Enter number of people
_____ (2 spaces) [Min: 2 Max: 24]
DK, RF
Coverage: All respondents

WA_Q11 To determine the geographic region you live in, can you tell me your postal code?
INTERVIEWER: Enter postal code
_____ (6 spaces)
DK, RF..... (Go to WA_Q12)
Coverage: All respondents

WA_Q12 What are the first 3 digits of your postal code?
_____ (3 spaces)
DK, RF..... (Go to WA_Q13)
Coverage: All respondents

Default: (Go to WA_END)
Note: At the time of interview.
Coverage: All respondents

Default: (Go to WA_END)
Note: At the time of interview.
Coverage: Respondents who didn't give their postal code



Appendix 2

Variable Recoding of Canadian Maternity Experience Survey

Variable Recoding of Canadian Maternity Experience Survey

Original Question	Original Coding System	Variable Label	Coding System Used in Analyses
Prior to giving birth, did you intend to feed ^baby's name by formula alone, breastfeeding alone, or a combination of both?	1 = formula feeding alone 2 = breastfeeding alone (including pumped breast milk) 3 = a combination of formula and breastfeeding	Breastfeeding Intent	1 = formula feeding alone 2 = a combination of formula and breastfeeding 3 = breastfeeding alone (including pumped breast milk)
Did you breastfeed or try to breastfeed ^baby's name even if only for a short time?	1 = yes 2 = no	Breastfeeding Attempt	Variable not transformed
Age of baby when other liquids were added to feeds (in weeks)	Range: 1 - 29 weeks (when other liquids added) 95 No liquids added	Duration of Exclusive Breastfeeding	Range: 1 - 31 weeks (when other liquids added) 32 = still exclusively breastfeeding
Are you still breastfeeding, even if only occasionally	1 = yes 2 = no	Duration of Any Breastfeeding	Range: 1 - 29 weeks (stopped breastfeeding) 32 = still breastfeeding
In weeks or months, how old was ^baby's name when you stopped breastfeeding	Range = 1 - 29 weeks		
Edinburgh Postnatal Depression Scale	Total score reported	EPDS Score Categories	Variable not transformed 1 = score > 12 2 = score 10 - 12 (inclusive) 3 = score < 10
Since the birth of ^baby's name, how often has support been available to you when you have needed it?	1 = none of the time 2 = a little of the time 3 = some of the time 4 = most of the time 5 = all of the time	Social Support	Variable not transformed

Original Question	Original Coding System	Variable Label	Coding System Used in Analyses
Thinking about the amount of stress in your life during the 12 months before 'baby's name was born, would you say that most days were...?	1 = not stressful 2 = somewhat stressful 3 = very stressful	Stress in Past Year	Variable not transformed
Thinking back to just before you became pregnant, would you say that you wanted to be pregnant...?	1 = sooner 2 = later 3 = then 4 = not at all	Wanted Pregnancy	1 = no (not at all) 2 = yes (sooner, later, then)
Before your pregnancy with 'baby's name, had you ever been prescribed anti-depressants or been diagnosed with depression?	1 = yes 2 = no	Previous depression or antidepressant use	Variable not transformed
At the present time, do you smoke cigarettes daily, occasionally or not at all?	1 = daily 2 = occasionally 3 = not at all	Current Smoker	1 = yes (daily, occasionally) 2 = no (not at all)
After you realized you were pregnant, how often did you drink alcoholic beverages?	1 = was not drinking at the time/stopped drinking 2 = less than once a month 3 = once a month 4 = 2 to 3 times a month 5 = once a week 6 = 2 to 3 times a week 7 = 4 to 6 times a week 8 = everyday	Drinking During Pregnancy	1 = yes (less than once a month to every day) 2 = no (was not drinking at the time/ stopped drinking)
Including the birth of 'baby's name, how many times have you given birth to a live baby?	Range: 1 - 12 live births	Number of Live Births	Variable not transformed
Did the mother experience abuse in the past two years (verbal, physical, sexual)	1 = yes 2 = no	History of Abuse (last two years)	Variable not transformed

Original Question	Original Coding System	Variable Label	Coding System Used in Analyses
Mother's highest level of education completed	0 = grade 8 or lower 1 = grade 9 to 10 2 = grade 11 - 13, non graduate 3 = grade 11 - 13, graduate 4 = some post-secondary education 5 = trades certificate or diploma 6 = community college, CEGEP, etc 7 = university certificate below bachelor's 8 = bachelor's degree 9 = graduate degree (Master's or PhD)	Mother's Education	1 = grade 8 or lower (original score 0) 2 = any high school (original score 1-2) 3 = high school graduate (original score 3) 4 = some post-secondary (original score 4) 5 = college or trade or university certificate (original score 5-7) 6 = university bachelors (original score 8) 7 = graduate degree (original score 9)
What is your marital status?	1 = married 2 = living common law 3 = widowed 4 = separated 5 = divorced 6 = single, never married	Marital Status	1 = married/ common law (original score 1-2) 2 = widowed/separated/ divorced (original score 3-5) 3 = single/never married (original score 6)
Have you returned to work since ^baby's name was born	1 = yes 2 = no	Baby Age Returned to Work	Range: 0 - 31 weeks (Age of baby-responder returned to work) 32 = not working
In weeks or months, how old was ^baby's name when you returned to work?	Range: 0 - 31 in weeks (Age of baby-responder returned to work)		

Original Question	Original Coding System	Variable Label	Coding System Used in Analyses
What is your best estimate of total income, before taxes and deductions, of all household members from all sources in the past 12 months?	1 = Less than \$10000 2 = \$10000 to less than \$15000 3 = \$15000 to less than \$20000 4 = \$20000 to less than \$30000 5 = \$30000 to less than \$40000 6 = \$40000 to less than \$50000 7 = \$50000 to less than \$60000 8 = \$60000 to less than \$80000 9 = \$80000 to less than \$100000 10 = \$100000 to less than \$150000 11 = \$150000 to less than \$200000 12 = \$200000 or more	Household Income	Variable not transformed
Size of area of residence in which the respondent lives, according to 2001 Census counts.	1 = Rural area 2 = Urban, population less than 30,000 3 = Urban, population 30,000 to 99,999 4 = Urban, population 100,000 to 499,999 5 = Urban, population 500,000 or over	Rural	1 = rural (original score 1) 2 = urban (original score 2-5)