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MATERNAL CONFIDENCE DURING THE POSTPARTUM PERIOD

By

Shannon Mantha

Thesis submitted to the School of Graduate Studies and Research in partial fulfillment of the requirements for the degree of Master of Science in Nursing

University of Ottawa

September 2005

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Acknowledgements

Several key individuals helped me progress through the graduate program, and it is with heartfelt gratitude that I extend thanks to these special individuals.

First and foremost, I would like to thank my thesis supervisor, Dr. Barbara Davies, for her guidance and support throughout the program. Her passion for nursing research and the nursing profession is inspiring and refreshing. Very special thanks to committee members Alwyn Moyer and Katherine Crowe for sharing their nursing expertise, insight and words of encouragement along the way. Additionally, thanks so much for reviewing countless drafts and providing thoughtful feedback. I will be forever indebted to Jennifer Clinch, from the Ottawa Health Research Institute, for forging through stacks of SPSS output with me in an attempt to make sense of it. Her expertise and meticulous eye for detail were much appreciated.

I would like to thank the Public Health Branch at City of Ottawa for conducting the Family-Centred Maternity Care study, as well as Janice Potter from City of Ottawa for all her help with the FCMC dataset. Thanks to Jane Simpson, a nursing leader and strong advocate for nursing research, for facilitating the approval process for obtaining the dataset. The financial support from the Registered Nurses Association of Ontario and workplace support from Joan MacNeil and Tammy DeGiovanni at the Children's Hospital of Eastern Ontario were instrumental in completion of this degree.

A well deserved thanks to my family and friends for their patience, encouragement and advice throughout the program. A special thank-you to my mother, Debbie Mantha, who eagerly reviewed my work, first as a nurse and secondly as a mother. And finally, with enormous thanks to my husband Rob, whose encouragement and support throughout this process have been unwavering. You are my strength.

Abstract

Purpose: To determine the relationship between maternal confidence, maternal characteristics and experiences with nursing support during pregnancy, birth and the postpartum period. Additionally, to describe and compare the maternity experiences of women with low and high confidence levels.

Design: Descriptive study based on secondary analysis of a telephone survey conducted at one week and six weeks postpartum as part of the Family-Centred Maternity Care study.

Setting: The four maternity units in Ottawa, Ontario. A proportionate consecutive sample was drawn from each unit.

Participants: Women ($N = 596$) who returned home with their babies within one week of delivery. A subsample ($n = 74$) of women with low and high confidence scores was also examined.

Methods: Secondary analysis of data using a mixed methods approach of quantitative and qualitative analysis. Chi-square, t-tests, Spearman's rho and ANOVA tests were used to examine relationships between postpartum maternal confidence, women's characteristics and experiences with nursing support during pregnancy, birth and the postpartum period. Additionally, a content analysis of comments made by women with low and high confidence regarding how their maternity care could have been more responsive to their needs was completed.

Results: Multiparas were significantly more confident in the postpartum period than primiparas ($p < 0.0001$), although confidence increased over time for primiparas ($p < 0.0001$) and decreased over time for multiparas ($p < 0.0005$). Mothers who spoke a language other than English or French were significantly less confident caring for themselves at home ($p < 0.0005$) and caring for their baby at home

($p < 0.0001$). Mothers' rating of breastfeeding support in-hospital was significantly positively correlated with confidence breastfeeding upon discharge ($p < 0.0001$). Significant negative correlations were found between number of community services received or sought-out and all confidence measures ($p \leq 0.001$). Women indicated that they would have liked more support from nurses for breastfeeding, infant and self-care. Women with low confidence commented more often on the need for teaching and education in the postpartum period when compared to women with high confidence. Both women with low and high confidence reported lack of nursing support for breastfeeding, although women with low confidence perceived the problem to be related to conflicting nursing advice, and women with high confidence perceived the problem to be related to pressure from nursing staff to breastfeed.

Conclusion: Assessment of parity, cultural background and postpartum maternal confidence level of pregnant and parenting women are recommended. Further research that examines the characteristics and needs of multiparas during pregnancy and the postpartum period is also recommended.

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Definition of Terms

Maternal Confidence – A mother's perception of her ability to care for and understand her infant (Zahr, 1993).

Professional Nursing Support – Teaching, role modeling, encouragement, counseling and problem solving offered by nurses (Hucpey & Morse, 1997).

Twenty-four hour Rooming-in – The practice of keeping mothers and their newborn infants together in the same hospital room during the immediate postpartum period.

Combined Care – During a work shift, the same nurse cares for both the mother and her baby.

Family-Centred Maternity Care (FCMC) / Family-Centred Maternity and Newborn Care (FCMNC) – A process of providing comprehensive and individualized care to mothers and their families during pregnancy, labour and delivery and the postpartum period. With a holistic approach to care, FCMC/FCMNC is responsive to the physical, emotional and psycho-social needs of the woman and her family (Health Canada, 2000).

Perceived Self-efficacy – An individual's beliefs about their capabilities to produce designated levels of performance that exercise influence over specific events in their life. Self-efficacy beliefs determine how individuals feel, think, motivate themselves and behave (Bandura, 1994).

Chapter One

Introduction

Although pregnancy and birth are normal life events, the transition to parenthood is a time of significant change for families. These changes involve adaptation to life with a highly dependent newborn, which can be stressful and overwhelming. The health status of women and children is often used as a benchmark for overall community health, and it has become increasingly evident that multiple factors and experiences determine the health and well-being of women and their families during pregnancy, birth and the postpartum period. Research has shown that the transition to parenthood can put families at increased risk for impaired functioning (Knauth, 2000). Providing adequate and timely support to families during this transition has the potential to increase family coping and wellness, which in turn affects the overall health of the community.

Family-Centred Maternity and Newborn Care (FCMNC) care is defined as a "dynamic process of providing safe, skilled and individualized care that responds to the physical, emotional and psycho-social needs of the woman and her family" (Health Canada, 2000, p. 1.8). As a philosophy of care, FCMNC recognizes the importance of the emotional and psycho-social needs of mothers, and the significant impact that these needs can have on the family unit. FCMNC is translated into daily practice through implementation of policies and best practice guidelines for delivery of care to pregnant and parenting families. Direct practice examples of FCMNC include, but are not limited to, twenty-four hour mother-baby rooming-in, and provision of breastfeeding support offered through home visiting and drop-in clinics.

To achieve a goal of healthy and rewarding pregnancies, births and postpartum experiences for all mothers, babies and families in Canada, Health Canada (2000) developed FCMNC guidelines to assist professionals in planning, implementing and evaluating maternal and newborn programs and services. Research has found that the level of confidence that a mother has in her ability to parent her newborn is significantly related to several aspects of the adaptation to motherhood (Ruchala & James, 1997). In light of this, the guidelines emphasize that through supportive measures, health care providers should aim to strengthen a mother's confidence for caring for herself and her baby. The guidelines, which consist of a compellation of evidence-based recommendations, were also intended as a tool to influence policy development surrounding best practice for care during pregnancy, birth and the postpartum period. Several national and international organizations support the guidelines, including the Canadian Institute of Child Health, the Canadian Coalition for Regionalized Perinatal Care, the Society of Obstetricians and Gynaecologists of Canada, the Canadian Public Health Association, the College of Family Physicians of Canada, the Canadian Nurses Association, the Association of Women's Health, Obstetric and Neonatal Nurses, Canada, and the International Childbirth Education Association.

Family-centred care is not new to the nursing profession, as the provision of holistic care and support is central to nursing practice (Wright & Leahey, 1994). While the nursing of families has taken on various names within the literature, such as family-focused care (Janosik & Miller, 1979) and family systems nursing (Wright & Leahey, 1990), the fact remains that nurses play a key role in the provision of care

and support for mothers and their families. Nurses have direct contact with mothers and their families throughout the transition to parenthood, which is why they are well positioned to provide care and support to mothers and their families. With each nursing support intervention, nurses have the ability to strengthen a mother's confidence and make a significant positive contribution to the experiences of mothers and their families.

Review of the Literature on Maternal Confidence

A review of the literature on maternal confidence for pregnant and parenting women revealed several studies on confidence level in the prenatal period, during labour and delivery and in the postpartum period. The following search engines were used to conduct a comprehensive literature review: CINAHL; Cochrane Database of Systematic Reviews; Digital Dissertation Abstracts; Medline; Proquest Nursing Journals; and PsychINFO. The search terms used included: maternal confidence; prenatal confidence; labour and delivery confidence; birthing confidence; postnatal confidence; postpartum confidence; and parenting confidence. The last literature review on maternal confidence was completed in June 2005.

Maternal confidence can be defined as a mother's perception of her ability to care for and understand her infant (Zahr, 1993). A mother's confidence level has been described as one of the most salient factors in the adaptation to motherhood, and is central to the development of mothering behaviours (Walker, Crain, & Thompson, 1986). Research has linked maternal confidence level with a wide variety of outcomes related to breastfeeding (Dunn, Davies, McCleary, Edwards, & Gaboury, in

press), labour and delivery (Lowe, 1993), and postpartum adjustment (McClennan Reece & Harkless, 1998).

The conceptual development of maternal confidence has been advanced through use of Bandura's (1977) social cognitive theory or theory of Self-Efficacy, which is based on the premise that individuals who perceive themselves as having high self-efficacy for a task are better able to focus their efforts towards mastering the task when compared with individuals who perceive themselves as having low self-efficacy. While this thesis focuses on maternal confidence and not self-efficacy, a brief overview of self-efficacy is provided due to the association between the two concepts. Bandura (1997, p. 3) defines perceived self-efficacy as 'beliefs one holds in one's capabilities to organize and execute the courses of actions required to produce given attainments'. Self-efficacy can be obtained through four main sources; mastery experiences, or past experiences at successful completion of a task: vicarious experience, which entails watching another person successfully perform a task: verbal persuasion, which can involve positive reinforcement from a peer or professional; and physiological and affective state, or signs of vulnerability which can be demonstrated by stress (Bandura, 1997). The terms maternal confidence and self-efficacy are often used interchangeably within the literature with no explanation of the difference between the two. Glidewell and Livert (1992) discuss the difference between confidence and perceived self-efficacy stating that confidence is generally a stable state of certainty that is not situation specific, whereas perceived efficacy is situation specific, varies according to the task at hand and is not a global personality trait. To explain the connection between the two concepts an example is provided; women

who perceive themselves as having high self-efficacy for specific tasks involved in parenting a newborn may be more likely to plan confidently for breastfeeding, infant care and self care, and therefore cope well throughout the transition to parenthood. In accordance with Bandura's theory of Self-Efficacy and the influential affect of mastery experiences, research has found that first-time mothers have lower confidence than multiparas (Ruchala & James, 1997; Zahr, 1991), and that maternal confidence generally increases over time as women become more accustomed to caring for their newborns (Hall, Shearer & Kavangh, 1997).

Research on maternal confidence and breastfeeding demonstrates that confidence is a significant predictor of breastfeeding outcome. Breastfeeding confidence is defined as a woman's perception that she possess the knowledge and skills to breastfeed her infant (Chezem, Friesen, & Boettcher, 2003). A study of 198 women that involved multivariate analysis of 11 psychosocial and demographic variables found prenatal maternal confidence to be predictive of breastfeeding success, with women who described themselves during the prenatal period as *somewhat confident* having three times the risk of weaning compared to women who described themselves as *very confident* (O'Campo, Faden, Gielen & Wang, 1992). Papinczak and Turner (2000) found that high levels of maternal confidence were significantly related to longer duration of breastfeeding ($p = 0.003$). Additionally, Buxton et al (1991) measured maternal confidence for breastfeeding in 187 pregnant women and found that women with low confidence were significantly more likely to discontinue breastfeeding within the first week postpartum when compared to women with high confidence ($p < 0.001$). Chezem et al., 2003) failed to find a significant

correlation between breastfeeding confidence and duration of lactation, although the generalizability of study results was poor due to the small sample ($n = 74$) which consisted entirely of well educated primiparas with above average incomes.

McCarter Spaulding and Kearney (2001) examined maternal confidence as it relates to perception of breast milk supply and found a significant positive correlation ($r = 0.487, p < 0.01$) between confidence levels and breastfeeding success. Strengths of this study included the use of multivariate analyses and use of measurement tools with established content and predictive validity. Research has also linked maternal confidence with early weaning of breastfeeding. Eterm, Votto and Leventhal (2002) studied a low-income population of 64 women, and found that having low confidence for breastfeeding was associated with early termination of breastfeeding. Similarly, a Canadian study found that maternal confidence was the strongest predictor of breastfeeding outcome when compared to family help and professional help. Specifically, women who lacked confidence were significantly more likely to wean by six weeks postpartum than women who were very confident (Dunn et al., in press).

In an attempt to promote conceptual development of breastfeeding confidence, Dennis and Faux (1999) developed an instrument to measure breastfeeding self-efficacy. The Breastfeeding Self-Efficacy scale is based upon Bandura's social cognitive theory (1977) or theory of Self-Efficacy. Using the Breastfeeding Self-Efficacy scale, Dennis and Faux (1999) interviewed a sample of 130 breastfeeding women in-hospital and again at six weeks postpartum. Findings revealed that breastfeeding self-efficacy was significantly related to breastfeeding behaviours at six weeks postpartum ($p < 0.001$). Blyth et al. (2002) used the

Breastfeeding Self-Efficacy scale as a measure of maternal confidence for breastfeeding when they interviewed 300 women at one week and four months postpartum. Their findings revealed that mothers with high breastfeeding self-efficacy were significantly more likely to be breastfeeding exclusively at one week ($p < 0.001$) and four months postpartum ($p < 0.001$) when compared to women with low self-efficacy.

Some studies have examined maternal confidence as it relates to coping during labour and delivery. In a series of studies, Lowe (1987; 1989; 1991) identified maternal confidence level as a predictor of ability to cope with pain during active labour, although her work has been criticized for samples that consist of mainly middle class well educated women (McCrea, Wright & Stringer, 2000). McCrea et al (2000) examined several psychosocial factors that influence personal control in pain relief and found that maternal confidence was not a predictor. The authors of this study noted that there was very little variance for the predictor variables within the multivariate analysis, and that the study should be replicated using a different method of analysis. Stern (1997) examined the relationship between maternal confidence for labour and the use of epidural anesthesia for pain management in 59 primiparas. No statistical significance was found between maternal confidence and epidural use, although the sample size was small and there was no report of power analysis.

Furthermore, research on maternal confidence during the postpartum period has examined confidence level as it relates to adaptation to parenthood and maternal knowledge. Teaching and education offered through prenatal education have been shown to positively affect maternal confidence level (Ford et al., 2001). Additionally,

a study that used an experimental design, with 30 women in the experimental group and 33 women in the control group, found that teaching and education sessions offered to primiparas increased knowledge for infant care and maternal confidence levels (Kuo, Chen, Mao, & Tsou, 2000). McClennan Reece (1992) developed the Parent Expectations Survey (PES) to measure perceived self-efficacy for early parenting. The survey consists of 20 items that measure efficacy for parenting tasks such as recognizing infant feeding cues. When the PES was administered to 105 first-time mothers, mothers with higher self-efficacy during the transition to parenthood had greater confidence in parenting and less stress one year after delivery ($r = 0.4, p < 0.01$). In another study, McClennan Reece and Harkless (1998) used the PES to examine the relationship between self-efficacy, stress and parental adaptation in 85 couples. Findings revealed that self-efficacy at four months postpartum was positively correlated with adaptation to parenthood and decreased stress. When McClennan Reece and Harkless (1998) measured confidence in the prenatal period, they found that it was not an effective predictor of adaptation to parenthood. Perhaps using prenatal confidence as a predictor for adaptation to parenthood is flawed because confidence levels during pregnancy may be influenced by unrealistic expectations before the baby is born, which can be especially true for first-time parents.

Greenberg, Rosenberg and Lind (1973) found that rooming-in, which is the practice of having babies and mothers stay together in the same hospital room, can increase a mother's confidence level. Additionally, rooming-in has been linked with

increased duration of breastfeeding (Enkin et al., 2000) and as previously mentioned, breastfeeding duration is positively correlated with maternal confidence level.

In summary, maternal confidence is an important factor to consider when researching and working with pregnant and parenting women. Research findings indicate that a mother's confidence level plays a key role in breastfeeding initiation and duration, coping with pain during labour and delivery and in the adaptation to parenthood. Despite these findings, there is a paucity of research that describes the actual experiences and characteristics of pregnant and parenting women and how these experiences and characteristics relate to maternal confidence level. More specifically, there is little available data to inform us about which nursing support interventions influence a mother's confidence level. In addition, there is a need for research which describes the characteristics and experiences of women with varying levels of confidence.

The Family-Centred Maternity Care Study

To gain a regional perspective in Ottawa, Ontario, the Family-Centred Maternity Care (FCMC) study examined the multidimensional process of FCMNC during the prenatal period, labour and delivery, the early postpartum period in-hospital, as well as the postpartum period at home. The intention of the study was to determine the level of family-centred care received by pregnant and parenting women within the Ottawa region (Public Health and Long Term Care, 2003). Results of the study revealed that not all women were experiencing key elements of FCMNC. For example, only one third of mothers in the sample reported 24 hour rooming-in with their newborns (Public Health and Long Term Care, 2003). Furthermore, study

results helped identify the need for changes in practice and policy, and provided a baseline for comparison to provincial and national data.

Methods for the FCMC Study

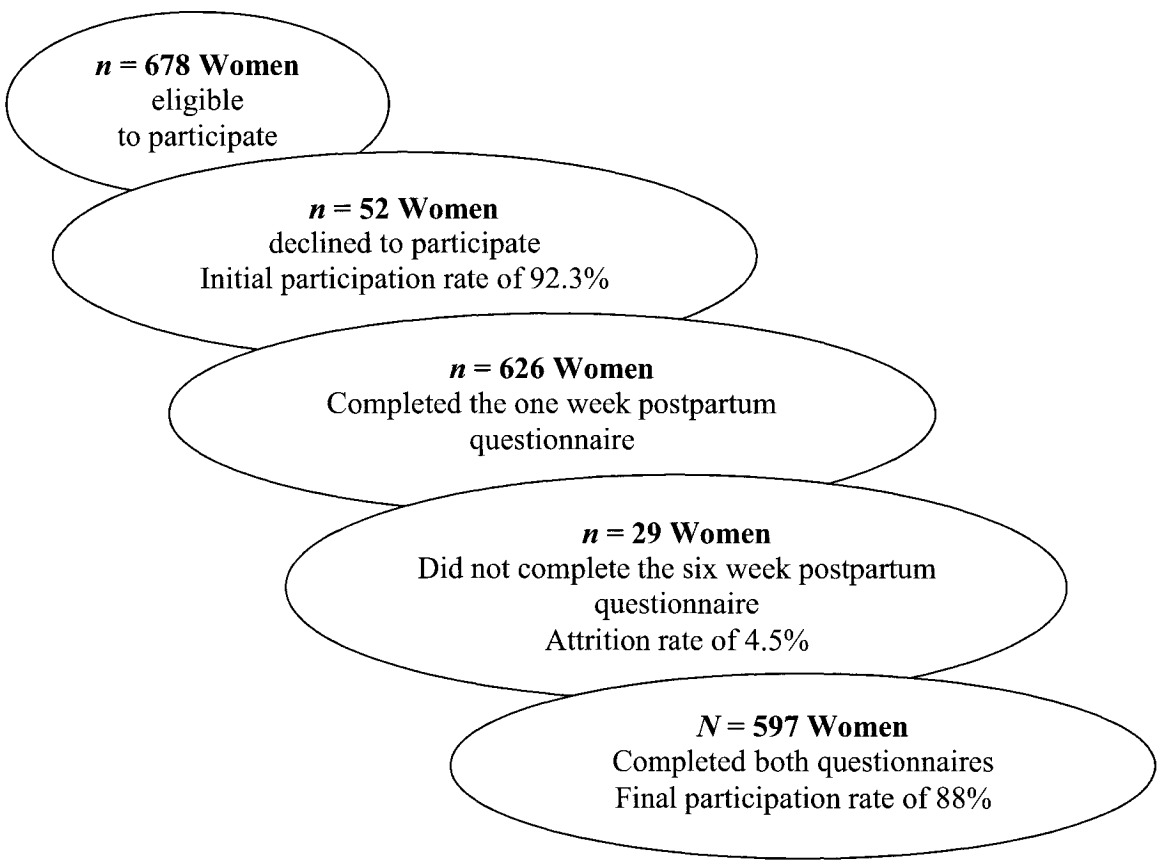
Research design, study setting, sampling procedure and data collection.

The main objective of the FCMC study was to gain an understanding of the pregnancy and postpartum care received by women within hospital and community settings in Ottawa, Ontario (Public Health and Long-term Care, 2003). A prospective longitudinal design was used with data collected by telephone at one week and six weeks postpartum. Women were able to participate if they lived in Ottawa, gave birth in an Ottawa hospital between October 1st, 2000 and March 2001, spoke English or French and were discharged home with their infant (Public Health and Long-term Care, 2003).

The sample for the study was obtained through use of hospital liaison forms called Parkyn Screens, Healthy Baby Healthy Children Screening Tool (Ministry of Health and Long Term Care, 2003). Public Health Nurses (PHNs) use the forms to assess women who give birth in-hospital and who give consent to be contacted by a PHN within two days of discharge. Upon completion of the postpartum telephone assessment, PHNs informed the mother of the FCMC study and asked if they would be willing to participate. Midwives also informed their clients of the study. A trained telephone interviewer then called the mother to explain the study and conduct the interview. The target sample size for the study was 600 women, which was representative of 80% of the 750 births estimated per month in Ottawa. Women from all four maternity units in Ottawa were included within the sample, and once 80% of

the monthly number of births was reached for each unit, recruitment ceased. Women were excluded if they; a) had a stillbirth or their infant had died: b) had an infant with severe life threatening congenital anomalies: c) did not speak English or French: d) did not have a telephone: e) did not permanently reside in Ottawa: and f) had given their infant up for adoption or had their infant apprehended by the Children's Aid Society. A final sample of 597 women was obtained, which yielded a participation rate of 88% (see Figure 1).

Figure 1 Sampling Diagram for the FCMC Study



To collect data, the Family-Centred Maternity and Newborn Care questionnaire was developed. The questionnaire consisted of two sections, the first section was for data collection at one week postpartum and the second for data collection at six weeks postpartum. The questionnaires were based on two previous Canadian surveys on maternity care (Hanvey, Levitt & Chance, 1996; Levitt, Hanvey, Avard, Chance & Kaczorowski, 1995), and were reviewed by a team of experts that included nurse managers, nurse consultants, as well as professors from the faculties of nursing at Queen's University and the University of Ottawa. PHNs working in family health specialties reviewed the questionnaires for content and appropriateness. The one week postpartum questionnaire included questions related to the in-hospital experience for mother, baby and family. The six week postpartum questionnaire collected information about community services and supports within the prenatal and postpartum period, as well as the postpartum experiences of both mother and baby up until six weeks postpartum. Both questionnaires asked mothers' to rate the level of nursing support they received, as well as to rate their level of confidence upon discharge and at six weeks postpartum. Several styles of questions were used including; open and close ended questions, checklists, rating questions in the form of 5-point Likert scales, as well as dichotomous and multiple choice questions.

Ethics approval for the FCMC study was obtained from the Research Ethics Board of the Community Medicine and Epidemiology Unit, Public Health and Long-term Care Branch, City of Ottawa, formerly known as the Regional Municipality of Ottawa Carleton, and now known as Ottawa Public Health. Consent for participation in the study was given to PHNs when they made initial contact with mothers for the

postpartum assessment, and consent was reconfirmed when an interviewer contacted the mother by telephone to explain the study and administer the questionnaire. Interviewers explained that participation was voluntary, and the decision to participate or not participate would not affect the level of care or services offered by Public Health. Anonymity was guaranteed as no names were recorded on the paper copies of the questionnaires. Identification numbers were used for tracking purposes only.

Secondary Analysis of Family-Centred Maternity Care Study Data

The researcher's interest in this topic stems from practice experience as a paediatric nurse working with newborns and their families on an infant medicine unit. While providing nursing care to families, it became apparent that some women were more confident caring for their babies than other women. The reason for this difference in confidence level was intriguing to the researcher and provided the impetus for the following studies on maternal confidence.

The two papers presented within this thesis consist of research findings from a secondary analysis of data collected from the FCMC study conducted in Ottawa, Ontario (Public Health and Long Term Care, 2003). The papers were written for submission to nursing journals that focus on practice and policy issues for nurses and are meant to stand alone.

Chapter two contains the first paper, which has been written for submission to the *American Journal of Maternal Child Nursing* (MCN). MCN's readership includes nurses practicing in perinatal, neonatal, midwifery and pediatric specialties (MCN, 2005). This paper presents a quantitative study that examines women's

characteristics and experiences with professional nursing support during pregnancy, labour and delivery and the postpartum period, and how these variables relate to maternal confidence level during the postpartum period. The title of this paper is *Mothers' Experiences with Professional Nursing Support and Maternal Confidence in the Postpartum Period.*

Chapter three contains the second paper, which will be submitted to *Canadian Nurse*, a nursing journal with a readership of over 120, 000 Canadian nurses (Canadian Nurse, 2005). The title of this paper is *Postpartum Maternal Confidence and Mothers' Account of Family-Centred Maternity Care.* This paper describes a qualitative study that examines women's comments about the prenatal, birth and postpartum care they received both in-hospital and within the community, and how their characteristics and experiences relate to maternal confidence level.

Chapter four includes a summary and conclusion for both papers. Recommendations for practice and policy, education and future research are presented. Limitations and strengths of the studies are reviewed and finally, contributions to knowledge are noted. For the purpose of presenting this thesis as an entire document, all appendices are located at the end of the document and are labeled according to the order in which they occur. Tables and figures are also numbered according to the order in which they occur. Further formatting will be done to each paper in order to meet requirements for submission to the aforementioned journals.

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Chapter Two

MOTHERS' EXPERIENCES WITH PROFESSIONAL NURSING SUPPORT AND MATERNAL CONFIDENCE IN THE POSTPARTUM PERIOD

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Abstract

Purpose: To determine if a mother's characteristics and experiences with nursing support during pregnancy, labour and delivery and the postpartum period are related to postpartum maternal confidence.

Study Design: Descriptive study based on a secondary analysis of survey data from the Family-Centred Maternity Care study conducted in Ottawa, Ontario.

Methods: Examination of the relationship between maternal confidence, women's characteristics (N = 596/88% response rate), and women's experiences with nursing support (prenatal education attendance, labour and deliver support, 24 hr rooming-in, combined nursing care, breastfeeding support, and postpartum community services).

Results: Multiparas' confidence was significantly higher than primiparas' ($p < 0.0001$). Primiparas' confidence increased over time ($p < 0.0001$), while multiparas' confidence decreased ($p < 0.0005$). An interaction was found between parity and 24 hour rooming-in for confidence caring for baby at home ($p = 0.015$). Rating of breastfeeding support was significantly related to confidence breastfeeding upon discharge ($r_s = 0.224$, $p < 0.0001$). Women who received/sought out a greater number of postpartum community services were significantly less confident than women who received/sought out fewer services ($p \leq 0.001$). Women who reported a language other than English or French were significantly less confident caring for themselves ($p < 0.0005$) and their baby at home ($p < 0.0001$).

Clinical Implications: Nursing assessment of maternal confidence level is recommended, with particular attention to parity and cultural background. Including assessment of maternal confidence level in nursing care plans may help identify mothers in need of increased support. Further research is recommended to evaluate supportive interventions for multiparas.

Mothers' Experiences with Professional Nursing Support and Maternal Confidence in the Postpartum Period

Introduction

The World Health Organization declared the theme for the 2005 World Health Day to be the health of mothers and their children. Their slogan, "Make every mother and child count" acknowledges that the health of societies and communities is directly related to the health and well-being of mothers and their children (WHO, 2005).

While becoming a parent is a rewarding experience, it can also be a time of significant risk for mothers, newborns and the family unit (Knauth, 2000). Research has shown that the transition to parenthood often increases parental stress and anxiety which can hinder adjustment to parenthood and decrease family health (Pond & Kemp, 1992). With approximately 330,800 births per year in Canada (Statistics Canada, 2004), it is understandable that the health status of mothers and their infants impacts significantly on the overall health of Canadian communities. Supporting mothers and their families appropriately from pregnancy to the postpartum period provides the foundation for healthy families and healthy communities.

There have been a number of research studies and initiatives examining maternal-infant health in the early postpartum period, and in recognition of the importance of supporting Canadian families through the transition to parenthood, Health Canada (2000) published evidence-based guidelines on Family-Centred Maternity and Newborn Care (FCMNC). The guidelines emphasize FCMNC as an approach to the delivery of maternity care that incorporates the care of a woman and

her family from preconception through to the postpartum period. Maternal confidence is a key concept outlined within the FCMNC guidelines, as it has been shown to be a significant predictor of several outcomes related to postpartum adjustment. The guidelines also highlight the importance of professional nursing support with a family-centred approach, and recognize the influential role that nurses have when providing support to pregnant and parenting families (Health Canada, 2000).

While evidence demonstrates that nursing support during pregnancy, birth and the postpartum period is beneficial to women and their families (Coffman, Levitt & Deets, 1990; Hodnett & Osborn, 1989; Porteous, Kaufman & Rush, 2000), and that a mother's confidence level can affect postpartum adjustment, the relationship between nursing support and maternal confidence remains unclear. A Chinese study found that individualized nursing support increased primiparous mothers' confidence and knowledge of infant care, even though the nursing support offered was limited to one instruction session on infant care (Kuo, Chen, Mao & Tsou, 2000). Several studies have examined the effects of nursing support on specific outcomes such as breastfeeding duration (Porteous et al., 2000), satisfaction with care (Coffman et al., 1991) and coping with labour (Corbett & Callister, 2000), but very few have examined mothers' experiences with nursing support and how these experiences affect confidence level.

Literature Review

Maternal confidence.

Maternal confidence can be defined as a mother's perception of her ability to care for and understand her infant (Zahr, 1993). Maternal confidence has been shown to affect a mother's ability to relate to and care for her baby (McCarter Spaulding & Kearney, 2001; Watters & Kristiansen, 1995). Previous research has correlated high levels of maternal confidence with increased initiation and duration of breastfeeding (Blyth et al., 2002), positive childbirth experience, the experience of less pain during childbirth (Lowe, 1993), and decreased levels of postpartum stress (McClennan Reece & Harkless, 1998). McCarter Spaulding and Kearney (2001) examined maternal confidence as it relates to perception of breast milk supply and found a significant positive correlation ($r = 0.487$, $p < 0.01$) between confidence levels and breastfeeding success. Similarly, a Canadian study found that maternal confidence was the strongest predictor of breastfeeding outcome when compared to family help and professional help. Specifically, women who lacked confidence were significantly more likely to wean by six weeks postpartum than women who were very confident (Dunn, Davies, McCleary, Edwards, & Gaboury, in press).

While previous research has demonstrated that rooming-in can increase a mother's confidence level (Greenberg, Rosenberg & Lind, 1973), recent published research that examines the effect of rooming-in on confidence level could not be found. Despite the lack of current research on rooming-in and confidence, rooming-in has been correlated with increased duration of breastfeeding (Enkin et al., 2000),

and maternal confidence has been found to be a significant predictor of breastfeeding success.

Teaching and education sessions on infant care can increase maternal confidence levels (Kuo et al., 2000), and one study found that receiving instruction through prenatal education increased maternal confidence level (Ford et al., 2001). When McClennan Reece (1998) measured confidence in the prenatal period, she found that it was not an effective predictor of adaptation to parenthood. Perhaps this is due to unrealistic expectations of what the parenting experience will be like. Furthermore, research has found that first-time mothers have lower confidence levels than multiparas (Ruchala & James, 1997; Zahr, 1991), and that maternal confidence generally increases over time as a mother develops the skills necessary to care for her newborn (Hall, Shearer & Kavangh, 1997).

Within the literature, maternal confidence is often measured for specific tasks or competencies, and several researchers have developed scales to measure confidence for breastfeeding (Dennis & Faux, 1999; O'Campo, Faden, Gielen, & Wang, 1992), parenting skills and ability to recognize infant needs (Reece McClennan, 1992; Zahr, 1993), infant care skills (Fromen & Owen, 1989), and as an indicator of milk supply (Hill & Humenick, 1996).

Professional nursing support.

The importance of professional nursing support is well documented within the literature (Farbman-Moran, Holt, Martin, 1997; Nelson, 2003; Ruchala & Halstead, 1994), and support offered by nurses can include teaching, role modeling, encouragement, counseling and problem solving (Hucpey & Morse, 1997). Receipt

of nursing support during pregnancy and the postpartum period can decrease stress and increase coping and adjustment (Collins, Dunkel-Schetter, Lobel & Schrimshaw, 1993; Lazarus & Folkman, 1984).

Studies examining professional support during pregnancy have primarily focused on high-risk women, such as adolescents and low socio-economic groups. Outcomes from these studies link professional support offered during pregnancy with decreased rates of maternal smoking (Norwood, 1994), preterm births and days of infant hospitalization (Koniak-Griffin, Walker & de Traversay, 1996). In a longitudinal study over 15 years, Hayward (1998) studied pregnant women of low socio-economic status and found that home visits by nurses during pregnancy and at two years postpartum decreased incidence of child abuse, dependence on public assistance, and rates of substance abuse, arrests and convictions.

In a study of 103 birthing women, Hodnett and Osborn (1989) examined the impact of continuous intrapartum professional support and found that women who received professional support were less likely to receive pain medication and episiotomies during labour and delivery. In a randomized control trial of 6915 women at 13 U.S. and Canadian hospitals, women favored continuous nursing support during labour when compared to usual labour care (Hodnett, Gates, Hofmeyr & Sakala, 2003).

A Cochrane review on support for breastfeeding mothers concluded that there is clear evidence for the effectiveness of professional support on duration of breastfeeding (Sikorski, Renfrew, Pindoria & Wade, 2002). The literature on breastfeeding support offered by nurses reveals that nursing support plays a crucial

role in the establishment and maintenance of breastfeeding (Janson & Rydberg, 1998; Porteous et al., 2000).

In summary, maternal confidence and nursing support are important factors to consider when caring for pregnant and parenting women. While research has demonstrated that nursing support interventions, such as teaching and education, can increase a mother's confidence level, there is a need for further inquiry into the relationship between different types of nursing support and maternal confidence. The current study describes mothers' experiences with professional nursing support during their pregnancy, labour and delivery and postpartum period, and examines mothers' confidence levels following these experiences with professional nursing support. While women's personal characteristics are generally non-modifiable, each experience with professional nursing support represents an element of care that can be modified to better meet their needs and their family's needs. Learning about women's characteristics and their experiences with nursing support will help determine what elements of support increase a mother's confidence.

Methods

This study is a secondary analysis of data from the Family-Centred Maternity Care (FCMC) study conducted in Ottawa, Ontario. The main objective of the FCMC study was to gain an understanding of the pregnancy and postpartum care received by women within hospital and community settings in Ottawa, Ontario (Public Health and Long-term Care, 2003). Data for the FCMC study was collected by use of a telephone survey at one week and six weeks postpartum. Women were able to participate if they lived in Ottawa, gave birth in an Ottawa hospital between October

1st, 2000 and March 2001, spoke English or French and were discharged home with their infant (Public Health and Long-term Care, 2003). A final sample of 597 women was obtained for the study.

For the secondary analysis, the specific research objectives were:

1. Determine if a mother's experiences with professional nursing support are related to postpartum maternal confidence.
2. Determine if maternal characteristics are related to postpartum maternal confidence.

Based upon previous research findings and review of the literature, the following hypotheses were generated:

1. Primiparas will have lower confidence scores on all measures of maternal confidence when compared to multiparas (Ruchala & James, 1997; Zahr, 1991).
2. Maternal confidence scores will increase over time (from discharge to six weeks postpartum) for both primiparas and multiparas (Hall et al., 1997).
3. Primiparas who attended prenatal education will have higher confidence scores for all measures of maternal confidence (Ford et al., 2001).
4. Primiparas who experienced 24-hour rooming-in will have higher confidence scores for all measures of maternal confidence when compared to primiparas who did not experience 24-hour rooming-in (Greenberg et al., 1973).
5. Women who rated breastfeeding support in-hospital more positively will have higher confidence scores for breastfeeding.

6. Women who received or sought out more community services in the postpartum period will have higher confidence scores than women who received or sought out fewer community services.

Sample, study variables and data management.

The study sample was 596 women due to the exclusion of multiple births ($n = 1$). To address the research questions and study hypotheses, questions from the one and six week questionnaires were used as variables. The definition, timing of each question, and level of measurement for variables are presented in Appendix A. The seven variables used to describe women's characteristics were maternal age, partner status, maternal language, family income, maternal education, parity, and type of delivery. To represent mothers' experiences with professional nursing support the following six variables were chosen: (a) prenatal education attendance; (b) rating of labour and delivery nursing support; (c) 24-hour rooming-in; (d) combined nursing care; (e) rating of breastfeeding support in-hospital; and (f) community services received or sought out up to six weeks postpartum. These variables were chosen because they represent elements of supportive care offered by nurses from pregnancy and up to six weeks postpartum. It should be noted that the labour and delivery and breastfeeding support variables were designed as rating questions, while the remaining variables for professional nursing support were dichotomous with yes/no categories.

Maternal confidence was measured using four questions from the FCMC study questionnaire (see Figure 2). Two of the questions measured maternal confidence upon discharge from hospital, and the other two measured confidence

during the first six weeks at home. The confidence questions were designed as 5-point Likert scales anchored by *not at all confident* (1), to *very confident* (5), and provided overall or global measures for maternal confidence for breastfeeding, caring for self and caring for baby. To facilitate comparison of maternal confidence for caring for self and baby upon discharge and at six weeks postpartum, questions c) and d) from Figure 2 were combined to create a single composite score. The composite score could range from 2 (low score) to 10 (high score). The score was divided in half to facilitate comparison with the means of other confidence measures. Scoring Likert data is a common practice in research and is recommended for making discriminations between differences in study sample responses (Polit & Hungler, 1999).

Figure 2 *Confidence Measures from FCMC Questionnaires*

One week postpartum questionnaire;

a) How confident did you feel about caring for yourself and your baby when you were discharged from hospital?

Six week postpartum questionnaire;

b) How confident did you feel about breastfeeding when you were discharged from hospital?

c) How confident have you felt about caring for yourself during your time at home?

d) How confident have you felt about caring for your baby during your time at home?

5-point Likert Scale

1	2	3	4	5
Not at all Confident		*Somewhat Confident*		*Very Confident*

To address the research questions and hypotheses, five of the 13 variables were recoded (see Appendix B). The FCMC dataset was previously audited for accuracy by graduate students. A general audit of 10% of the dataset revealed an error rate of 0.00014 (Dunn, 2003), and another audit of 10% of selected variables (parity, type of birth, age, education, language, rooming-in, combined care) revealed 162 errors in 1260 entries (Lafrance, 2003). All errors were corrected within the dataset. Additionally, the Health Information Analyst at Ottawa Public Health audited the four maternal confidence variables for accuracy.

For the current study there was very little missing data for most variables. One variable, income, had a large amount of missing data, with 10 cases missing and 141 out of 596 refusing to answer the question. For the remaining variables, there was little missing data ranging from 0.16% to 3.5% of all 596 cases. The dataset was obtained in a computer file via e-mail as a copy of the original dataset. The exclusion criterion (exclusion of multiple births $n = 1$) was then applied to the dataset to create the sub sample ($n = 596$) for the secondary analysis.

Data Analysis

Data analysis for the study was completed using the Statistical Package for the Social Sciences (SPSS) version 12.0 for Windows. Consultation regarding statistical testing, power analysis, and presentation of results was obtained from Jennifer Clinch, Biostatistician, Clinical Epidemiology Program, Ottawa Health Research Institute.

All study variables were described using frequencies, percentages and means. The variable of maternal age was described using the mean (M), standard deviation,

(*SD*), and range. To address research questions and hypotheses, relationships between variables were examined by following a decision tree for statistical testing created by the author (see Appendix C). Spearmans rho was used when describing relationships between two ordinal variables or one ordinal variable and a quantitative variable. Independent sample t-tests were used when comparing one ordinal variable to a nominal variable with two categories. The decision to use the t-test statistic rather than the Mann Whitney U test statistic was made since the population distributions of the maternal confidence variables were not consistently similar in shape, which is a violation of Mann Whitney U assumptions. Additionally, the t-test statistic is robust to violations of the assumption of normality, and can be corrected for errors in variance inequality. The Kolmogorov Smirnov (K-S) goodness-of-fit test was used to determine if population distributions were similar in shape. To describe the relationship between a nominal variable and another nominal variable with two or more categories, chi-square tests were used. When cell frequencies were small, Fisher's exact test was used. A one-way ANOVA was used to compare an ordinal variable to a nominal variable with more than two categories. Tukey's honestly significantly different (HSD) post hoc test was used to determine which means were significantly different from one another. A two-way ANOVA was used to test the effects of two independent variables on a dependent variable. To address the hypothesis that maternal confidence increased over time, a paired t-test was used. Where applicable, p values corrected for variance inequality are displayed. Since parity was considered to be a key determinant of maternal confidence level,

relationships variables were examined for the entire sample, as well as separately for primiparas and multiparas.

Statistical power analysis for each type of analysis was calculated following the recommendations and power tables in Cohen's (1988) *Statistical Power Analysis for the Behavioral Sciences* text book. Despite having some directional hypotheses, two-tailed testing was used for all statistical tests. While evidence from the literature provided suggestions relating to the direction of relationships, a conservative approach to testing was taken due to the absence of strong empirical evidence relating to maternal confidence and the research variables. Due to the use of multiple tests and a large sample size, the level of significance for each test was set at $p \leq 0.01$.

Ethical Considerations

This study received ethics approval from the joint Health Sciences and Science Research Ethics Board of the University of Ottawa (see Appendix D). Permission to use the FCMC dataset was granted by the Family Health Division and the Epidemiological Surveillance Unit, People Services, City of Ottawa (see Appendix E), now known as City of Ottawa Public Health Research and Ethics Board. This study did not involve contacting women who participated in the primary study. To maintain anonymity and confidentiality, participants' names and contact information were not available from the dataset.

Results

Description of mothers' characteristics.

The study sample was composed of 50% primiparas and 50% multiparas (see Table 1). The mean age of mothers in the sample was 30.5 years, and the majority

(75.8%) pursued education after high school. More than half of those who answered (53.9%) reported a family income greater than $60, 000 and 94.3% had a current partner. Sixty percent of women indicated English was their first language, while 20.3% reported French, and 19.7% identified a language other than English or French as their first language. Approximately three-quarters (76.5%) of women had a vaginal delivery.

Description of mothers' experiences with professional nursing support.

Women reported the following experiences of professional support based on their interactions with nurses during pregnancy, labour and delivery and the postpartum period (see Table 2). Approximately 39% of mothers attended prenatal education classes, and of these, 72.1% were primiparas and 5.4% were multiparas. Over three-quarters (78.5%) of women reported that they felt very well supported by nursing staff during labour and delivery. Following birth, only one-third (33.6%) of women experienced 24-hour rooming-in with their newborns, and more than three-quarters (82.8%) of women reported having combined nursing care in the postpartum period. Forty-three percent of mothers rated the breastfeeding support they received in-hospital as excellent, while 26.7% of mothers rated support for breastfeeding from poor to good. Primiparas received and/or sought-out the largest number of community services during the postpartum period, with the mean number of services for primiparas being 3.15 and 2.69 for multiparas.

Table 1

Mothers' Characteristics

Characteristic	Primips % *n=298*	Multips % *n=298*	All Women % *N=596*
Maternal Age (mean age (*SD*))	30.4 (5.6)	30.6 (5.1)	30.5 (5.4)
Education			
High school	19.8	28.5	24.1
Some college	5.7	7.1	6.5
Some university	3.7	5.7	4.7
Completed college	23.2	20.1	21.6
Completed university	34.2	27.5	30.9
Postgraduate degree	13.4	11.1	12.2
Language			
English	60.3	59.7	60.0
French	21.2	19.5	20.3
Other	18.5	20.8	19.7
Partner Status			
Has a partner	93.6	95.0	94.3
Does not have partner	6.4	5.0	5.7
Type of Delivery			
Vaginal	72.8	80.2	76.5
Cesarean	27.2	19.8	23.5
Family Income	***n* = 219**	***n* = 226**	***N* = 445**
<$17, 000	7.8	6.6	7.2
$17, 000 to $39, 999	21.4	24.4	22.9
$40, 000 to $59, 999	15.1	16.8	16.0
$60, 000 to $79, 999	44.7	46.0	45.4
$80, 000 or more	11.0	6.2	8.5

Table 2

Mothers' Experiences with Professional Nursing Support

Element of Support	Primips % *n =298*	Multips % *n=298*	All Women % *N=596*
Prenatal Education Classes			
Attended	72.1	5.4	38.8
Did not attend	27.9	94.6	61.2
Rating of Labour & Delivery Support			
1 = Not at all supported	0	1.3	0.7
2	0.6	1.0	0.8
3 = Somewhat supported	6.4	5.1	5.7
4	13.5	15.2	14.3
5 = Very well supported	79.5	77.4	78.5
24-hour Rooming-in			
Had 24 hour rooming-in	33.6	33.7	33.6
Did not have 24 hour rooming-in	66.4	66.3	66.4
Combined Nursing Care			
Had combined care	83.2	82.5	82.8
Did not have combined care	16.8	17.5	17.2
Rating of Breastfeeding Support in-hospital			
1 = Poor	3.5	2.9	3.2
2	5.0	4.9	5.0
3 = Good	16.2	21.0	18.5
4	31.5	29.2	30.4
5 = Excellent	43.8	42.0	42.9
Community Services Received up to Six Weeks Postpartum			
Phone call from PHN	96.6	95.6	96.1
Home visit from PHN	75.5	58.4	66.9
Package of information in mail	65.1	61.1	63.1
Community Services Sought Out up to Six Weeks Postpartum			
Visit to a Well Baby Drop-in	22.8	14.8	18.8
Parent Info Line	36.4	28.2	32.3
Breastfeeding Support Drop-in	18.8	10.1	14.4
Other services	1.0	0.7	0.8
Mean Number of Community Services Received and Sought-Out			
	3.15	2.69	2.92

Note. PHN – Public Health Nurse

Results of hypothesis testing.

As expected, primiparas had lower confidence than multiparas (see Table 3). Mean scores for primiparas were lower than mean scores for multiparas on all measures of maternal confidence. Statistically significant mean differences ($p < 0.0001$) were found for primiparas and multiparas for all confidence measures with the exception of confidence caring for self at home during the first six weeks.

Table 3

Comparison of Maternal Confidence Variables for Primiparas and Multiparas

Maternal Confidence Variables*	**Primips mean (*SD*)**	**Multips mean (*SD*)**	***t* statistic**	***p* value**
1 week questionnaire;				
Caring for self & baby at discharge	**4.06** (*0.86*)	**4.71** (*0.63*)	- 10.36	**< 0.0001**
6 week questionnaire;				
Breastfeeding upon discharge	**3.55** (*1.10*)	**4.34** (*0.93*)	- 8.82	**< 0.0001**
Caring for self at home	**4.26** (*0.83*)	**4.37** (*0.90*)	- 1.61	0.108 [i]
Caring for baby at home	**4.37** (*0.71*)	**4.70** (*0.58*)	- 6.08	**< 0.0001**

*Based on a 5-point Likert scale with 1 = *Not at all confident*, 5 = *Very confident*
[i] With this *n* and 80% power a mean difference of 0.24 could have been detected

Confidence increased over time for primiparas, and decreased over time for multiparas (see Table 4). Specifically, maternal confidence for caring for self and baby increased significantly over time (from discharge to six weeks postpartum) for primiparas ($p < 0.0001$). Mean scores for maternal confidence for multiparas decreased significantly from discharge to six weeks postpartum ($p < 0.0005$).

Table 4

Mean Confidence Scores for Maternal Confidence for Primiparas and Multiparas at Discharge from Hospital and at Six Weeks Postpartum

	Maternal Confidence Variables*			
	1 week questionnaire; Caring for self and baby at discharge **mean (*SD*)**	***6 week questionnaire;*** Caring for self and baby at home **mean (*SD*)**	***t* statistic**	***p* value**
Primips	**4.06** (*0.86*)	**4.32** (*0.68*)	4.76	**< 0.0001**
Multips	**4.71** (*0.63*)	**4.53** (*0.64*)	- 3.71	**< 0.0005**

*Based on a 5-point Likert scale with 1 = *Not at all confident*, 5 = *Very confident*

When examining the entire sample, women who attended prenatal education had lower confidence scores on all measures when compared to women who did not attend (see Table 5). Significant relationships ($p < 0.0001$) were found for all women between prenatal education attendance and maternal confidence for all confidence measures with the exception of caring for self at home during the first six weeks. If primiparas and multiparas were examined separately, no significant differences were found between those who attended prenatal education and those that did not. It should be noted that 215 out of 298 primiparas attended prenatal education while only 16 out of 298 multiparas attended.

Table 5

Prenatal Education Attendance by Parity and for All Women

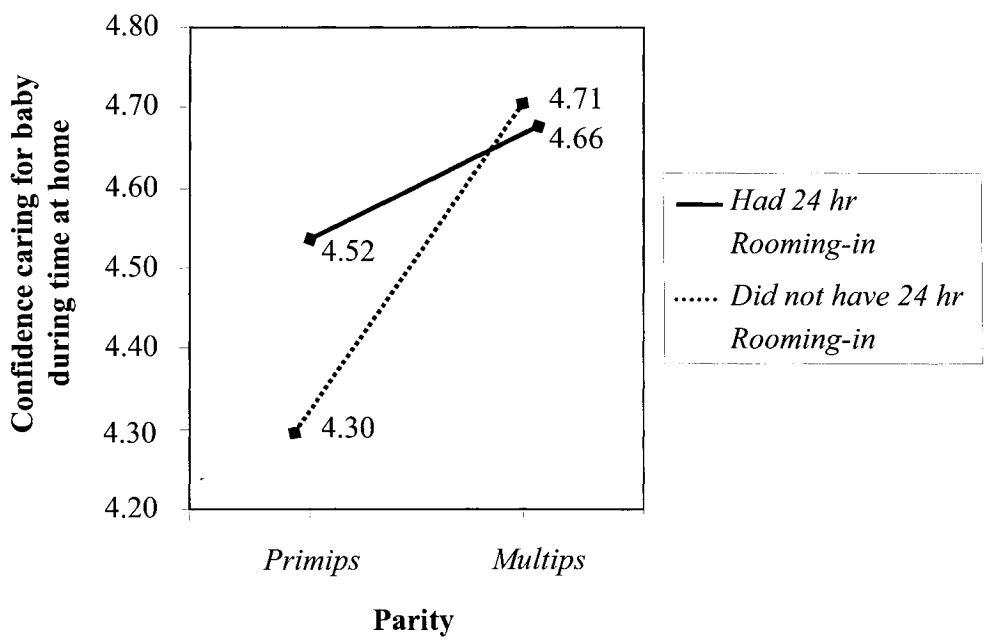
	Prenatal Education Attendance (Yes = Attended/No = Did not Attend)					
Maternal Confidence Variables*	**Primips mean scores (*SD*)**		**Multips mean scores (*SD*)**		**All Women mean scores (*SD*)**	
	YES	**NO**	**YES**	**NO**	**YES**	**NO**
	72.1% *N =215*	**27.9%** *N =83*	**5.4%** *N =16*	**94.6%** *N =281*	**38.8%** *N =231*	**61.2%** *N =364*
1 week questionnaire; Caring for self & baby at discharge	**4.08** (*0.83*)	**4.00** (*0.93*)	**4.56** (*0.63*)	**4.71** (*0.63*)	**4.12** (*0.83*)	**4.55** (*0.77*)
	t= 0.72, p= 0.472		t=-0.93, p= 0.354		t=-6.48, **p< 0.0001**	
6 week questionnaire; Breastfeeding upon discharge	**3.52** (*1.10*)	**3.65** (*1.11*)	**3.93** (*1.00*)	**4.37** (*0.93*)	**3.54** (*1.10*)	**4.21** (*1.02*)
	t= -0.89, p=0.376		t=-1.73, p= 0.086		t=-7.04, **p< 0.0001**	
Caring for self at home	**4.27** (*0.82*)	**4.22** (*0.87*)	**3.81** (*1.33*)	**4.40** (*0.86*)	**4.24** (*0.87*)	**4.36** (*0.87*)
	t= 0.54, p= 0.593		t=-1.76, p= 0.099		t=-1.61, p= 0.107 [i]	
Caring for baby at home	**4.36** (*0.70*)	**4.40** (*0.74*)	**4.69** (*0.79*)	**4.70** (*0.57*)	**4.38** (*0.71*)	**4.63** (*0.62*)
	t=-0.45, p= 0.657		t=-0.59, p= 0.953		t=-4.30, **p< 0.0001**	

* Based on a 5-point Likert scale with 1 = *Not at all confident*, 5 = *Very confident*
[i] With this *n* and 80% power, a mean difference of 0.27 could have been detected

As hypothesized, primiparas who experienced 24-hour rooming-in with their infants were generally more confident than primiparas who did not have 24-hour rooming-in with their infants. Twenty-four hour rooming-in was not related to any measure of maternal confidence for multiparas, or the entire sample, although an

interaction was found between parity and twenty-four hour rooming-in for confidence caring for baby at home during the first six weeks (see Figure 3). The interaction illustrates that the difference in mean confidence scores between rooming-in and not rooming-in for primiparas was much greater than the difference in mean confidence scores between rooming-in and not rooming-in for multiparas, and in the opposite direction.

Figure 3 Interaction Effect Between 24 hour Rooming-in and Parity for Confidence Caring for Baby During Time at Home.*



Note. Interaction of parity and 24-hour rooming-in F (1,587) = 5.99, p = 0.015

Table 6 demonstrates that mothers' rating of breastfeeding support in-hospital was significantly positively related to confidence breastfeeding upon discharge for primiparas ($p < 0.0005$) and multiparas ($p < 0.0001$). Mothers' rating of

breastfeeding support in-hospital was also significantly related to confidence in caring for baby at home for multiparas ($p < 0.0001$) and the entire sample ($p = 0.001$).

Table 6

Maternal Confidence Variables by Mothers' Rating of Breastfeeding Support In-hospital for Primiparas, Multiparas and All Women

	Rating of Breastfeeding Support**		
Maternal Confidence Variables*	**Primips**	**Multips**	**All Women**
1 week questionnaire;			
Caring for self & baby at discharge	$r_s = 0.103$	$r_s = -0.012$	$r_s = 0.038$
	$p = 0.101$[i]	$p = 0.851$[i]	$p = 0.399$[ii]
6 week questionnaire;			
Breastfeeding upon discharge	$r_s = 0.236$	$r_s = 0.280$	$r_s = 0.224$
	$p < 0.0005$	**$p < 0.0001$**	**$p < 0.0001$**
Caring for baby at home	$r_s = 0.073$	$r_s = 0.253$	$r_s = 0.144$
	$p = 0.244$[i]	**$p < 0.0001$**	**$p = 0.001$**

*Based on a 5-point Likert scale with 1= *Not at all confident*, 5 = *Very confident*
**Based on a 5-point Likert scale with 1 = *Poor support*, 5 = *Excellent support*
[i] With this n and 99% power, an r_s value of 0.25 would be required
[ii] With this n and 97% power, an r_s value of 0.20 would be required

Contrary to the hypothesis, women who received or sought out a greater number of postpartum community services had lower maternal confidence scores. All correlations between maternal confidence scores and scores for number of community services received and/or sought out were negative (see Table 7). Using the entire sample, significant negative correlations were found between number of community services received or sought out for all measures of confidence. When looking at primiparas and multiparas separately, only one statistically significant inverse relationship was found. This relationship was between number of community

services received or sought out and confidence breastfeeding upon discharge for multiparas ($r_s = -0.243, p < 0.0005$).

Table 7

Maternal Confidence Variables by Number of Community Services Received or Sought Out (score) for All Women

Maternal Confidence Variables*	**Number of Community Services Received or Sought Out (max score = 7)**	
1 week questionnaire;	r_s	***p* value**
Caring for self & baby at discharge	- 0.137	**0.001**
6 week questionnaire;		
Breastfeeding upon discharge	- 0.247	**< 0.0005**
Caring for self at home	- 0.136	**0.001**
Caring for baby at home	- 0.151	**< 0.0005**

* Based on a 5-point Likert scale with 1 = *Not at all confident*, 5 = *Very confident*

When community services were examined individually by parity, a statistically significant difference was found between the proportion of primiparas and multiparas who received visit from a PHN. Specifically 75.5% of primiparas received a home visit versus 58.4% of multiparas (see Table 8). A statistically significant difference was also found between the proportion of primiparas and multiparas who sought out the services of a breastfeeding support drop-in (18.8% of primiparas versus 10.1% of multiparas) (see Table 9).

Table 8

Community Services Received by Parity

Services Received	Primips % *N = 298*	Multips % *N = 298*	x^2	*p* value
Phone call from PHN	**96.1** *n=286*	**95.6** *n=285*	0.39	0.534*
Visit from PHN	**75.5** *n=225*	**58.4** *n=174*	19.72	**< 0.0001**
Package of Information in mail	**65.1** *n=194*	**61.1** *n=182*	1.04	0.308*

Note. PHN – Public Health Nurse
* See Appendix F for results of power calculations

Table 9

Community Services Sought Out by Parity

Services Sought Out	Primips % *N = 298*	Multips % *N = 298*	x^2	*p* value
Visit to a WBDI	**22.8** *n=68*	**14.8** *n=44*	6.24	0.013*
Phone call to PHIL	**36.4** *n=108*	**28.2** *n=84*	4.55	0.033*
Visit to Breastfeeding Support Drop-in	**18.8** *n=56*	**10.1** *n=30*	9.19	**0.002**
Other	**1.0** *n=3*	**0.7** *n=2*	0.20	1.000*

Note. WBDI – Well Baby Drop-in, PHIL – Public Health Info Line
* See Appendix F for results of power calculations

When individual services and confidence measures were examined for all women, significantly higher mean confidence scores were found for women who did not receive a visit from a PHN versus those that did (see Table 10). Mean scores for

confidence were consistently higher for women who did not receive a PHN visit in both primiparas and multiparas, with the exception of confidence caring for self and baby upon discharge for primiparas (mean scores were the same). For multiparas, there was a statistically significant difference between those that did not receive a visit from a PHN versus those that did for confidence caring for self and baby upon discharge (4.83 versus 4.62, $p = 0.004$), as well as confidence breastfeeding upon discharge (4.65 versus 4.15, $p < 0.0001$).

Table 10

Maternal Confidence Variables by Visit from a Public Health Nurse

	Visit from a PHN (Yes = Received / No = Did not Receive)			
Maternal Confidence Variables*	**All Women** *N = 596* **mean scores (*SD*)**		***t* statistic**	***p* value**
	YES	**NO**		
1 week questionnaire;				
Caring for self & baby at discharge	**4.31** (*0.81*)	**4.54** (*0.81*)	- 3.23	**0.001**
6 week questionnaire;				
Breastfeeding upon discharge	**3.79** (*1.13*)	**4.25** (*0.95*)	- 4.52	**< 0.0001**
Caring for self at home	**4.25** (*0.90*)	**4.46** (*0.78*)	- 2.82	**0.005**
Caring for baby at home	**4.48** (*0.69*)	**4.65** (*0.60*)	- 3.18	**0.002**

*Based on a 5-point Likert scale with 1 = *Not at all confident*, 5 = *Very confident*

When examining confidence scores of all women, significant mean differences were found between those that did not seek out well baby drop-in (WBDI) services and those that did for confidence breastfeeding upon discharge (4.00 versus

3.67, $p = 0.006$) (see Table 11). Mean confidence scores were higher among women who did not attend a WBDI, with the exception of confidence caring for self and baby at discharge for primiparas and multiparas, and confidence caring for self at home and baby at home for multiparas.

Table 11

Maternal Confidence Variables by Visit to a Well Baby Drop-in

	Visit to a Well Baby Drop-in (Yes = Visited / No = Did not Visit)			
Maternal Confidence Variables*	**All Women** *N = 595* **mean scores (*SD*)**		***t* statistic**	***p* value**
	YES	**NO**		
1 week questionnaire;				
Caring for self & baby at discharge	**4.38** (*0.77*)	**4.38** (*0.83*)	- 0.01	0.989[i]
6 week questionnaire;				
Breastfeeding upon discharge	**3.67** (*1.19*)	**4.00** (*1.06*)	- 2.78	**0.006**
Caring for self at home	**4.31** (*0.85*)	**4.32** (*0.87*)	- 0.05	0.963[i]
Caring for baby at home	**4.52** (*0.60*)	**4.54** (*0.68*)	- 0.30	0.767[i]

* Based on a 5-point Likert scale with 1 = *Not at all confident*, 5 = *Very confident*
[i] Mean differences that could have been detected with 80% power, 0.28, 0.31, 0.23

Mean confidence scores for primiparas and multiparas who did not attend a breastfeeding support drop-in were higher when compared with women who did attend (see Table 12). Only one exception was found with primiparas and confidence caring for self and baby at discharge, as mean confidence scores were slightly higher among women who attended a breastfeeding support drop-in versus those that did not

(4.07 versus 4.06). When confidence scores of the entire sample were examined, a statistically significant difference was found between women who did not attend a breastfeeding support drop-in and those that did (4.03 versus 3.46, $p < 0.0001$) for confidence breastfeeding upon discharge. Among multiparas, significant differences were found between those who did not attend a breastfeeding support drop-in and those that did for confidence breastfeeding upon discharge (4.41 versus 3.86, $p = 0.003$).

Table 12

Maternal Confidence Variables by Visit to a Breastfeeding Support Drop-in

Maternal Confidence Variables*	**Visit to a Breastfeeding Support Drop-in (Yes = Attended / No = Did not Attend)**			
	All Women *N = 596* **mean scores (*SD*)**		***t* statistic**	***p* value**
	YES	**NO**		
1 week questionnaire;				
Caring for self & baby at discharge	**4.26** (*0.77*)	**4.41** (*0.82*)	- 1.53	0.127[i]
6 week questionnaire;				
Breastfeeding upon discharge	**3.46** (*1.18*)	**4.03** (*1.06*)	- 4.41	**< 0.0001**
Caring for self at home	**4.09** (*0.97*)	**4.35** (*0.84*)	- 2.59	0.010[i]
Caring for baby at home	**4.40** (*0.72*)	**4.56** (*0.66*)	- 2.11	0.035[i]

* Based on a 5-point Likert scale with 1 = *Not at all confident*, 5 = *Very confident*
[i] Mean differences that could have been detected with 80% power, 0.49, 0.36, 0.28

Of the remaining study variables (variables not included within the hypotheses), only maternal language was significantly related to maternal confidence. When mean confidence scores for all women were examined, confidence caring for

self at home ($F = 11.14$, $p < 0.0005$), and caring for baby at home ($F = 11.72$, $p < 0.0001$) during the first six weeks postpartum were lower if maternal language was a language other than *English* or *French*. Specifically, for confidence caring for self during time at home, mean confidence scores for *English* and *French* were significantly different ($p < 0.0001$ and $p = 0.008$) from the mean confidence scores for *Other*. Similarly, for confidence caring for baby during time at home, mean confidence scores for *English* and *French* were significantly different from the mean confidence scores for *Other* ($p < 0.001$ and $p < 0.001$).

Discussion and Clinical Implications

First-time mothers had less confidence than multiparas. This finding is logical, as one would expect a first-time mother to be less confident with baby care, self-care and feeding when compared to a second or third time mother. Bandura's (1997) theory of Self-Efficacy provides a theoretical basis for this finding, as it proposes that self-efficacy or confidence for a task can be obtained and re-enforced through each successful experience (mastery) completing a task, such as prior experience parenting a newborn. Several researchers have linked maternal confidence with the theory of Self Efficacy (Blyth et al., 2002; Dunn et al., in press; McCarter-Spaulding & Kearney, 2001), and elements of the theory have been drawn on to guide practice interventions such as teaching sessions and screening and assessment tools (Froman & Owen, 1990).

Interestingly, maternal confidence increased from discharge to six weeks postpartum for primiparas, and decreased for multiparas. Maternal confidence has been shown to increase over time when measured in the prenatal and postpartum

period (Blyth et al., 2002), although very few studies have examined and compared postpartum confidence levels of primiparas and multiparas over time. The reason behind multiparas' decrease in confidence is probably due to multiple factors. Multiparas may experience a decrease in confidence during the first six weeks due to difficulty adjusting to an additional and highly dependent infant. Perhaps they have pre-formed expectations related to infant behaviours, and when these expectations do not coincide with actual experiences the existing level of confidence starts to erode. In keeping with the theory of Self-Efficacy, multiparas have previous experience parenting a newborn, although they may be anxious or lack confidence in their ability to care for an additional child and maintain self-care habits. Farbman-Moran et al (1997) examined the postpartum needs of 1161 women, and found that the primary concern for multiparas was integration of the new baby with existing children. Additionally, within this study, multiparas were less likely to attend prenatal education and accessed fewer community services in the postpartum period. It is possible that multiparas were overconfident and felt they did not need additional support because they have been through the parenting experience before.

Since maternal confidence is a strong predictor of breastfeeding success (Blyth et al., 2002; Dunn et al., in press), multiparas with decreasing levels of confidence at six weeks postpartum may be at risk of weaning their infants earlier than the recommended six months of exclusive breastfeeding (WHO, 2001). The majority of research on postpartum women focuses on the needs and characteristics of primiparas, or both primiparas and multiparas. Future research is needed to describe the specific needs, characteristics, and concerns of multiparas during the postpartum

period, and to examine fluctuations in confidence levels of multiparas over time. It may be useful to focus on the specific needs of multiparas, such as parenting support, self-care issues and time management tips. Additionally, study findings warrant consideration of telephone screening by PHNs at six weeks postpartum, which may have identified women with decreased confidence and facilitated referral to appropriate community services. Offering anticipatory guidance to multiparas during pregnancy and the early postpartum period is recommended to help define expectations, prepare for potential challenges encountered in the postpartum period, and work towards finding solutions.

Within this study, women receiving or seeking out a greater number of the available community services were significantly less confident than women who received or sought out fewer services (community services included a phone call from a PHN, a visit from a PHN, receiving package of information in the mail, a visit to a Well Baby/Breastfeeding drop-in, a phone call to the Public Health Info Line, and other services). While causality cannot be determined, it appears that women who were less confident received or sought out community services due to the need for additional support during the postpartum period. Specifically, women with lower confidence had a home visit with a PHN, and attended well baby and breastfeeding support drop-ins more often than women with high confidence. In relation to home visiting, this finding supports the use of the screening tool used by PHNs during the initial 48 hour postpartum telephone call to mothers. Although the screening tool does not measure confidence, it is possible that through use of questions within the tool PHNs were able to identify women who were less confident, and therefore at risk

of early weaning (Dennis, 2002; Dunn et al., in press), decreased adaptation to parenthood and increased stress (Blyth et al., 2002; Lowe, 1993; McClennan Reece & Harkless, 1998). It is also possible that women with decreased confidence were more likely to agree to receive a home visit from a PHN. Additionally, well baby and breastfeeding support drop-ins are services that need to be sought out by mothers. It is a positive finding that women who were feeling less confident were able to access these community services.

Primiparas received or sought out more community services in the postpartum period than multiparas, even though multiparas confidence decreased from discharge to six weeks postpartum. Community services for postpartum women are often targeted at, and attended by primiparas, as research demonstrates that they are generally in need of more support during this time (Matsuura Hong, Callister, & Schwartz, 2003; Tarkka, Paunonen, & Pekka, 1998). Perhaps it was difficult for multiparas to attend available community services with their newborn and other children, or they felt they should be capable and not need support, or the services did not offer the type of support multiparas felt they required. It is reasonable to assume that the needs of first-time mothers differ from those of second or third time mothers. When studying the informational needs of postpartum women, Farbman-Moran et al (1997) found that primiparas requested information about baby care topics, whereas multiparas were more concerned with self-care topics.

It would be interesting to learn if women's confidence increased after receiving or seeking-out community services. Using an assessment tool that includes pre and post maternal confidence measurements would provide nurses with valuable

information about the characteristics of the mother, why she is in need of services, what specific aspects or skills she would like to work on, and if the support provided increased her confidence. Additionally, descriptive research examining what barriers multiparas experience in accessing community services would be helpful in planning community services for these women.

It is very surprising that only a third of women in the sample reported having 24-hour rooming-in with their newborn babies. This finding demonstrates a gap between recommendations from research findings and actual practice, and while practice may have changed from the time of data collection to present, it is important to note the low number of women in the sample who experienced 24-hour rooming-in. First-time mothers who roomed-in with their infants had higher confidence for caring for their newborns during the first six weeks at home when compared to first-time mothers who did not experience 24-hour rooming-in. This finding confirms previous research on rooming-in (Enkin, Keirse, Renfrew, & Neilson, 1995), and supports current policy and best practice for maternity care (Health Canada, 2000; Palda, Guise & Wathen, 2004). Additionally, when parity, rooming-in and confidence level were examined, the experience of rooming-in had a greater effect on confidence levels for primiparas than for multiparas. Published research in support of this finding could not be found, although the majority of research on rooming-in focuses on initiation of breastfeeding and timing of maternal-infant contact rather than maternal confidence level. It is possible that some multiparas do not see rooming-in as a priority, as they have previous experience caring for a newborn, and initiating feeding. Multiparas are often concerned about fatigue in the early

postpartum period (McQueen & Mander, 2003), and may view their time in-hospital as an opportunity for rest prior to returning home. Comparing pre and post rooming-in confidence measurements of primiparas and multiparas would help determine if confidence differs by parity. Pursuit of further research to describe the experiences and perceptions of multiparas regarding 24-hour rooming-in is required.

A review by the Canadian Task Force on Preventative Health Care (Palda et al., 2004) declared that there is good evidence that rooming-in promotes breastfeeding, although the current study found no relationship between rooming-in and breastfeeding confidence upon discharge. Measuring confidence retrospectively at one week postpartum may have decreased women's ability to accurately recall their confidence level upon discharge. Future research using a control group study design to measure the effect of rooming-in on breastfeeding confidence levels is recommended.

Mothers' rating of breastfeeding support received in-hospital was significantly related to confidence breastfeeding upon discharge for both primiparas and multiparas. This finding supports previous work on breastfeeding outcomes and confidence (Dunn et al., in press; McCarter-Spaulding & Kearney, 2001), and demonstrates the significance of nursing support for breastfeeding mothers. Although a causative relationship cannot be determined, it appears that women who felt supported by hospital staff for breastfeeding had higher confidence for breastfeeding upon their discharge. Mothers and nurses often differ in their perceptions of what constitutes adequate breastfeeding support. To feel supported mothers need information and encouragement from nurses, whereas nurses do not always view

encouragement of breastfeeding as their role (Gill, 2001). Dunn et al (in press) recommend exploring innovative strategies to identify personal biases and knowledge deficits that decrease nurses' ability to provide appropriate breastfeeding support. Mothers' rating of nursing support for breastfeeding should be included in postpartum care evaluations, and could potentially be used to screen for early identification of problems with breastfeeding.

For multiparas, confidence caring for baby at home was significantly related to rating of breastfeeding support. Failure to find the same relationship in primiparas may be related to differing perceptions between primiparas and multiparas regarding what constitutes 'caring for baby'. For primiparas, establishing and maintaining infant feeding may account for a larger percentage of their time during the first six weeks at home, whereas multiparas, who have prior feeding experience, may perceive 'caring for baby' as basic baby care tasks, such as bathing and cord care. Defining the term 'caring for baby' with specific tasks would have alleviated this problem.

The FCMC study did not measure breastfeeding confidence during the first six weeks at home. It would have been useful to see if breastfeeding confidence increased over time, and if receipt of breastfeeding support in-hospital, through home visiting or attendance at a breastfeeding support drop-in is related to breastfeeding confidence during the early postpartum period.

As expected, the majority of women who attended prenatal education were first-time mothers. When all women were examined, those who attended prenatal education had significantly lower confidence scores. This finding is likely related to the over-representation of primiparas in the sample, as primiparas generally had lower

confidence and attended prenatal education more often than multiparas. When examined by parity, multiparas who chose to attend prenatal education were consistently less confident than multiparas who did not attend. The FCMNC guidelines recognize multiparas who attend prenatal education as a cohort of women with special needs (Health Canada, 2000), and while there may be several reasons these women chose to attend, possible explanations include: not attending prenatal education with previous pregnancies; having a negative experience with a previous pregnancy; desiring recent prenatal information due to a long time period between pregnancies; being a new immigrant to the city, or being required by an agency, such as the Children's Aid Society, to attend. It is important for prenatal educators to recognize the unique needs and characteristics of multiparas who attend prenatal education, and prenatal curriculum should be based on the principles of adult learning theory (Health Canada, 2000). Adult learning theory respects the mother's previous experiences and builds from these experiences so she can assume control over her own learning (Lorig, 2001). Future research should explore creative methods of delivery of prenatal education for multiparas, such as individualized classes, content and topics focused on common issues faced by multiparas, flexible locations and scheduling to meet the needs of busy families, and the provision of on-site child care.

Women who indicated that the language they first learned was a language other than English or French were significantly less confident in caring for themselves and their baby at home. This finding is concerning and requires further investigation, as the study was conducted in a large urban city with approximately 155, 000 residents, out of a total population of 774, 072, whose mother tongue is a

language other than English or French (Statistics Canada, 2001). Perhaps these women experienced language and cultural barriers when accessing or receiving services, or they did not have a supportive network of family or friends in the city to turn to for help. The beliefs and values of Western culture can differ significantly from those of non-Western culture, specifically with postpartum experiences (Lauderdale, 1999). Previous research has demonstrated that nurses often lack adequate knowledge about the specific cultural beliefs and values of their clients (Cortis, 2004). In Canada, culture is a recognized determinant of health (Health Canada, 2003), and while there has been recent attention to the provision of culturally sensitive nursing care (RNAO, 2005), there is a paucity of research examining the cultural needs, concerns, and experiences of postpartum women in Canadian communities. Nurses working with women of various cultures need to be aware of the importance of culturally competent care, and have the ability to identify their own learning needs and act on increasing their knowledge when required. While nursing best practice guidelines exist for client centred care (RNAO, 2002) and therapeutic relationships (RNAO, 2002), practice guidelines on culturally sensitive care are required. These guidelines would provide a starting point for assessment and evaluation of current practices, and could lead to planning, development and implementation of policies and procedures for culturally competent care.

As in any secondary analysis of data, the limitations from the primary study continue to exist for the secondary study. One limitation was that women were asked to recall experiences and report retrospectively on confidence level. Women may not have recalled information accurately, and experiences from discharge to the time of

data collection may have altered their responses. Due to concerns over the length of the FCMC study questionnaire and time required to complete it, the measures used for maternal confidence were generic, rather than the more common method of using several behaviours to measure a specific task. Using a pre-tested confidence scale with behaviour specific items to measure maternal confidence would have enabled more precise measurement of confidence. In order to measure confidence over time, two confidence measures were combined to create a single question. It would have been desirable to have two separate questions in the primary study to measure confidence over time. The FCMC data set is almost five years old and there is anecdotal evidence that maternity care and practices have changed. However, this does not diminish the importance of studying maternal confidence and experiences with professional support within this population.

The FCMC questionnaire was strength of the study. The questionnaire was based on Health Canada's (2000) FCMNC guidelines, and was written by Louise Hanvey, an expert in the field of women and children's health. A multidisciplinary team reviewed and revised the questionnaires for content, and both questionnaires were pre-tested prior to implementation of the survey. The current study includes a large sample size of 596 women, which is representative of the population in Ottawa and potentially generalizable to other regions with similar demographic characteristics. Additionally, research on maternal confidence has been recognized as an important area of study in maternal child health, and is referred to in key documents like the FCMNC guidelines (Health Canada, 2000), and several research papers (Dunn et al., in press; Lowe, 1993; McCarter-Spaulding & Kearney, 2001;

O'Campo et al., 1992). This paper contributes to the existing body of knowledge on maternal confidence, and adds new information regarding the relationship between maternal confidence, maternal characteristics, and experiences with professional nursing support.

Learning more about mothers' needs, perceptions and characteristics will help to delineate the effect of nursing support on the confidence levels of pregnant and parenting women. As a first step, evaluation of current support systems available to mothers is recommended. Following this evaluation, research on maternal confidence involving multivariate analysis of elements of professional support and women's characteristics is suggested. From this research and inquiry, planning and development of appropriate supportive systems that enable seamless transition from hospital to community is necessary. Nurses are well positioned to assess and be responsive to the special needs of pregnant and parenting women, and through the nursing process have the capacity to tailor supportive activities in their daily practice of caring for mothers and their families.

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Chapter Three

POSTPARTUM MATERNAL CONFIDENCE AND MOTHERS' ACCOUNT OF FAMILY-CENTRED MATERNITY CARE

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Abstract

Purpose: To describe the characteristics and experiences of women regarding care and support received during pregnancy, birth and the postpartum period, and examine these characteristics and experiences as they relate to high and low confidence levels.

Study Design: Descriptive, exploratory study of qualitative survey data from the Family-Centred Maternity Care (FCMC) study.

Methods: Using the FCMC study data set of 596 women, extreme case sampling was used to select a sub sample of 74 women (37 women with high confidence scores and 37 women with low confidence scores). Qualitative data collected from these women regarding how their care could have been more responsive to their needs and their family's needs was subjected to a content analysis.

Results: In general, women's comments indicated that they would have liked more support from nurses regarding breastfeeding, infant care and self-care. Women with low confidence commented more often on the need for teaching and education in the postpartum period. Women with low and high confidence scores commented on lack of nursing support for breastfeeding, although women with low confidence perceived the problem to be related to conflicting advice given by nurses, and women with high confidence perceived the problem to be related to pressure from nurses to breastfeed.

Clinical Implications: Nurses have several opportunities to contribute positively to women's experiences during pregnancy, labour and delivery and the postpartum period. It is recommended that nurses be cognizant of the significant impact of their nursing support interventions and recognize that individual factors, such as confidence level and cultural background, may affect perception of support.

Postpartum Maternal Confidence and Mothers' Account of Family-Centred Maternity Care

Introduction

The transition from pregnancy to parenthood is considered to be one of life's major events, and this period can be a stressful and vulnerable time for mothers and their families. To better support Canadian families through the transition to parenthood, Health Canada (2000) developed multidisciplinary guidelines on Family-Centred Maternity and Newborn Care (FCMNC). These guidelines emphasize caring for women within the context of their family and recognize the significance of peer and professional support during this time. In addition to the national guidelines, the Canadian Perinatal Surveillance System, Health Canada (2003), has recently embarked on a project entitled the Maternity Experiences Survey. The Maternity Experiences Survey acknowledges that women's perceptions of care are an integral component of national perinatal health surveillance (Health Canada, 2003). This survey will be the first of its kind in Canada, and will document women's knowledge, experiences and practices during pregnancy, birth and the early postpartum period.

It is not surprising that a great deal of attention is dedicated to the transition to parenthood, as it has a significant impact on the family unit. Receiving adequate support during this time can decrease stress and promote health and coping in pregnant and parenting women, thereby increasing overall family health (Pond & Kemp, 1992). Nurses have the potential to play a key role in supporting families through the transition to parenthood. Interactions with, and support received from nurses during pregnancy, birth and the postpartum period may influence a mother's

level of confidence, and maternal confidence has been linked to several positive outcomes in the postpartum period (Blyth et al., 2002; Dunn, Davies, McCleary, Edwards, & Gaboury, in press; McClennan Reece & Harkless, 1998).

The researcher's interest in this topic stems from practice experience as a paediatric nurse working with newborns and their families on an infant medicine unit. While providing nursing care to families, it became apparent that some women were more confident caring for their babies than other women. The reasons behind this difference in confidence level were intriguing to the researcher and provided the impetus for the following study.

A Review of the Literature

Maternal confidence, nursing support and adaptation to motherhood.

Maternal confidence has been described as the "driving force" in the adaptation to motherhood (Walker, Crain & Thompson, 1986), and therefore plays a significant role in the transition to parenthood. Maternal confidence can be defined as a mother's perception of her ability to care for and understand her infant (Zahr, 1993).

The FCMNC guidelines emphasize the importance of maternal confidence as it relates to provision of care and support. The guidelines state that a primary goal of postpartum care should be to "support … and strengthen the mother's confidence in herself and in her baby's health and well-being, thus enabling her to fulfill her mothering role …" (Health Canada, 2000, p. 6.5).

Research on maternal confidence and breastfeeding has shown that women who are confident in their ability to breastfeed are generally successful at initiating and maintaining breastfeeding. A Canadian study found that women who are less

confident tend to wean their infants from breastfeeding earlier than women who are very confident. Specifically, women who reported their confidence level at two (out of a possible score of five), were three times more likely to wean than women who were very confident (score of five out of five) (Dunn, 2003).

Lowe (1989) identified a relationship between increased levels of maternal confidence and the experience of less pain during labour. Similarly, Wuitchik, Hessen and Bakal (1991) found that maternal confidence with relaxation techniques was correlated with less pain during early labour. High levels of maternal confidence in the postpartum period are also associated with lower levels of anxiety, less depression, increased self-esteem and coping capacity, as well stronger social relationships (Papinczak & Turner, 2000).

Receiving nursing support during the transition to parenthood has been associated with several positive maternal and infant outcomes including decreased levels of stress during labour and delivery (Chang & Chen, 2000), increased initiation and duration of breastfeeding (Sikorski, Renfrew, Pindoria & Wade, 2002) as well as less behavioural and parental coping problems (Olds, Henderson & Kitzman, 1994). Common examples of nursing support include facilitating prenatal education classes, encouragement during labour, and breastfeeding teaching over the telephone or in-person.

While the importance of nursing support for pregnant and parenting women has been confirmed within the literature, there is a paucity of research that describes women's perceptions of care and support received during pregnancy, labour and delivery and the postpartum period. Despite evidence indicating that maternal

confidence is a significant factor to consider when caring for pregnant and parenting women, very little is known about the characteristics and experiences of women with high and low confidence levels.

Introduction to the Family-Centred Maternity Care (FCMC) Study

The main objective of the FCMC study was to gain an understanding of the pregnancy and postpartum care received by women within hospital and community settings in Ottawa, Ontario (Public Health and Long-term Care, 2003). Data was collected at one week postpartum and again at six weeks postpartum using two questionnaires developed for the study. Women were able to participate if they lived in Ottawa, gave birth in an Ottawa hospital between October 1st, 2000 and March 2001, spoke English or French and were discharged home with their infant (Public Health and Long-term Care, 2003). A final sample of 597 women was obtained for the study.

Women within the FCMC study reported the following experiences with professional support during pregnancy, labour and delivery and the postpartum period. Sixty-one percent of women did not attend prenatal education classes. When examined by parity, attendance at prenatal education classes was comprised of 72.1% first-time mothers, and 5.4% multiparas. Only one-third (33.6%) of women reported 24 hour rooming-in with their newborns, and during their postpartum hospital stay 82.8% reported having one nurse take care of both them and their baby. Over three-quarters of women reported feeling very well supported during labour and delivery, and 44 % rated the breastfeeding support they received in-hospital as excellent (Mantha, Davies, Moyer, Crowe & Clinch, 2005, unpublished raw data).

The average number of community services received or sought-out during the early postpartum period (up to six weeks) for all women was 2.69 services. First-time mothers received or sought-out the largest number of community services ($M = 3.15$), whereas multiparas received or sought-out less services ($M = 2.69$). Upon arriving home almost all (96.1%) women received a phone call from a Public Health Nurse (PHN), and 66.9% received a home visit from a PHN. Nineteen percent of women visited a Well Baby Drop-in during the early postpartum period, 32.3% made a telephone call to the Parent Child Info Line for nursing advice and 14.4% attended a Breastfeeding Support Drop-in (Mantha et al., 2005 unpublished raw data).

In summary, women within the FCMC study experienced several elements of nursing support during pregnancy, labour and delivery and the postpartum period. Using the FCMC study sample, the study presented within this paper describes women's experiences using their own words, and examines these experiences as they relate to low and high confidence levels.

Methods

This study is a content analysis of data collected through the FCMC study questionnaire. As part of the six week questionnaire, women were asked to share any comments they might have regarding how the care they received during pregnancy, birth and the postpartum period could have been more responsive to their needs and their family's needs. Women's responses to this open-ended question provided the qualitative data for the content analysis.

The specific research objectives of this study are:

1. To describe women's experiences regarding how the care and support they received during pregnancy, labour and delivery and the postpartum period could have been more responsive to their needs and their family's needs.
2. To describe women's experiences (with care and support received during pregnancy, labour and delivery and the postpartum period) as they relate to high and low maternal confidence levels.

Within the one week and six week questionnaires, women were asked to report their level of confidence for caring for themselves and their baby upon discharge, as well as during their time at home. These questions were designed as 5-point Likert scales (see Figure 4), and measured overall confidence levels. In the one week questionnaire, confidence caring for self and baby upon discharge was a single measure, whereas in the six week questionnaire, confidence caring for self and confidence caring for baby was measured with two separate questions. In order to create one confidence score at six weeks postpartum for each woman, the two scores were added to create a composite score that could range from a low score of 2, to a high score of 10. Scores of 6 or less on the composite score were categorized as low maternal confidence, and scores of 10 were categorized as high maternal confidence. Composite scores were then divided in half to facilitate comparison to the one week confidence measure.

Figure 4 Confidence Measures from the FCMC Questionnaires

One week postpartum questionnaire;

a) How confident do you feel about caring for yourself and your baby upon discharge?

Six week postpartum questionnaire;

b) How confident have you felt about caring for yourself during your time at home?

c) How confident have you felt about caring for your baby during your time at home?

b) + c) How confident have you felt about caring for yourself and your baby during your time at home? (Confidence composite score for six weeks)

5-point Likert Scale;

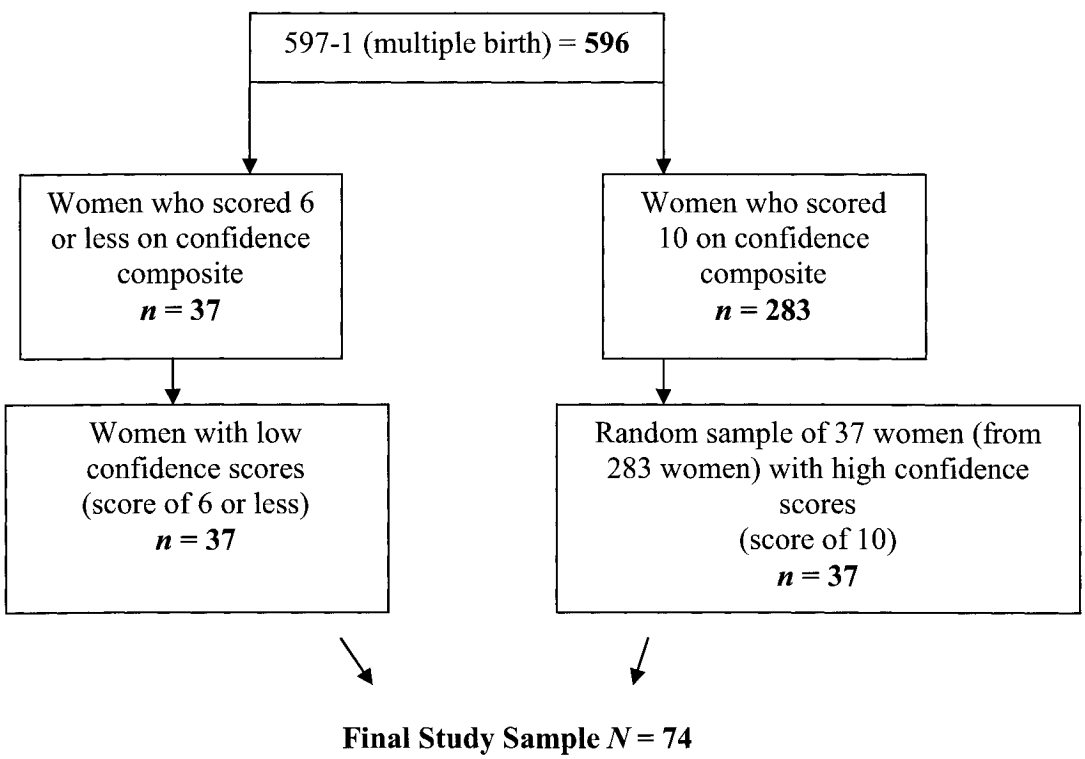
1	2	3	4	5
Not at all Confident		*Somewhat Confident*		*Very Confident*

Sampling technique.

Women who gave birth to twins (n = 1) were excluded, which left a sample of 596 women. Mothers of multiple births were excluded since parenting more than one newborn at the same time presents unique and sometimes separate challenges for families. From the sample of 596 women, extreme case sampling was used to create a sub sample for the qualitative analysis. Extreme case sampling follows the underlying assumption that cases on either end of a spectrum are rich in information and may provide important facts about the phenomenon of interest (Polit & Hungler, 1999). Since maternal confidence was of particular interest to the researcher, all women from the sample who scored 6 or less on the composite score were selected

(n = 37), and categorized into the low confidence group. An equal sample of women (n = 37) with composite scores of 10 were randomly selected from 283 women within the sample who had composite scores of 10, and were placed in the high confidence group. Random selection of the sample was performed using the Statistical Package for the Social Sciences (SPSS) version 12.0 for Windows. A final sample of 74 women was obtained for the current study (see Figure 5). Of the sample of 74 women, there were no missing data for confidence scores.

Figure 5 Sampling Diagram



Analysis of the Data

Within the six week postpartum questionnaire, women commented on the care they received during pregnancy, birth and the postpartum period, and what aspects of

their care could have been improved during these stages of care. A content analysis of women's comments was completed following recommendations put forth by Caelli, Ray and Mill (2003) for qualitative research and generic content analysis.

Two independent content analyses of the data were performed by the author and a University of Ottawa nursing faculty member. Women's comments were categorized for content under prenatal, labour and delivery, or postpartum. Items were then compared within and across categories to identify themes. Consensus agreement was used for categorizing comments as well as for theme identification. Comments under each stage were then counted to provide a basis for quantitative comparison. Frequencies and percents were used to describe women's characteristics regarding parity, language, education, age, income and whether or not they had a partner. Statistics were computed using SPSS version 12.0 for Windows.

Ethical Considerations

Ethics approval was obtained from the joint Health Sciences and Science Research Ethics Board of the University of Ottawa Research and Ethics Board (see Appendix D), and approval to perform the analysis using the FCMC dataset was granted by the City of Ottawa Research and Ethics Board (see Appendix E), now known as Ottawa Public Health Research and Ethics Board. The study design did not require contact with women from the original study, and there was no identifying information made available to the researchers.

Key Findings

Mothers' characteristics.

Table 13 represents characteristics of the sample, as well as sample characteristics by confidence scores (high and low scores). In the low confidence group, 37.8% of mothers indicated their language as English, 27% indicated French, and more than a third (35.1%) indicated a language other than English or French as their language first learned. In the high confidence group, 67.6% of mothers reported their language as English, 21.6% as French, and only 10.8% indicated a language other than English or French. Approximately 16% of women with low confidence scores did not have a partner, as compared to 30% of women with high confidence scores.

Table 13

Characteristics of Mothers

	Entire Sample	Women with Low Confidence Scores		Women with High Confidence Scores	
	N = 74	*n* = 37		*n* = 37	
Characteristics	%	*n*	%	*n*	%
Parity					
Primiparas	67.6	23	62.2	27	73.0
Multiparas	32.4	14	37.8	10	27.0
Language					
English	52.7	14	37.8	25	67.6
French	24.3	10	27.1	8	21.6
Other	23.0	13	35.1	4	10.8
Education					
High School	23.0	10	27.0	7	18.9
Some College/ University	9.5	3	8.2	4	10.8
Completed College/University	54.0	18	48.6	22	59.5
Postgraduate Degree	13.5	6	16.2	4	10.8
Maternal Age					
40 or greater	4.0	1	2.7	2	5.4
35 - 39	17.6	10	27.0	3	8.2
30 - 34	36.5	17	46.0	10	27.0
25 - 29	29.7	6	16.2	16	43.2
20 - 24	8.2	2	5.4	4	10.8
15 - 19	4.0	1	2.7	2	5.4
Income	*n* = 54	*n* = 27	*n* = 27	*n* = 27	*n* = 27
Less than $17, 000	5.6	1	3.7	2	7.4
$17, 000 - $39, 999	3.7	2	7.4	0	0
$40, 000 - $59, 999	22.2	6	22.2	6	22.3
$60, 000 - $79, 999	22.2	4	14.8	8	29.6
$80, 000 or greater	46.3	14	51.9	11	40.7
Refused to answer	(20)	10		10	
Partner Status					
Has a partner	77.0	31	83.8	26	70.3
No partner	23.0	6	16.2	11	29.7

Women's comments.

Of the 74 women included within the study, 63 commented on their care. The majority of women (n = 47) commented on negative experiences encountered. Women's comments were generally two to three sentences long, and some comments included several different elements of care. Figure 6 summarizes women's comments by stage (prenatal, labour and delivery, and postpartum), and element of care. Figure 7 provides a selection of quotes from mothers. Almost three-quarters of the women who commented referenced the postpartum care they received, and nurses were referred to three times as often as other members of the health care team. Women with low confidence scores commented three times more often on the hospital environment when compared to women with high confidence scores. Both groups (low and high confidence groups) commented on breastfeeding experiences with the same frequency. Women with low confidence scores commented twice as often on teaching and educational needs within the postpartum period when compared to women with high confidence scores.

Figure 6 Framework of Findings

STAGE	ELEMENT OF CARE	WHAT WOULD HAVE IMPROVED MY CARE
Prenatal	▪ Health Care Provider	▪ Physician taking time to listen to me and answer questions ▪ Not feeling rushed during prenatal appointments (physician and nurse)
	▪ Community Services	▪ Prenatal Education a) Standardizing what is taught to provide consistent and accurate information b) Emphasizing the positive aspects of labour & delivery during prenatal classes
Labour & Delivery	▪ Health Care Provider	▪ Having the nurse present more often to provide more personalized care and support ▪ Having physician present more often to ask questions ▪ Nursing staff being supportive of my family's presence
	▪ Hospital Environment	▪ Policy and procedures that aim to include partner/family in the labour & delivery experience (access is not restricted) ▪ An environment that respects my cultural and religious beliefs and values
Postpartum (up to six weeks)	▪ Health Care Provider	▪ More support from physicians and nurses (i.e. taking time to listen to me, and explain things when I am worried) ▪ More personalized care and support from nurses to offer teaching and education related to my learning needs ▪ Consistent advice from nurses regarding breastfeeding ▪ Breastfeeding support offered by nurses that is non-judgmental, does not patronize or pressure me, and increases my sense of control to problem solve when I am having difficulties ▪ A lactation consultant available in-hospital ▪ More awareness among Health Care Providers in community to recognize postpartum depression (PPD) ▪ More support and follow-up from physicians and Public Health Nurses for postpartum issues such as breastfeeding and PPD
	▪ Hospital Environment	▪ More nurses available in-hospital to provide care and support in the early postpartum period ▪ Hospital environment that is more supportive to mothers and babies rooming-in; • Warmer room temperatures • Flexible meal schedules for mothers/family members • Mother/baby friendly visiting policies • Providing safe environment in hospital room • Supportive and friendly nursing staff with regards to infant feeding, and mother and baby care

Figure 7 Mothers' Quotes

STAGE	ELEMENT OF CARE	MOTHERS' COMMENTS
Prenatal	▪ Community Services	▪ **Prenatal education** *"Lengthening the prenatal course and standardizing what is taught at the different courses. [I] attended a couple of classes at other prenatal courses and learned things that were not covered in the primary course."* *"Prenatal classes were not helpful. The nurse spoke of tragic births and reiterated pamphlets."*
Labour & Delivery	▪ Health Care Provider ▪ Hospital Environment	▪ **Lack of nursing support and need for more personalized care from nurses** *"...nurses are overworked and made mistakes due to this, we need more nurses."* *"The nurses were overworked and not too happy..."* *"...nurses should spend more time explaining, rather than just giving pamphlets...they expect moms to automatically know how to breastfeed or bottle feed"* ▪ **Inclusion of partner & family, respectful of cultural/religious beliefs and values** *"...husbands should be in hospital room right away [following cesarean section]. The hospital restricted my husband's time. This was stressful for a mother who wanted support..."* *"My husband felt totally unwelcome during labour and birth"* *"The nurse during my delivery was extremely blunt and rude to the father of the baby."* *"I asked my doctor to have a female during delivery. When I arrived I told the nurse that I had to have a female doctor because of religious beliefs. The female resident had to get a male doctor. This was very upsetting to my husband and myself. Very embarrassing."*
Postpartum (up to 6-8 weeks)	▪ Health Care Provider ▪ Hospital Environment	▪ **Lack of nursing support and unmet learning needs** *"I had a breast reduction, and found no info on breastfeeding for this condition. I was not encouraged or supported in any way regarding breastfeeding."* *"There was very little support for breastfeeding. I would have liked more support and information."* *"How to care for my vaginal area was not explained at the hospital. I was later informed about a sitz bath through the family doctor (2 weeks after delivery)...still wasn't healed and was getting worse."* *"I would have liked more information regarding how to care for myself after cesarean..."* *"[I] got a call from a Public Health Nurse and I told her that I would like a home visit. The nurse never called back or came to visit."* ▪ **Inconsistent nursing advice for breastfeeding** *"Nurses were giving contradictory and confusing advice regarding breastfeeding, more support expected. Felt completely on my own."* *"...nurses tell you different advice regarding breastfeeding – very confusing!"* *"Every nurse gave different advice, they should be consistent with their advice, especially for first-time moms!"* ▪ **Pressure from nurses to breastfeed** *"There was too much pressure to breastfeed, the result is feelings of worthlessness."* *"Nurses were way too overzealous for breastfeeding...had to justify reasons for pumping milk to each nurse...felt like a child." "There was too much support for breastfeeding – I had difficulty breastfeeding, baby was losing weight and no one mentioned bottle feeding until it was critical. The Public Health Nurse did not intervene enough."* *"The nurse forced the baby on me to breastfeed when she (the baby) wasn't yet capable.* ▪ **Environment conducive to rooming-in** *"Roommate had a restraining order from CAS (Children's Aid Society) to see her baby. Police had been to see her (roommate) the night before. ... [I am] wondering how this other woman was allowed in a room with other babies, if not her own. Very upset about this."* *"Rooms were freezing cold! Baby would have stayed 24 hours [with me] if not so cold."*

Discussion and Clinical Implications

Both women with low and high confidence scores commented more frequently on nursing care, rather than care received by other professionals. Nurses interact face-to-face with mothers at the bedside and in the community more often than other professionals, which may explain why women were more likely to recount experiences with nursing care. This finding also raises a question about the collaborative role of other professionals, such as physicians, in the supportive care of women during pregnancy, labour and delivery and the postpartum period. Examining the degree of influence that health care professionals have with respect to building and maintaining maternal confidence is required.

The overwhelming message embedded within mothers' comments surrounded interactions with nurses. Mothers reported that they needed more support from nurses regarding breastfeeding, infant care and self-care. Most notably, mothers with low confidence scores reported teaching and education to be areas where nursing support was lacking. This finding is not surprising as a recent review of 18 studies on postpartum learning needs found that the learning needs of new mothers are not being met within the early postpartum period (Bowman, 2005). Confidence level has been linked to teaching and education offered by nurses (Kuo, Chen, Mao & Tsou, 2000), and it has been suggested that confidence is enhanced through knowledge acquisition, especially when teaching and education are skill based or observational (Chezem, Friesen & Boettcher, 2003), such as demonstrating positioning for breastfeeding or practicing how to bathe an infant.

The progression towards shorter postpartum hospital stays may translate into decreased contact with nurses for teaching, and mothers may leave the hospital with unmet learning needs, potentially putting them at risk for decreased confidence and coping within the postpartum period. Nurses working in hospital settings play a key role in assessing a mother's readiness and comfort level upon discharge. Continuity of care between hospital and community settings is crucial to postpartum learning, which often occurs over several weeks (Ruchala, 2000). To facilitate postpartum learning in various work environments, nurses need access to information and tools that can guide teaching and education of mothers and their families. The FCMNC guidelines outline the following five principles to facilitate postpartum learning; set a comfortable climate for learning, share control of the content and the process, work at building the mother's self-esteem, ensure that learning applies to the family's home situation, and encourage self-responsibility of the mother (Health Canada, 2000). These principles of postpartum learning could be incorporated into policy documents on maternal teaching and education and adapted to suit practice at the bedside as well as within the community. While several studies have examined health outcomes related to shorter postpartum stays, further research is required to describe the cumulative effects of reduced contact with nurses and other health care professionals for postpartum teaching and education, and how these factors affect maternal confidence.

Staffing shortages of nurses may contribute to altered levels of support, and comments about nurses being too busy, overworked and short staffed were frequent. This finding is not surprising as experts warn that a national nursing shortage is

quickly becoming a reality (Mavromichalis, 2004). Some mothers perceived nurses as unfriendly, describing their behaviours as 'blunt' and 'forceful'. When mothers perceive nurses to be rushing or too busy to help them, they may feel intimidated and be reluctant to ask for much needed support (Matsuura Hong, Clark Callister & Schwartz, 2003). Encouraging nurses to actively solicit feedback from women on how their nursing care and support are perceived is recommended. This will enable nurses to reflect on their practice and increase awareness regarding how specific behaviours are perceived by women. Due to constraints of current work environments, it is recommended that nurses teach content that mothers are most in need of knowing (Ruchala, 2000), and this content may differ from generic postpartum checklists and teaching tools. Freda (2002) suggests starting each postpartum teaching session by asking new mothers about their existing knowledge base, what they need to know, and what they want to know. To facilitate use of these recommendations within practice settings, individualized care plans could be formatted to collect this type of information.

Both women with low and high confidence scores cited lack of nursing support for breastfeeding, although their descriptions of why support was lacking differed. Women with low confidence reported confusion about breastfeeding due to conflicting advice given by nurses, whereas women with high confidence reported too much pressure to breastfeed from nurses. This raises the question of whether nursing care actually differed between the two groups of women, or if care was perceived differently. Interestingly, women with low confidence seem to have internalized the problem blaming themselves (feeling confused), whereas women with high

confidence externalized the problem and held nursing staff responsible for being too forceful. Nurses have the ability to significantly impact a mother's breastfeeding experience through offering supportive or nonsupportive care (Lauwer & Shinksie, 2000). Having low confidence increases risk of early weaning and introduction of formula (Blyth, et al., 2002), and if nursing support for breastfeeding is inadequate, these women may be at an increased risk for early weaning or not initiating breastfeeding at all. This finding demonstrates that nurses need to be cognizant of factors, such as maternal confidence, that may affect a mother's perception of nursing support. In recognition of personal variables that affect breastfeeding, individualized breastfeeding support offered through tailored care plans is recommended as best practice when caring for breastfeeding mothers (RNAO, 2003). Additionally, care plans for breastfeeding mothers should incorporate assessment of women's confidence level for breastfeeding as a potential predictor of future problems (Dunn et al., in press), and as a method of gaining insight for tailoring nursing support interventions.

Women within this study reported that nurses gave conflicting advice on infant feeding. This finding has previously been documented within the literature, and has been blamed on a general lack of knowledge among nurses regarding current best practices for infant feeding (Matsuura Hong et al., 2003). In addition to conflicting infant feeding advice, report of pressure from nursing staff to breastfeed is a further concern. The support and development of infant feeding skills is a primary goal of postpartum care (Health Canada, 2000). In addition to providing correct information that is based on current best practice and protocols for infant feeding,

nurses need to provide advice and support that women perceive as beneficial to them. When mothers feel pressured and not supported by nurses the therapeutic relationship is jeopardized. Best practice guidelines for breastfeeding recommend exploring maternal attitudes towards breastfeeding and support received from health care providers (RNAO, 2003). In doing this, nurses are able to advocate exclusive breastfeeding while offering individualized support and care that is respectful of the mother's current method of feeding.

All policies, care plans and critical pathways used for nursing mothers should include evaluation measures for breastfeeding support. Evaluation of support offered by nurses should include the mother's perception of care and support as a primary indicator. In addition to promoting reflective nursing practice, evaluation enables continual improvement of nursing care, as well as opportunities to identify trends and systemic problems.

Women who reported a language other than English or French as their language first learned were less confident than women who were English or French speaking. These women may have experienced language and cultural barriers during their prenatal, birth and postpartum care, which increased anxiety and decreased confidence. The FCMNC guidelines outline the importance of enabling mothers to fulfill their mothering role within their family and cultural situation (Health Canada, 2000). Due to cultural beliefs and practices, immigrant women may perceive nursing care and support differently than Canadian-born women. A recent study found that the perspectives of immigrant women differed significantly from Canadian-born women with regards to perceptions of breastfeeding support (Loiselle, Semenic, Cote,

Lapointe & Gendron, 2001). Immigrant mothers were more likely than Canadian women to perceive experiences with breastfeeding support received as detrimental to their breastfeeding success (Loiselle et al., 2001). It is possible that non-English and non-French speaking women in the sample perceived the nursing care and support they received differently than English and French speaking women.

With increasing evidence that communication barriers contribute to disparities in health (Gutherie, 2005), it is essential that nurses incorporate cultural competence into their every day nursing practice (CNA, 2004). Cultural beliefs and values affect a mother's perception of care and support (Guthrie, 2005; Loiselle et al., 2001), and provision of care that is sensitive and respectful of culture is an essential component of effective care. As part of the nursing process nurses can include a cultural assessment into their routine care of clients, and refer to practice guidelines for culturally sensitive care (CNO, 2004) as a resource for practice.

The study had several limitations. The small sample size, and the fact that the sample was taken from one city decrease the generalizability of the results. Not all of the women in the sample commented on their care, which decreased the sample size for the content analysis portion of the study. It would have been desirable to perform a content analysis of all comments collected from women in the FCMC study (N = 596 women), as this would have provided a very detailed account of women's experiences with maternity care. The confidence measures used were generic, measuring overall maternal confidence rather than confidence for behaviours related to specific tasks. Using a pre-tested confidence scale that asks women about confidence performing specific behaviours related to baby care, self care and

breastfeeding may have yielded different results. Almost five years have elapsed since data collection and maternity care may have changed, although this does not decrease the importance of women's experiences and maternal confidence in the postpartum period.

The results of this study indicate the need for further research examining women's perception of nursing support and the effect that maternal confidence has on perception of support. Women can have vivid memories of experiences and interactions with healthcare providers as long as 15 to 20 years after childbirth, and tend to remember nurses most often (Simkin, 1991). While provision of support is an integral aspect of the nurse-client relationship, research has shown that there are disparities between the amount of support nurses report offering and the amount of support that women report receiving. Gagnon and Waghorn (1996) found that nurses can overestimate the amount and quality of support they are offering, and may not be aware of the way specific actions, behaviours, and health care environments are perceived by women. Perhaps this is related to differing perceptions of what nursing support means, or it may be due to individual characteristics like confidence level or culture. Further research is needed to describe what nursing behaviours women perceive as supportive and nonsupportive, and how maternal characteristics, such as confidence level and culture, affect perception of nursing support. This research will inform the development and implementation of programs, services and care that are driven by the needs of mothers and their families.

Implications for nursing practice include developing and implementing teaching and education sessions that are individualized and based on learning needs

that the mother has identified. Nurses have the opportunity to take advantage of 'teachable moments' with mothers to help solidify learning. For example, when helping a mother with breastfeeding positioning and latching, nurses can provide encouragement and positive reinforcement while the mother practices. Being aware of current best practice regarding infant feeding and using guidelines to help standardize care is a key component to offering consistent and accurate advice. Through the nursing assessment and development of individualized care plans, nurses can learn about the specific needs and characteristics of the women they care for, with special attention to factors that may influence perception of support, such as confidence level and cultural background.

Within the educational system, nursing support activities need to be clearly defined and their importance highlighted within undergraduate nursing curriculum. This will help prepare new graduates in providing comprehensive nursing support as they enter practice settings.

This study examined a sample of women with low and high confidence levels in an attempt to describe what aspects of their maternity care could have been improved, and how their experiences related to confidence level. Current evidence indicates that nursing support and maternal confidence are salient factors to consider when caring for postpartum women, and further inquiry into the relationship between these two factors will contribute to a growing body of knowledge on provision of postpartum care and maternal confidence, as well as influence practice level changes to enhance care and support for mothers and their families.

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Chapter Four

Summary and Conclusion

Summary of Findings

The studies described within this thesis used both quantitative and qualitative analysis to examine maternal confidence in the postpartum period as it relates to mothers' characteristics and experiences with professional nursing support. Study findings revealed that postpartum maternal confidence was significantly related to parity and maternal language, as well as mothers' experiences with the following elements of nursing support; prenatal education attendance, 24 hour rooming-in, rating of breastfeeding support, and use of postpartum community services. Mothers also indicated that they would have liked more support from nurses regarding breastfeeding, baby care and self-care. Additionally, maternal confidence level (high or low) may influence perception of nursing support.

Recommendations for Practice and Policy

Recommendations for nursing practice and policy stemming from the two studies involve all phases of care from the prenatal period to the postpartum period. Nurses have the opportunity to interact with women throughout pregnancy and well into the postpartum period. With each interaction nurses have several opportunities to offer anticipatory guidance to mothers. This guidance should be offered to both primiparas and multiparas, and encourage dialogue between the nurse, mother, and her family regarding expectations, potential challenges and possible solutions. Some mothers may have unrealistic expectations of the breastfeeding experience (Mozingo, Davis, Droppleman & Merideth, 2000), and other aspects of parenting a newborn.

Offering individualized anticipatory guidance as a primary intervention can positively influence breastfeeding (Hill, 1991) and can be beneficial for other areas of postpartum adjustment (Health Canada, 2000). Barriers to offering anticipatory guidance can include limited time, lack of confidence and knowledge in counseling techniques, as well as the absence of systems within the practice setting (Rosenthal et al., 2005). Incorporating anticipatory guidance activities into care plans, checklists and other forms used in daily practice can serve as reminders and provide quick reference for nursing staff practicing in busy environments (Cheng, DeWitt, Savageau & O'Connor, 1999).

Educational and teaching tools adapted for specific practice areas should be made readily available to nurses. Within the FCMNC guidelines, Health Canada (2000) suggests using five key principles to guide postpartum learning. These principles or other tools could be modified for use at the bedside or in the community as a component of individual care plans. Women should be given the opportunity to identify their own learning needs so that nurses can tailor teaching and educational interventions for them (Ruchala, 2000). The initial nursing assessment could be used to identify unique learning needs, which could then be added to standard prenatal and postpartum teaching checklists and forms.

Despite clear evidence indicating that 24 hour mother-baby rooming-in promotes early maternal contact and breastfeeding (Palda et al., 2004), only one third of women within the study experienced 24 hour rooming-in with their newborns. Twenty-four hour rooming-in should continue to be part of routine postpartum care and to ensure that rooming-in is the norm, hospitals need to develop and implement

policies that support the rooming-in of mothers and babies. The World Health Organization and the United Nations Children's Fund (UNICEF) launched The Baby-Friendly Hospital Initiative (BFHI) in 1991 to ensure that breastfeeding is supported and promoted in all hospitals, and rooming-in is an integral element of the initiative. The BFHI takes a comprehensive approach that requires the involvement of management and policy makers, front-line staff, community agencies and key stakeholders. Through information, guidelines and implementation toolkits, hospitals can receive a Baby-Friendly designation. To ensure continuity between hospital and community settings, Baby-Friendly guidelines for community agencies are also available. In addition to supporting rooming-in, implementing all or some elements of the initiative in practice settings would inevitably decrease the incidence of misinformation or conflicting nursing advice regarding breastfeeding, which was a problem reported within the study. Nurses can lobby management for development and implementation of policies that will lead to practice that is supportive of rooming-in and breastfeeding. The establishment of committees and coalitions with representation from hospital and community settings can facilitate planning of comprehensive care and services related to breastfeeding. Key players from all sectors may include lactation consultants, midwives, members of breastfeeding peer support groups, Public Health Nurses, and physicians who care for breastfeeding mothers. Each key player can serve as an advocate or champion for breastfeeding best practice within their respective practice settings.

Research has demonstrated a definite link between confidence level and breastfeeding initiation and duration (Dunn, Davies, McCleary, Edwards, & Gaboury,

in press; Ertem, Votto, & Leventhal, 2001; O'Campo, Faden, Gielen, & Wang, 1992; Papinczak & Turner, 2000). Dennis and Faux (1999) developed a screening tool for measuring confidence for breastfeeding. Given that mothers with decreased confidence are at higher risk of weaning earlier and introducing formula when compared to mothers with high confidence, screening for breastfeeding confidence levels in-hospital and in community settings is recommended. Screening mothers for breastfeeding confidence during the early postpartum period in-hospital, as well as at 3 and 6 months postpartum would provide useful information about breastfeeding confidence over time, as well as identify women with low or decreasing levels of confidence. Once identified, women with low or decreasing confidence could be offered increased support through various mediums, such as breastfeeding peer support programs, a lactation consultant, telephone support, and home visiting by a PHN or lay home visitor. Additionally, screening for breastfeeding confidence and providing necessary support at 3 months and again at 6 months may help mothers maintain exclusive breastfeeding status. Screening for confidence levels at regular intervals in the postpartum period would provide baseline information about fluctuation in confidence levels over time, and could serve as an indicator for the efficacy of various forms of breastfeeding support.

Furthermore, when breastfeeding support is offered, mothers should be given the opportunity to evaluate the level of support received. Asking mothers for feedback related to breastfeeding support encourages reflective nursing practice, and can highlight gaps in service and practice that may need to be addressed. Integrating reflective practice activities into the work environments of nurses is recommended.

Although nurses already reflect on their practice as a requirement of registration in Ontario, it may be beneficial to have nurses reflect on practice collectively as a group. For example, a group of perinatal nurses could meet to share practice issues, questions and reflective practice techniques. Evaluations and feedback from mothers could be used to focus discussion.

Study results revealed that mothers often felt hospital nurses were too busy or short staffed to offer adequate care and support, and described nurse's behaviours as rude or blunt. This finding brings to light the importance of recognizing how environmental factors, such as being short staffed, impact on the behaviours of nurses and in turn affect mothers' perceptions of care. Reflective practice activities will increase awareness among nurses and other health care professionals regarding how specific environmental factors affect their behaviours, and influence mothers' perceptions of care and support.

Women who spoke a language other than English or French were significantly less confident in the postpartum period when compared to their English and French speaking counterparts. This finding reinforces the significance of incorporating culturally competent nursing care into daily practice. While further research is required to learn about the needs of culturally diverse women within the postpartum period, key recommendations for practice include but are not limited to; ensuring nurses have access to, and participate in, continuing education related to culturally competent care, asking clients about cultural beliefs and preferences while assessing their level of acculturation, linguistic ability and educational level, and developing

care plans accordingly, as well as incorporating indicators for culturally competent care into client evaluations.

Recommendations for Education

Study findings draw attention to the importance of consistent messaging from nurses and other health care professionals regarding best practices for breastfeeding. Nurses have the responsibility to incorporate research findings into their daily practice (Callister & Hobbins, 2000) and due to the importance of consistent and accurate nursing advice related to breastfeeding, the RNAO (2003) developed Best Practice Guidelines for breastfeeding. These guidelines written for nurses by nurses, include a compilation of current evidence-based recommendations and practices when caring for a breastfeeding dyad, and are congruent with the Baby-Friendly Initiative. Dissemination and implementation of the guidelines can be facilitated by use of an implementation toolkit and ongoing web-based support from the RNAO (RNAO, 2002). Implementation of best practice guidelines alone is not enough. An integrated approach is recommended, using best practice guidelines, policies and protocols, as well as exploration into the attitudes and knowledge base of nurses providing breastfeeding support. Exploration into nurse's attitudes and current level of knowledge will help identify potential sources of bias (Dunn et al., in press), as well as gaps in knowledge related to best practice for breastfeeding. Additionally, in accordance with the Baby-Friendly Initiative, minimum education requirements for all nurses who provide breastfeeding support are recommended.

The Canadian Nurse's Association (CNA, 2004) state that nurses have a duty to provide culturally competent care, and refer nurses to the *Code of Ethics for*

Registered Nurses for guidance related to professional responsibilities for culturally competent care. While nursing practice guidelines exist for client-centred care and the nurse-client therapeutic relationship (CNO, 2001) these guidelines may not provide the level of information required by nurses working in culturally diverse environments. The Canadian population continues to diversify with respect to culture (CNA, 2004), and there is a need for best practice guidelines on culturally competent care. At minimum, best practice guidelines on culturally competent care would increase awareness among nurses and health care providers regarding the importance of culturally competent care, as well as provide nurses with access to evidence-based recommendations when caring for culturally diverse populations. In recognition of the unique needs of different work environments, the guidelines could serve as a basis for best practice with specific information and resources added depending on the practice environment. Best practice guidelines on culturally competent care could also be used in conjunction with policies and protocols regarding the provision of culturally competent care.

Recommendations for Research

It is clear that primiparas and multiparas reported different levels of confidence and had different experiences with professional nursing support. There is a considerable amount of research describing the characteristics, needs and concerns of primiparas, and future research should focus on the specific characteristics, needs and concerns of multiparas. Very little is known about multiparas with respect to preferences for prenatal education and 24 hour rooming-in, usage of postpartum community services, and breastfeeding support needs. Research exploring various

options for prenatal education delivery may find that multiparas would benefit more from different delivery methods, such as one-on-one education sessions, on-line learning modules, or one time 'refresher classes'. Some health units have moved away from traditional structured prenatal classes and are offering prenatal or family health information fairs at various intervals throughout the year. The fairs are advertised as one-stop shopping for prenatal education and information, as well as resources and services for the postpartum period. Women can pick and choose the information and resources they access, and are able to learn about a wide variety of available community services. After speaking with health care professionals at the fair women have a context to base their experiences on. This style of information and resource delivery impacts a large audience, as it targets women thinking about getting pregnant and those who are pregnant.

The study finding that multiparas confidence decreased from discharge to six weeks postpartum supports the need for further research on the timing of postpartum community services for multiparas, such as home visiting by PHNs. A study that examined the implementation and uptake of the hospital stay and postpartum home visiting program at five Canadian sites suggested that women who have numerous informal supports may benefit more from a delayed or second home visit, when supports are less accessible (Sword, Watt & Krueger, 2004). Perhaps multiparas would benefit more from a home visit or other community services at the six week postpartum point, rather than the very early postpartum period. Pursuit of research on the needs of multiparas and timing of support will help identify barriers that inhibit multiparas from accessing available community services within the postpartum

period, and will inevitably impact on service delivery planning for hospitals, public health and other community agencies.

Results from the study indicated that multiparas who roomed-in with their newborns did not experience the same increase in confidence when compared to primiparas who roomed-in. Future research needs to compare the confidence levels of primiparas and multiparas pre and post rooming-in. Confidence level should be measured using a pre-tested 5-point or 10-point Likert scale with items that represent different levels of task demands (Bandura, 1997). Furthermore, control group studies involving women who roomed-in and those that did not room-in are required. This research would facilitate measurement of the effect of rooming-in on confidence level over time. Sword et al. (2004) recommend follow-up of mothers and babies beyond four weeks postpartum, since longitudinal follow-up helps us understand a wide range of possible outcomes.

While evidence supports the use of elements of Bandura's theory of Self-Efficacy to guide practice interventions related to breastfeeding (Blyth, et al., 2002; Dennis, 1999), further research is required to determine if the theory can be applied to multiple dimensions of postpartum adjustment. The theory of Self-Efficacy suggests that self-efficacy is enhanced through four mechanisms; mastery experiences, which are past performances or successes with a task: vicarious experience, which involves observing others perform a task in order to gain insight into how the task should be performed: social or verbal persuasion, which occurs through encouragement from family, friends or health professionals: judgment of bodily states is the final mechanism, and is related to stress levels which can influence an individual's level of

efficacy (Bandura, 1997). The effectiveness of these four mechanisms in increasing confidence level could be determined through comparison of women exposed to self-efficacy enhancing interventions based on the four mechanisms, to women in a control group receiving routine interventions. Interventions aimed at enhancing self-efficacy could include inviting breastfeeding mothers to a prenatal class to demonstrate and answer questions (vicarious experience), or having a new mother practice bathing her infant while the nurse provides guidance, encouragement and positive reinforcement (mastery experiences and verbal persuasion).

Whenever possible, all future research and inquiry into maternal confidence should incorporate the use of pre-tested tools that measure several items related to specific behaviours. The design of the primary study precluded the use of such a scale, although there are pre-tested scales available within the literature. An example of an existing pre-tested scale is The Parenting Self-Efficacy Scale (PES) developed by McClennan Reece (1992). The PES is designed as a 10-point Likert scale that has 25 items based on specific tasks related to parenting an infant, and has been endorsed by Bandura (McClennan Reece, 1992).

Limitations and Strengths

The limitations from the primary study continue to exist for the secondary study. Within the FCMC study questionnaire, the maternal confidence questions were not tested for reliability and accuracy. The maternal confidence questions provided global measures of confidence, rather than the recommended method of listing several tasks associated with a specific behaviour (Dennis, 2003). It would have been desirable to use a pre-tested tool to measure maternal confidence.

Additionally, breastfeeding confidence upon discharge from hospital was measured retrospectively at six weeks postpartum. Experiences from discharge to the six week postpartum point may have influenced women's report of their breastfeeding confidence level. Confidence caring for self and confidence caring for baby upon discharge was designed as a combined question. Mothers may have had difficulty answering this question accurately since it is a combination of two questions. Women's comments regarding their care were recorded onto a paper copy of the FCMC study questionnaire and then entered into a computer file. Tape recording women's comments and then transcribing them may have yielded more detailed comments.

The professional nursing support variables were chosen because they were highly likely to represent elements of professional support commonly offered by nursing during pregnancy, labour and delivery and the postpartum period. Due to the design of the primary study questionnaire, it is possible that some elements of nursing support were not offered by nurses. For example, prenatal education classes may have been offered by a lactation consultant who is not a nurse. While this is a limitation of the study, all supportive interactions with health care professionals have the potential to influence confidence levels.

Using mixed methods of quantitative and qualitative analysis is a strength of this thesis. Polit and Hungler (1999) state that employing a mixed methods approach is complimentary and may diminish the weaknesses of a single approach. Findings from the quantitative analysis provide insight into the experiences and confidence levels of women, while findings from the qualitative study provide a description of

mothers' experiences in their own words. Furthermore, findings from both studies were generally congruent. Maternal confidence continues to be an area of keen interest when studying pregnant and parenting women, with key documents, such as Health Canada's (2000) Family-Centred Maternity and Newborn Care National Guidelines, acknowledging its importance within maternity care. The findings and recommendations of this study are timely as the Canadian Perinatal Surveillance System embarks on a project entitled The Maternity Experiences Survey (Health Canada, 2003). The project's primary objective is to gain insight into Canadian women's maternity experiences, with special attention to women's perceptions of their experiences and high risk groups, such as recent immigrants (Dzakpasu & Chalmers, 2005).

Contributions to Knowledge

This thesis provides the following contributions to knowledge;

1. Both studies describe the characteristics, nursing support experiences and overall maternity experiences of women with low confidence. Women with low confidence are at risk for several adverse outcomes including early weaning of breastfeeding (Dunn et al., in press; Ertem et al., 2002), increased stress in the postpartum period, and difficulty adapting to the parenting role (McClennan Reece & Harkless, 1998). Knowledge of the characteristics and experiences of women with low confidence provides valuable information for nurses and other health care providers when planning and providing care.

2. Within the qualitative study, women's experiences with care and support during pregnancy, labour and delivery and the postpartum period are described using

mothers' own words which enable us to learn directly from them. The scholarly community has identified the need for pursuit of this type of qualitative inquiry with pregnant and parenting women (Bowman, 2005; Ruchala, 2000).

3. This study identified parity as a significant factor to consider when examining maternal confidence levels and nursing support experiences. In addition to providing insight into the characteristics and nursing support experiences of multiparas, this study identified the need for further research on this unique population of pregnant and parenting women who are often excluded from studies.

4. This study identified language as a maternal characteristic that is significantly related to maternal confidence. Women whose mother tongue was a language other than English or French were significantly less confident caring for their babies during the first six weeks at home. This information can serve to increase cultural awareness among nurses and other health care professionals who work with pregnant and parenting women. Study findings also identify the need for research into the characteristics and support needs of women of various cultures.

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Appendix A

Definition and Measurement of the Variables

Variables representing women's characteristics.

VARIABLES	DEFINITION & ITEM FROM PRIMARY QUESTIONNAIRES	MEASUREMENT	LEVEL OF MEASUREMENT
1. Maternal Age	The difference between the date of questionnaire completion and the woman's year of birth (6 week quest., Q65)	Mean, standard deviation and range	Ratio
2. Partner Status	Whether or not the individual has a partner (6 week quest., Q67)	Has a partner Does not have a partner	Nominal, dichotomous
3. Maternal Language	Language first learned and still understood (6 week quest., Q71)	English French Other	Nominal
4. Family Income (recoded)	Amount of money earned from all sources before taxes for one year (Jan. 1/99 to Dec. 31/99) (6th week, Q73)	< $17 000 $17, 000 - $39, 999 $40, 000 - $59, 999 $60, 000 - $79, 999 $80, 000 or more	Ordinal
5. Maternal Education (recoded)	The last year completed at school, college or university (6th week, Q66)	High School Some College Some University Completed College Completed University Postgraduate degree	Ordinal
6. Type of Delivery	Whether the mother had a Vaginal or Cesarean delivery (1st week, Q4)	Vaginally By Cesarean	Nominal, dichotomous
7. Parity	Was this the mother's first baby (1st week, Q3).	Yes No	Nominal, dichotomous

Variables representing experiences with professional support.

VARIABLES	DEFINITION & ITEM FROM PRIMARY QUESTIONNAIRES	MEASUREMENT	LEVEL OF MEASUREMENT
7. Prenatal Education Attendance	Attendance at prenatal education classes (6th week, Q1)	Yes No	Nominal, dichotomous
8. Rating of labour & delivery nursing support	Woman's rating of labour and delivery support from nursing staff (1st week, Q14)	5-point Likert Scale; 1- Not at all supported 3 -Somewhat supported 5- Very well supported	Ordinal
9. 24 hour rooming-in (recoded)	The practice during which the baby remains in the mother's hospital room 24 hours per day (1st week, Q39)	24 hour rooming-in Did not have 24 hour rooming-in	Nominal, dichotomous
10. Combined nursing care	Model of work organization where one nurse per shift takes care of both mother and baby as an interdependent unit (1st week, Q40)	Per Shift; One nurse for both me and my baby One nurse for me and one (different) for my baby	Nominal, dichotomous
11. Rating of breastfeeding support in-hospital	Amount of perceived support received for breastfeeding while in-hospital (6th week, Q30)	5-point Likert Scale; Breastfeeding support; 1- Poor 3- Good 5- Excellent	Ordinal

Variables representing experiences with professional support.

VARIABLES	DEFINITION & ITEM FROM PRIMARY QUESTIONNAIRES	MEASUREMENT	LEVEL OF MEASUREMENT
12.a) Community services received or sought out in postpartum period	Having received or sought out available services within the community during the postpartum period (6th week, Q51)	Yes (received/sought out) No (did not receive/seek out) Services; Phone call from PHN Visit from PHN Well baby drop-in Phone call to Parent Child Info line Breastfeeding support drop-in Package of info in mail from Health Department Other	Nominal, dichotomous
12.b) Community Services Score (new variable)	Score for community services received and/or sought out during the postpartum period	Max score of 7; 0 services= score of 0 1 service= score of 1 2 service= 2 3 services= 3 4 services= 4 5 services= 5 6 service = 6 7 services= 7	Ordinal

Variables representing maternal confidence measures.

VARIABLES	DEFINITION & ITEM FROM PRIMARY QUESTIONNAIRES	MEASUREMENT	LEVEL OF MEASUREMENT
1. Confidence caring for self and baby upon discharge from hospital	Women's rating of confidence level for caring for themselves and their newborn baby upon discharge from hospital (1st week, Q55)	5-point Likert scale; 1-Not at all confident 3-Somewhat confident 5-Very confident	Ordinal
2. Confidence breastfeeding upon discharge from hospital	Women's rating of confidence level for breastfeeding their newborn baby upon discharge from hospital (6th week, Q32)	5-point Likert scale; 1-Not at all confident 3-Somewhat confident 5-Very Confident	Ordinal
3. Confidence caring for self during time at home	Women's rating of confidence level in caring for themselves during their time at home (during first six weeks) (6th week, Q49)	5-point Likert Scale; 1-Not at all confident 3-Somewhat confident 5-Very confident	Ordinal
4. Confidence caring for baby during time at home	Women's rating of confidence level in caring for their baby during their time at home (during first six weeks) (6th week, Q50)	5-point Likert Scale; 1-Not at all confident 3-Somewhat confident 5-Very confident	Ordinal
5. Confidence caring for self and baby during time at home * *(new variable)	Women's rating of confidence level in caring for themselves and their baby during their time at home (during first six weeks)	Composite score created by variable #3 + variable #4 * New variable created to measure changes in maternal confidence level over time (from one week to six weeks postpartum)	Ordinal

Appendix B

Recoding of Study Variables

Variable from Primary Study	**Level of Measurement**	**Recoded Variable and Explanation**	**Level of Measurement After Recoding**
Income; <$17, 000 $17,000-$26,999 $27,000-$31,999 $32,000-$35,999 $36,000-$39,999 $45,000-$49,999 $50,000-$59,999 $60,000-$69,999 $70,000-$79,999 $80,000 or more	Ordinal	Recoded Selections; <$17,000 $17,000-$35,999 $40,000-$59,999 $60,000-$79,999 $80,000 or more Recoded to match provincial income data. Scale from The Ontario Mother Infant Survey (2002)* used.	Ordinal
Maternal Education; Public School High School Some College Some University Completed College Completed University Postgraduate Degree	Ordinal	Recoded Selections; High School Some College Some University Completed College Completed University Postgraduate Degree *Public school* response (n=1) recoded into *High School* category	Ordinal
Rooming-in; During the day only 24 hours (overnight) Not at all Other (please describe)	Nominal, 3 categories	Recoded Selections; Yes – had 24 hour rooming-in No – did not have 24 hour rooming-in If mother selected Other, explanation was reviewed and categorized into one of two groups	Nominal, 2 categories

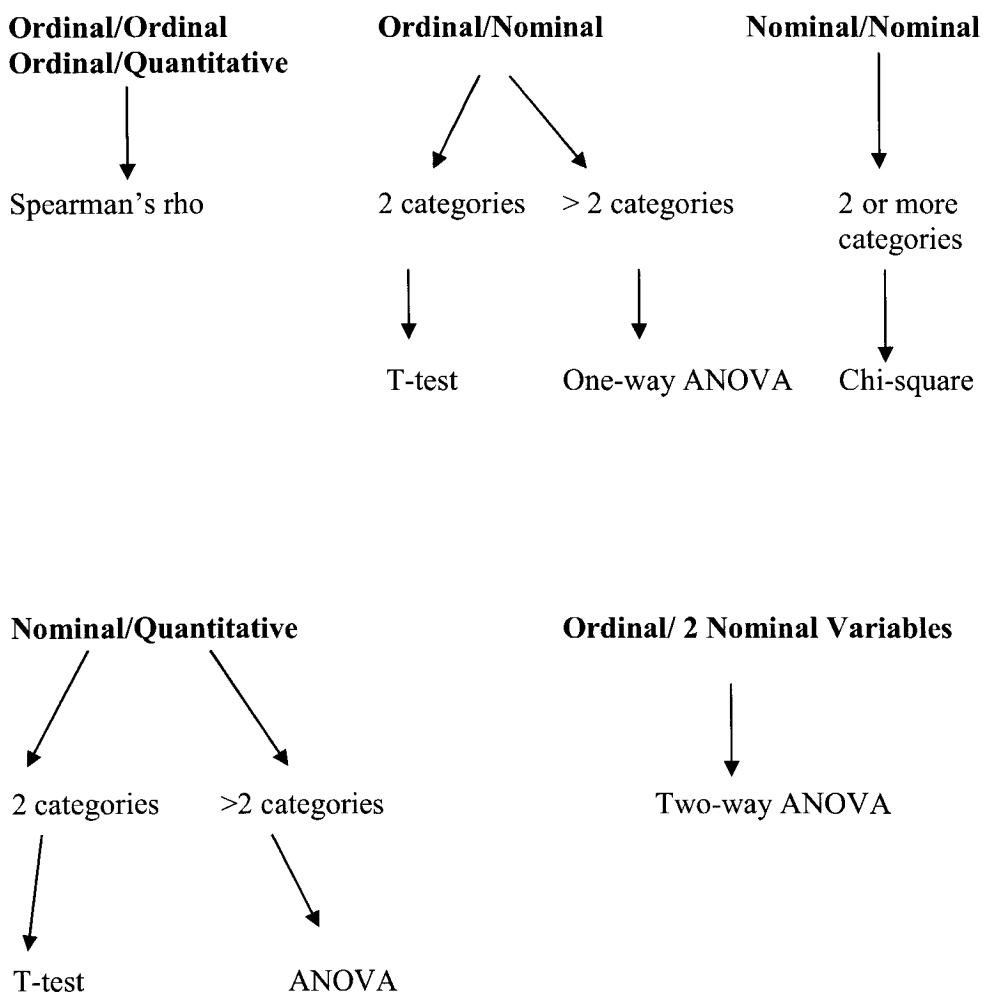
Recoding of Study Variables

Variable from Primary Study	Level of Measurement	Recoded Variable and Explanation	Level of Measurement After Recoding
Community Resources Received or Sought-Out; 7 Choices – mothers answered yes or no to; Phone call from PHN Visit from PHN Services from HBHC Well Baby Drop-in PHIL Visit to Breastfeeding Support Drop-in Package of information in mail Other (specify)	Nominal, 2 categories	Community Services Score Community services received or sought-out were counted for each case to create a score for each woman in the sample i.e. if no services were received or sought-out the woman's score would be 0, if one service was received or sought-out the score would be 1. *Services from HBHC* was excluded from analysis because only 5% of women in the sample indicated having received HBHC services, and all services listed are offered as part of the HBHC program	Ordinal
Confidence caring for self during time at home Confidence caring for baby during time at home	Ordinal (Likert scale)	Confidence caring for self and baby during time at home. Composite score created by summing two measurements and dividing result in half. This facilitated measurement of confidence over time	Ordinal

* Sword, W A., Watt, S., Krueger, P. D., Soon-Lee, K., Sheehan, D.D., Roberts J. G., & Gafni, A. (2001). Understanding newborn infant readmission: Findings of the Ontario Mother and Infant Survey. *Canadian Journal of Public Health, 92*(3), 196-200.

Appendix C

Decision Tree for Statistical Testing



Appendix D

University of Ottawa Ethics Approval Certificate

HEALTH SCIENCES AND SCIENCE RESEARCH ETHICS BOARD

CERTIFICATION OF ETHICS APPROVAL

This is to certify that the University of Ottawa Health Sciences and Science Research Ethics Board (REB) examined the application for extension of ethics approval for the research project **Mother's Report of Professional Support and Maternal Confidence within the Postpartum Period (former title: The Relationship Between Mother's Report of Professional Support and Confidence Postpartum) (file H 12-03-03)** submitted by Shannon Mantha who is supervised by Barbara Davies, both of the School of Nursing, Faculty of Health Sciences. This project received initial ethics approval on December 9, 2003 by the REB as meeting appropriate ethical standards set out in the Tri-Council Policy Statement and in the Procedures of the University of Ottawa Research Ethics Boards. The University of Ottawa REB members accordingly gave it an extension of ethics approval. This ethics renewal certification is valid for one year from the date mentioned below.

_____
Rita D'Alessandro
Protocol Officer for Ethics in Research
For Dr. Daniel Lagarec, Chair of the
Health Sciences and Science REB

December 9, 2004
Date

Appendix F

Power Calculations for Chi-square Tests

All power calculations were computed with *N* = 298 and 80% power.

Table 8 - *Community Services Received by Parity*

Services Received	Primips % *N = 298*	Multips % *N = 298*	x^2	*p* value
Phone call from PHN	**96.1** *n=286*	**95.6** *n=285*	0.39	0.534[1]
Visit from PHN	**75.5** *n=225*	**58.4** *n=174*	19.72	**< 0.0001**
Package of Information in mail	**65.1** *n=194*	**61.1** *n=182*	1.04	0.308[2]

Note. PHN – Public Health Nurse
[1] In order to be detectable with the available sample size, in comparison to primiparas, the percentage of multiparas would need to be lower than 88% or higher than 99%.
[2] In order to be detectable with the available sample size, in comparison to primiparas, the percentage of multiparas would need to be lower than 48% or higher than 81%.

Table 9 - Community Services Sought Out by Parity

Services Sought Out	Primips % *N = 298*	Multips % *N = 298*	x^2	*p* value
Visit to a WBDI	**22.8** *n=68*	**14.8** *n=44*	6.24	0.013[3]
Phone call to PHIL	**36.4** *n=108*	**28.2** *n=84*	4.55	0.033[4]
Visit to Breastfeeding Support Drop-in	**18.8** *n=56*	**10.1** *n=30*	9.19	**0.002**
Other	**1.0** *n=3*	**0.7** *n=2*	0.20	1.000[5]

Note. WBDI – Well Baby Drop-in, PHIL – Public Health Info Line
[3] In order to be detectable with the available sample size, in comparison to primiparas, the percentage of multiparas would need to be lower than 12% or higher than 35%.
[4] In order to be detectable with the available sample size, in comparison to primiparas, the percentage of multiparas would need to be lower than 24% or higher than 50%.
[5] In order to be detectable with the available sample size, in comparison to primiparas, the percentage of multiparas would need to be higher than 60%.

Appendix G

Contributions to Thesis

Shannon Mantha, RN, BScN

Barbara Davies, RN, PhD

Alwyn Moyer, RN, PhD

Katherine Crowe, RN, BScN

Jennifer Clinch, MA

Shannon Mantha was the principal author and completed this thesis in partial requirement of the Masters of Science in Nursing degree at the University of Ottawa. Dr. Barbara Davies was the thesis supervisor and Dr. Alwyn Moyer and Katherine Crowe were thesis committee members. All committee members, including the thesis supervisor, contributed to the study concept, design and data analysis and preparation of the thesis document. Specifically, Dr. Barbara Davies contributed to the entire process including development of research questions, the conceptual framework, study design and data analysis. Dr. Alwyn Moyer contributed to the conceptual framework, study design and analysis of the qualitative data. Katherine Crowe contributed to study design, draft revisions and provided practical information and advice related to practice issues for nurses caring for pregnant and parenting women. Jennifer Clinch provided statistical advice and direction for the quantitative study, including all statistical testing and display of results within the thesis.