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**Factors Related To Childbirth Nurses' Intentions to Provide Continuous Labour Support to Women  
during Childbirth**

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Factors related to childbirth nurses' intentions to provide continuous  
labour support to women during childbirth

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

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Abstract

**Purpose:** Explore the organizational barriers and examine determinants of nurses' intentions to practice continuous labour support (CLS).

**Design:** Exploratory two-phase study using qualitative and quantitative methods.

**Participants:** Childbirth nurses, educators and managers from two birthing units on two campuses of one hospital, in an urban city in Ontario, Canada. Phase I, N=10/10; Phase II, N = 97/129.

**Methods:** Semi-structured interviews with content analysis followed by a survey using the Theory of Planned Behavior with descriptive, univariate and multiple regression analyses.

**Results:** Unit acuity, method of patient assignment, need to cover other nurses for break and nurse-patient ratio, were the most frequently reported barriers. Nurses' attitude scores, subjective norm scores and intention scores toward providing CLS to women with epidural analgesia were lower than those for a non-epidural case study.

**Conclusions:** Organizational barriers impact nurses' ability to provide CLS. Nurses have lower intentions to provide CLS to women with epidural analgesia.

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*To Rick, Christopher and Mikayla*

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## Chapter One

### Introduction

In North America, prior to 1760, childbirth generally occurred in the woman's home and was a family and community event. "Women suffered through the agonies and dangers of birth together, sought each other's support, and shared the relief of successful deliveries and the grief of unsuccessful ones. Women provided companionship, cared for and helped each other during pregnancy, childbirth and the postpartum period. Their knowledge and wisdom resulted from the experiences they shared with each other (Leavitt, 1986; Simkin, 1992). "This social childbirth experience united women..." (Leavitt, 1986, p. 37) and gave women autonomy over their childbirth experience. They decided who would attend, what comfort measures would be used and where they would give birth (Leavitt, 1986). Women were most often attended to in their homes by midwives, who offered support and provided comfort and reassurance. During the second half of the 18<sup>th</sup> century male physicians began attending deliveries in the homes of women, particularly when there were complications. By the mid-nineteenth century, physicians had the knowledge and ability to provide women with analgesics and deliver their babies using medical instruments. Although delivering under a physician's care, women continued to be accompanied by other women and remained in control of their birthing experience (Leavitt, 1986).

By the 20<sup>th</sup> century, childbirth was beginning to move to the hospital setting. Birthing babies in hospitals resulted in women delivering alone, often unconscious at the end, separated from family and friends, in cold, sterile operating rooms, controlled by strangers; a radical change from the woman's bedroom (Leavitt, 1986). The effect of this shift in care led to the medicalization of birth and an interventionist model of care (Enkin, 2000; Goldberg,

2002; Leavitt, 1986). This change of setting changed the practice of companionship by women, for women in childbirth (Leavitt, 1986; Reeder and Martin, 1987; Scott, Klaus & Klaus, 1999) and reduced a woman's autonomy over her own body (Goldberg, 2002; Leavitt, 1986). "Physical and psychological support were irrelevant" (Enkin, 2000, p. 248).

Continuous support during labour quickly became "the exception rather than the routine" (Hodnett, Gates, Hofmeyr & Sakala, 2003, p. 2) and nurses' role became technical not supportive (Enkin, 2000; McNiven, Hodnett & O'Brien-Pallas, 1992). In fact, historical accounts of deliveries make reference to the fact that nurses were rarely physically present and certainly not emotionally present (Leavitt, 1986).

The natural childbirth movement of the 1950s and 1960s brought about the revival of the practice of companionship for women in childbirth. Family, friends and nurses alike provided women with the support needed. There was a renewed recognition that companionship improved satisfaction and autonomy for women (Simkin, 1992).

Companionship was recognized once again, as an important component of labour support.

"Thus, within a short span of approximately fifteen years, from the early 1960s to the late 1970s, Western cultural perceptions of birth turned completely topsy-turvy from maternal isolation, unconsciousness and total nonparticipation to family-centered husband-coached natural (unmedicated) childbirth" (Simkin, 1992, p. 19).

In today's technology-dominated system, many restrictions have been placed on nurses (Hodnett, 1997) making continuous labour support difficult. Nurses' role includes not only the ability to provide physical, informational, emotional and advocacy support (Health Canada, 2000; Hodnett et al., 2003) but also manage the technology associated with childbirth. In most North American hospitals, family and friends provide much of the companionship and support for women in childbirth. That said, many North American

studies have demonstrated the psychosocial benefits and a patient preference for supportive care by childbirth nurses, including continuous presence ( Bryanton, Fraser-Davey, & Sullivan, 1994; Copeland & Douglas, 1999; Goodman, Mackey & Tavakoli; 2004; Hodnett et al., 2003; Mackey & Flanders-Stepans, 1994; Mackinnon, McIntyre & Quance, 2005; Tarkka, & Paunonen, 1996; Tumblin & Simkin, 2001).

Hodnett et al.'s (2003) systematic review of 15 randomized control trials (N=12,791) found that continuous labour support was associated with: Reduced use of intrapartum pain medication (relative risk (RR) = 0.87, 95% confidence interval (CI) : 0.79-0.96), reduced use of analgesia/anaesthesia (RR = 0.90, 95% CI: 0.81-0.99), decreased operative vaginal deliveries (RR = 0.89, 95% CI: 0.83-0.96), decreased caesarean births (RR = 0.90, 95% CI: 0.82-0.99), increased spontaneous vaginal births (RR = 1.08, 95% CI: 1.04-1.13) and reduced likelihood of reports of negative experiences (RR = 0.73, 95% CI: 0.65-0.83) (Hodnett et al., 2003). Differing practices in some of these studies and the provision of support from people of different backgrounds (not just nurses), restricts the generalizability of these results to North American women. Despite these differences, the strong evidence demonstrating the benefits of continuous labour support has influenced the development of national and international guideline recommendations for continuous supportive care by nurses.

Health Canada (2000) and perinatal professional organizations recommend continuous supportive care by nurses for all women in active labour (AWHONN-Association of Women's Health, Obstetric and Neonatal Nurses, 2000; SOGC-Society of Obstetricians and Gynecologists of Canada, 2002). The SOGC guidelines for Fetal Health Surveillance propose continuous professional support for all women in active

labour, “one-to-one nursing recommended” (SOGC, 2002, p.1). AWHONN advocates that “continuously available labor support by a professional registered nurse is a critical component to achieve improved birth outcomes” (AWHONN, 2000). The Family-Centred Maternity and Newborn Care National Guidelines; Care During Labour and Birth states:

“when staffing patterns are being planned, an emphasis should be placed on keeping the nurse at the bedside to provide supportive care. Staffing recommendations entail one-to-one nursing care for active labour and birth, until completion of the fourth stage of labour” (Health Canada, 2000, p. 6).

Although labour support has been demonstrated to be valuable to the physical and emotional needs of women, work measurement studies done in Canadian hospitals have demonstrated that continuous nursing support is often not the practice (Davies et al. 2002; Gagnon & Waghorn, 1996; Gale, Fothergill-Bourbonnais & Chamberlain. 2001). These studies observed nurses spending more time outside the patient’s room (72.2-74.9%) performing activities such as charting or preparing medication than with the women they were caring for. In contrast, the percentage of time being spent in supportive care activities ranged from 6.1 percent in one study to 23.5 percent in another. Organizational barriers have been suggested in some studies to be one of the main factors preventing nurses from remaining with their patients (Davies et al. 2002; Graham, Logan, Davies & Nimrod, 2004; Hodnett et al., 2003). When studying the implementation of evidence-based guidelines, researchers suggest looking at organizational factors that can either promote or impede the practice of evidence-based nursing (Estabrooks, 2003; Foxcroft, 2000). Mackinnon, et al., (2003), suggest that “further research is needed to explicate how hospital procedures, administrative structures, and medical practices shape the support work of labor and delivery nurses” (p. 35).

As a childbirth nurse for over eighteen years, I was disillusioned by these statistics. I thought these numbers would have been much higher. In addition, I was completely unaware and surprised by the evidence demonstrated by Hodnett's review. This new knowledge led me on a quest to better understand the rationale for the gap between the evidence-based guidelines and the working reality of childbirth nurses. This quest led to the research described in this thesis.

The search strategy for the literature review described in the following chapters was mainly built on the Cochrane review by Hodnett et al. (2003). Referenced articles in this study were reviewed. In addition, the main concepts or text words in the title and the text including the index terms were used to search databases for related articles. Only published studies were sought using OVID Medline, Cinahl (1982-2005), Cochrane Library, Medline (1966-January 2005), Embase, Psychinfo and Pubmed. Studies identified during the database search were assessed for relevance to the topic under study. All papers that appeared to be relevant were retrieved and reviewed again for relevance to the study objectives.

In order to study the discrepancy between the guideline recommendations for continuous labour support and actual practice, a two-phase study was designed using both qualitative and quantitative methods. Combining qualitative and quantitative methods provides complimentary data which may reduce the limitations of using a single approach. Each research method exposes different characteristics of reality that would otherwise be unidentified using a single method (Polit & Beck, 2004).

The objective of Phase I of this study was to identify and understand the perceptions of nurses, nurse educators and birthing unit managers about the organizational barriers influencing nurses' ability to provide continuous labour support to women in active labour.

Chapter two of this thesis reports this first phase, an exploratory qualitative study, titled- Organizational Barriers to the Provision of Continuous Labour Support by Nurses. Semi-structured interviews were conducted with ten key informants and the interviews were then transcribed and analyzed using content analysis methods. The data from the first phase was then used to guide the development of a questionnaire for phase II.

The objectives of Phase II was to assess predictors of nurses' intentions to provide continuous labour support using the Theory of Planned Behavior (TPB) and quantify nurses' perceptions of the organizational barriers identified in Phase I. Additionally, nurses' knowledge of the benefits of continuous labour support and their familiarity with the national practice guidelines for supportive care were assessed. Chapter three reports this second phase titled- Understanding Nurses' Intentions to Provide Continuous Labour Support: An application of the Theory of Planned Behavior. This exploratory descriptive study, consisted of a theoretically-based survey of the childbirth nurses at two campuses of one hospital in Eastern Ontario. This newly developed questionnaire was designed to quantitatively measure predictors of nurses' intentions to provide continuous labour support and to explore the organizational factors influencing this practice.

Each report of these two independently executed studies was written as a manuscript for submission for publication to the Journal of Obstetric, Gynecologic, and Neonatal Nursing (JOGNN). These reports are therefore written as independent papers and should be read per se. JOGNN is a highly respected peer-reviewed journal that focuses on the health care needs of childbearing families, newborns, and women and is the official journal of the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN). With a readership of over

23,000, JOGNN is ideal to make the new knowledge presented in these papers available to many obstetrical nurses.

The fourth and final chapter of this thesis consists of a discussion and summary of the evidence demonstrated in each of the above mentioned studies. Study limitations are discussed, implications for nursing practice, education and policy are presented as are suggestions for future research. For the purpose of presenting this thesis as an entire document, all appendices are found at the end of the document. Tables and figures are found within the body of each paper as they will be presented in the journal manuscripts. Additional tables reporting more descriptive data supporting findings described as part of the thesis are attached as appendices. Additional formatting will be done to each paper prior to submission for journal publication.

#### Statement of Contributions

The following statement presents the contributions of collaborators of this thesis and is written in accordance with the guidelines of the Faculty of Graduate and Postdoctoral Studies at the University of Ottawa. Contributions of supervisory committee members in the development and execution of the study and preparation of manuscripts and the final thesis document are described.

The Master's candidate, Laura Payant, designed, implemented and managed all aspects of the study as part of the fulfillment of the requirements of the degree Master of Science in Nursing at the University of Ottawa. The Master's candidate completed all ethics submissions, recruited participants, carried out all interviews and interview transcription, developed all study materials, organized questionnaire distribution, collected all data, performed data analysis and wrote all documents and manuscripts included in this thesis. A

volunteer (Diane Day and Amy Terranova) from each birthing unit distributed and tracked the surveys in their respective unit. Xikuan Chen provided statistical analysis support.

Jennifer Clinch provided statistical support including data analysis, data interpretation and advice regarding data reporting and presentation for the quantitative study. Ellen Hodnett, Jill Gale, Jackie Tetroe, Debra Kaye, Wendy Gifford, Melissa Dougherty, Jill Francis and Ann Salvador provided expert review and evaluation of the questionnaire. In addition, Jackie Tetroe provided advice on theoretical interpretation and application.

Thesis supervisory committee members included Dr Barbara Davies as supervisor, and Drs Ian Graham and Wendy Peterson. All committee members are co-authors for both manuscripts included in this thesis. They provided advice on study conceptualization, development and execution, including design and timelines, as well as program and ethics requirements. They provided support, consultation and feedback during study implementation, data analysis and interpretation. Committee members also contributed to the development and finalization of the manuscripts reporting study results. Jennifer Clinch is also a co-author on the second manuscript. She contributed to the data analysis and interpretation of results and critically reviewed the manuscript reporting phase II. Co-authors for manuscripts were identified based on the authorship guidelines of the Ottawa Health Research Institute (2003) which state that co-authors must contribute sufficiently to the study conception and design, or acquisition of data, or analysis and interpretation of data, and must contribute to the manuscript content.

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## Chapter Two

### Organizational Barriers to the Provision of Continuous Labour

#### Support by Nurses

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Abstract

**Objective:** To develop an understanding of nurses' perceptions of organizational barriers influencing their ability to provide continuous labour support (CLS) to women in active labour.

**Design:** Descriptive, exploratory, qualitative study.

**Setting:** Two campuses of one hospital and a regional perinatal program in a large urban area of Ontario, Canada.

**Participants:** Purposeful sample of birthing unit staff nurses (N=4), birthing unit managers (N=2), childbirth nurse educators (N=4).

**Methods:** Semi-structured interviews with categorical content analysis.

**Results:** Initial content analysis revealed 11 themes. Organizational barriers identified by participants include: Inability to call in staff on short notice, unit acuity, team culture, women require less physical support post-epidural; lack of educational support by the hospital, team leader's organization of breaks and method of patient assignments, team strength, nurses' attitude that women need to sleep post-epidural, non-nursing duties and the use of a central fetal monitor system for fetal surveillance. Nurses reported lower intentions to provide CLS to women with epidural analgesia.

**Conclusion:** This study demonstrates the influence of organizational barriers on nurses' presence during childbirth and the difference in nurses' intentions to provide CLS to women with epidural analgesia. Future research is needed to understand nurses' intentions to provide continuous labour support to women with and without epidural analgesia.

## Introduction

Based on research suggesting that the continuous presence of a trained support person can improve outcomes for women (Hodnett, Gates, Hofmeyr & Sakala, 2003), the 2002 SOGC (Society of Obstetricians and Gynaecologists of Canada) Clinical Practice Guidelines on Fetal Health Surveillance in Labour, states that “women in active labour should receive continuous close support from an appropriately trained professional. One-to-one nursing recommended” (p.4). A similar recommendation is made by the Association of Women’s Health, Obstetric and Neonatal Nurses (AWHONN, 2000).

Observational studies demonstrated that these guidelines are not being practiced consistently in Canada (Davies et al. 2002; Gagnon & Waghorn, 1996; Gale, Fothergill-Bourbonnais & Chamberlain, 2001). In work sampling studies of supportive care activities by nurses, less than 25.1 to 27.8 percent of the time nurses were observed, was spent in their patient’s rooms and only 6.1 to 12.4 percent of this time, was being spent offering supportive care. The majority of nurses’ time (72.2 to 74.9%) was spent outside the patient’s room, and 38.8 to 47.6 percent of this time was spent providing indirect care (giving report, charting, preparing medications) (Gagnon & Waghorn, 1996; Gale et al. 2001). Similar results were reported by Davies et al. (2002) who found that only 13.3 to 23.5 percent nurses’ work time was spent in supportive care activities.

The results of these studies reveal a significant gap from the Canadian and American guideline recommendations of continuous labour support. This is of particular concern, given the evidence relating labour support with improved childbirth outcomes. Many organizational barriers that impede labour support by nurses have been identified, however, our understanding of these barriers and their effect on nurses’ practice is limited (Davies et

al., 2002). The gap between the evidence-based recommendations and actual practice of labour support by nurses and the influence of organizational barriers, is the foundation for this study. This study seeks to identify and understand the perceptions of nurses, nurse educators and birthing unit managers on the organizational barriers to the provision of continuous labour support by nurses.

## Literature Review

### *Labour support*

Labour support is an all encompassing term for the caring work, or social support, provided to women, by childbirth nurses during labour and birth (Davies & Hodnett, 2002; Hodnett, et al., 2003; Sauls, 2006). Labour support includes emotional support (continuous presence, reassurance, and praise), physical comfort (touch, massage, warm baths/showers, encouraging fluid intake and output), advocacy (communicating the woman's wishes), and offering of information (advice/information on coping methods, update on progress of labour) (Enkin, 2000; Health Canada, 2000; Hodnett et al., 2003). Although the types of support defined above are performed by nurses in all areas of practice, supportive care during childbirth requires an intense level of these types of support due to the powerful emotional and physical exertion of birth.

### *Benefits of Continuous Labour Support*

A systematic review of 15 randomized control trials (N=12,791) found the following benefits of continuous labour support: Reduced use of intrapartum pain medication (relative risk (RR) = 0.87, 95% confidence interval (CI) : 0.79-0.96), less use of analgesia/anaesthesia (RR = 0.90, 95% CI: 0.81-0.99), decreased operative vaginal deliveries (RR = 0.89, 95% CI: 0.83-0.96), decreased caesarean births (RR = 0.90, 95% CI: 0.82-0.99), increased

spontaneous vaginal births (RR = 1.08, 95% CI: 1.04-1.13) and reduced likelihood of reports of negative experiences (RR = 0.73, 95% CI: 0.65-0.83) (Hodnett et al., 2003). Despite the differences among the study centers' hospital conditions, regulations, routines and persons providing labour support, there were consistent descriptions of support being provided continuously or almost continuously during active labour. The authors concluded "all women should have support throughout labour and birth" (p.1). Because 13 of the 15 studies looked at support persons other than nurses such as midwives/midwifery students (5 studies), spouses/family members (3 studies), Lamaze instructors (1 study), laywomen (1 study) and doulas (3 studies), it could not be stated with certainty that continuous nursing care during labour would have the same beneficial affects. In addition, hospital conditions in 10 of the 15 studies were not comparable to Canadian and American hospitals, where the medical/nursing care can be highly technical as a result of equipment designed to monitor both the fetus and the mother. Therefore, the generalizability to Canadian and American women is questionable. Hodnett's review (2003), however, strongly demonstrates the benefits of continuous support regardless of who is providing the support.

*Physiological benefits:* Human and animal studies have suggested a relationship between the stress response (elevated catecholamine levels) from anxiety and fear and poor maternal and fetal outcomes. Increased catecholamines, have been found to reduce the contractility and efficiency of uterine contractions and decrease placental blood flow, thereby prolonging labour and potentially affecting the fetus (Adamsons, Mueller-Heuback, & Myers, 1971; Brownridge, 1995; DiMatteo et al., 1996; Lederman, Lederman, Work & McCann, 1981; Lederman, Lederman, Work & McCann, 1985; Rosen, 2004). Women who receive supportive care during labour and birth, report feeling less anxious and greater satisfaction

with their birthing experience (Copeland & Douglas, 1999; Hodnett et al., 2003; Tarkka, & Paunonen, 1996). Lowering anxiety levels through supportive care, may theoretically decrease the amount of catecholamines being released and therefore may be associated with less risk of prolonged labour and fetal distress.

A retrospective correlational study looked at the influence of nurses' care during labour on cesarean birth rate (Radin, Harmon & Hanson, 1993). This chart review and review of hospital log books found that nurses had cesarean section (C/S) rates ranging from 4.9 percent to 19 percent. No significant differences existed among the women cared for by nurses with either low or high cesarean rates for variables such as: Maternal age, gravidity, gestational age, infant weight, prenatal class attendance, insurance status, dilatation at the time the nurse assumed the woman's care, epidural analgesia, augmentation of labour, physicians and residents attending the delivery, and reliance on public assistance (Radin et al., 1993). However, cesarean section rates were significantly lower for nurses who used a psychosocial documentation tool (emotional characteristics of the mother). This finding suggests that nurses with the lower C/S rates placed more value on this type of information (Radin, et al., 1993). Although this study used retrospective methods, it was the first to provide direct evidence that psychosocial nursing care may independently influence cesarean section rates.

*Emotional benefits:* In a retrospective study eighty postpartum women were asked about their perceptions of nursing support during labour. Participants reported emotional support as being more helpful than physical support and pain medication (Bryanton, Fraser-Davey, & Sullivan, 1994). Although the retrospective design of this study increases the possibility of recall bias, it speaks to the influence of labour support by nurses. These findings are

consistent with a qualitative study (Mackey & Flanders-Stepans, 1994) that found 78 percent (n=61) of women interviewed, ranked emotional types of labour support such as information giving (41%) encouragement (36%) and presence (29%), higher than nursing competence (4%). Additionally, these participants were appreciative of nurses accepting them as individuals. These findings are suggestive of women appreciating nurses' interpersonal skills more than their technical skills (Mackey & Flanders-Stepans, 1994). Similarly when asked about perceptions of their nurse's role during labour and birth, nulliparous women (n=57) attending prenatal classes also placed more importance on emotional support by nurses such as touch compared with technical assistance (Tumblin & Simkin, 2001).

An exploration of the meaning of the nurse's presence during childbirth noted that nurse's presence was viewed as a form of emotional (being with), physical (being there) and advocacy (being for) support. Women interpreted presence as the nurse "being there" (p.28) for them (Mackinnon, McIntyre & Quance, 2005). These descriptive studies highlight important outcomes; the opinions of the recipients of nurses' care.

The birth experience can have a lasting influence (Goodman, Mackey & Tavakoli, 2004) even a "lifelong impact" (Simkin, 1991, p. 203) and can affect women's psychological well being (Goodman, et al., 2004; Simkin, 1991). Nurses in particular, are in a unique position to have a powerful influence on the physiological and psychosocial outcomes of the childbirth experience because in most North American hospitals, nurses spend more time with women in labour than other care providers (Beaton, 1990; Bryanton, et al., 1994; Gale et al., 2001; MacKinnon et al., 2005).

*Barriers*

Organizational barriers to labour support are described as those events or processes in the workplace that prevent a childbirth nurse from remaining with her patient. Examples of these barriers include: The structural layout of patient rooms, central monitoring systems (Davies et al., 2002; Graham, Logan, Davies & Nimrod, 2004), the physical environment of the hospital units, the system of patient assignment, non-nursing duties being required of nurses, insufficient time associated with managing technology (Gagnon & Waghorn, 1996; Gale et al., 2001; Hodnett et al., 2003), lack of educational training, lack of support from management, lack of leadership and non-involvement of nurses in the implementation process of new practice guidelines (Davies et al., 2002; Graham, et al., 2004). A highly litigious medico-legal atmosphere is also related to nurses' focus on managing technology (ex. computers, fetal monitors, intravenous pumps) versus labour support (Goldberg, 2002; Miltner, 2000).

In summary, supportive care by nurses during labour and birth is important to maternal and fetal outcomes. Therefore, increased supportive care by nurses may translate into improved patient outcomes. While some organizational barriers to nurses providing continuous labour support have been identified, the perceptions of nurses and the influence on care remains largely unknown (Davies, et al., 2002). This study was designed to provide additional information about organizational barriers to labour support. Staff nurses, nurse educators and nurse managers were asked to discuss organizational barriers nurses faced in providing continuous labour support. Obtaining the perceptions of educators, managers and nurses will expand the body of knowledge in this area.

## Method

### *Design*

This research was done using a descriptive, exploratory, qualitative design. This study was approved by the participating hospital's Research Ethics Board and the University Research Ethics Board (REB) (see Appendix A).

### *Participants/Setting*

A sample of key informants was purposefully selected from one hospital with two campuses and a regional perinatal program in a large urban area of Ontario, Canada. Campus A is a level three birthing unit which cares for women of all gestational ages and offers highly specialized neonatal care. Campus B has a level two birthing unit and cares for women over 32 weeks gestation. Despite these differences both campuses maintain one corporate labour support policy. Both birthing units average 3500 deliveries per year. The key informants included four Birthing Unit nurses, two Clinical Nurse Managers, two hospital-based Birthing Unit Nurse Educators and two nurse educators from a regional perinatal program. The hospital educators approached staff nurses and asked if they were willing to be contacted by the researcher about possible participation in a study. If they agreed, the researcher contacted them by phone, invited them to participate and set an appointment for the interview. The educators and managers were invited to participate by the researcher.

### *Data Collection*

Written informed consent was obtained from participants (Appendices B & C). Semi-structured individual interviews were conducted in a private room at the participants' workplace. Participants were asked ten open-ended questions and one knowledge

assessment question (Table 1). The questions on the organizational barriers, were worded using the individual participants' definitions of labour support and were informed by a review of studies that identified organizational barriers to labour support by nurses. The wording of the questions differed slightly to fit the person being interviewed.

**Table 1 - Interview questions**

Interview Questions
<ol style="list-style-type: none"> <li>1. What does the term labour support mean to you?</li> <li>2. How/under what circumstances do you provide labour support?</li> <li>3. How can you tell someone is receiving labour support?</li> <li>4. When do you find it difficult to provide the support you describe?</li> <li>5. What institutional/organizational barriers do you find limit your ability to provide supportive care to women and their families in labour?</li> <li>6. What is continuous one-to-one nursing and how does it differ from labour support?</li> <li>7. Describe what type of labour support you would provide for a patient who is a low risk primip, between the ages of twenty and thirty-five, without an epidural?</li> <li>8. What would be different if she had an epidural?</li> <li>9. What would help to improve the nurses' ability to provide continuous labour support to women in active labour?</li> <li>10. Do you know how much time the SOGC Guidelines on labour support, recommend that nurses spend with patients in active labour?</li> </ol>

### *Data Analysis*

All interviews were tape-recorded and transcribed verbatim by the researcher, using Word version 2002. All transcripts were read and reread to obtain a thorough understanding of the participants' views. Using a deductive approach (Polit & Beck, 2004; Pope, Ziebland & Mays, 2000), the four elements of labour support as defined in the literature: emotional, physical, informational support and advocacy (Health Canada, 2000, Hodnett et al., 2003), guided the categorization of the participants' definition of labour support. In addition, simple

counts were made each time reference was made to each element of labour support throughout the interviews.

An inductive approach was also taken to categorize and index the barriers to continuous labour support (Polit & Beck, 2004; Pope, et al., 2000). Recurring themes among participants were grouped until all distinctions of the barriers were reflected. The themes were then identified by which group (staff, managers and educators) perceived each barrier and a summary of the data was reviewed by the three other study investigators. Saturation of data was attained when participants no longer identified new elements of labour support or different organizational barriers. Counts were taken and totaled, in order to provide a summary of the data.

### Results

All ten participants who were invited to be interviewed, agreed to participate. When asked to define labour support, all participants made reference to physical, emotional and informational types of support (Table 2). Emotional support received the most references and was defined by actions such as touch, verbal encouragement and presence. Only five of the ten participants defined advocacy as a form of labour support. Content analysis of the perceived organizational barriers revealed 11 different themes (Table 3).

**Table 2 - Elements of labour support as defined by the participants**

Participant study #	Informational Support	Emotional Support	Physical Support	Advocacy
#1	***** (10)	***** (15)	***** (9)	* (1)
#2	*** (3)	** (2)	** (2)	(0)
#3	***** (7)	***** (6)	***** (7)	(0)
#4	***** (8)	***** (6)	***** (13)	(0)
#5	***** (7)	***** (15)	***** (7)	** (2)
#6	***** (6)	***** (11)	***** (7)	**** (4)
#7	**** (5)	***** (7)	***** (5)	** (2)
#8	**** (4)	***** (5)	***** (5)	*** (3)
#9	***** (5)	***** (6)	***** (8)	(0)
#10	* (1)	*** (3)	** (2)	(0)
Totals	56	76	65	12

\* represents each time reference was made to each element of labour support during the interviews

*Unit activity/Staffing.*

All ten participants identified the inability to call in staff at the last minute to meet the changing demands of the unpredictable unit activity as a significant barrier. All participants commented that when the unit is busy, the nurse-patient ratio is not adequate for continuous nursing care and that there is no support system in place to call in staff on short notice. Other staffing issues included the balance between experienced and inexperienced staff, resulting in a “strong” or “weak” team. The team’s strength, often dictated whether nurses could stay with their patient. A weak team would mean the more senior nurses have to be available to help other staff or be assigned to more than one patient. One nurse mentioned that it wasn’t unusual to be pulled from her patient’s room to go circulate for a cesarean section, leaving her patient to be cared for by another nurse.

*Team Culture*

All participants mentioned the unit’s philosophy of care guided the overall priorities of care, however a sub-culture or team culture existed, with differing philosophies toward

supportive care. Therefore, the amount of supportive care varied depending on the team of nurses working. If the team leader (care-facilitator) and the team of nurses were supportive of continuous care, then nurses were encouraged to stay with their patients. However, if the team or the team leader were not supportive of continuous care, then nurses felt it was frowned upon to stay with their patients.

*Lack of Educational Support from the Hospitals.*

Eight of the ten participants reported a lack of knowledge about labour support among many of the nurses, including those with many years experience. Participants attributed this lack of knowledge to a lack of educational updating by the hospitals. Participants agreed there was a need for updating and new knowledge for all nurses on the research and skills associated with labour support.

*Team leaders-Organization of Patient Assignments/Nurses' Breaks.*

Nurses and educators commented that it is not uncommon to be assigned more than one patient. Nurses also remarked the method of assigning or timing of breaks, was sometimes a barrier. For example, team leaders assigned nurses to take their break rather than encouraging nurses to go at a time the nurse felt was more appropriate for the patient. Nurses noted that covering other nurses for breaks interrupted their supportive care and kept them away from their patients. Some nurses also commented that if they were being relieved by a nurse with a different philosophy toward supportive care, when caring for a woman wanting natural childbirth, that sometimes their patient would receive an epidural while they were at break.

*Team strength*

Six of the ten participants mentioned the mix of inexperienced and experienced nurses on a shift can alter the team strength and dictate the patient assignments. More experienced nurses are often required to cover for junior nurses or take over their assignment if the patient needs to have a cesarean section.

*Non-nursing duties*

Nurses reported regularly having to fulfill non-nursing duties (e.g. stock patient rooms, empty laundry bags). Tasks such as these, forces nurses to leave their patients.

*Central Fetal Monitor*

The central fetal monitor was identified as a barrier by nurses and educators because it tended to draw nurses out of patient rooms. Some participants commented they were drawn out of patients' rooms because of the ability of the central monitor to provide information about the woman's contractions and fetal status. Others remarked that monitoring women using the central monitor was not appropriate and provided nurses with a "false sense of security."

*Women need less physical support post-epidural*

All participants identified a difference in the physical support needs of women, depending on whether or not they had epidural analgesia. Three of the four staff nurses interviewed, stated they did not provide continuous support for women with epidural analgesia. They also stated they felt that women needed, or wanted, to sleep and be left alone once they were comfortable. Therefore, different barriers (covering for breaks, having more than one patient, carrying out non-nursing duties, the central fetal monitor) had less of an impact when the woman had epidural analgesia.

*Other barriers*

Two participants identified nurses' attitudes toward epidural analgesia, as a barrier to continuous care. They suggest there is an attitude that once women are comfortable they no longer require continuous presence. One participant stated: "I think some staff say...Oh well she has an epidural and she wants to sleep. I will just put her to bed and monitor her baby and do her vitals when she needs them done and that's it". Lack of knowledge of the guidelines appeared to be an additional barrier. When asked if they knew the SOGC guidelines, the educators, one manager and only two of the four nurses, were aware that continuous nursing care was the recommended policy.

There were commonalities in perceptions of organizational barriers among all participants such as staffing issues, unit acuity and team culture. Barriers that were specific to the day-to-day nursing tasks such as: non-nursing duties, patient assignments and assignment of breaks, were mentioned by staff nurses more often than managers and educators.

**Table 3 – Organizational barriers as defined by participants**

	Inability to call in staff	Unit acuity	Team culture	Women need less physical support post-epidural	Lack of educational support by the hospital	Organization of breaks by team leaders	Team strength	Attitude that women need to sleep post-epidural	Non-nursing duties	Central Monitor	Method of assignment
<b>Participant Group (N=10)</b>											
Staff nurses n=4	****	****	****	****	***	****	***	***	***	***	**
Managers n=2	**	**	**	**	**	*	*	*	*		*
Educators n=4	****	****	****	****	***	**	**	*	*	**	*
Totals	10	10	10	10	8	7	6	5	5	5	4

\* represents each time reference was made to each organizational barrier during the interviews

**Table 4 – Participants’ views about organizational barriers**

Unit Culture	“I think...if the unit where you work, if it was made very clear that labour support... was the priority of care and there was nothing more important..., then I think that would make a huge difference... I mean not only the director level and the medical director and, but the care facilitators and you know everybody needs to think it’s the priority of care. I think that would make a difference”
Lack of Educational Support by the Hospital	“I think it’s always valuable to have updates, to have ““did you know”” sessions, those kinds of things”.
Organization of Breaks by Team leaders	“I think that the team leaders care more about getting you to break, than they do about leaving you with your patient...some don’t respect the nurses’ autonomy to make this judgment call”
Team Strength	“You know you might have to cover for breaks, it doesn’t seem like a lot but you might cover for first lunch then second lunch, well that’s at least an hour that you haven’t been 1:1”
Patient’s Need to sleep post epidural	“I have spent many 12 hour shifts where I should have been with her, but had to go auscultate here and do an epidural check there, and been pulled to go circulate in the OR and when you have a bond with a patient it’s hard to leave them”.
Central Monitor	“Often patients who get an epidural though, want and need an opportunity to rest. So yeah my care would be different if they had an epidural...So I might dim the lights and ask them to rest and let them have a sleep for an hour.”
Method of patient assignment	“nurses are often attracted back to the nursing station unfortunately, because of this, the central monitoring makes them feel comfortable because there is a baby sitter in the room...a false sense of security”.
Method of patient assignment	“You shouldn’t have a combination as much as possible, not a combination of a labour patient and a high risk patient so that you can do 1:1”.

### Discussion

All participants described organizational barriers to continuous supportive nursing care. These findings reveal how organizational attributes can influence the practice of clinical recommendations. Our finding that nurses perceived the unpredictable unit acuity and staffing as important barriers is consistent with the findings from previous studies (Davies et al., 2002; Gale et al., 2001; Graham et al., 2004). Team strength or the mix of inexperienced

and experienced nurses on a shift was a unique finding that has not been addressed in the literature. There is some emerging work to suggest that skill mix and staffing systems need to be considered when evaluating organizational infrastructures (Foxcroft & Cole, 2000; Registered Nurses Association of Ontario-RNAO, 2006). Further research is needed to explore the effect of team strength on the ability for birthing units to offer continuous nursing support. Some team leaders were identified as not being flexible in their organization of breaks or in their method of patient assignment. Since team leaders were not interviewed in this study, the views of the team leaders are needed to determine the rationale for their management methods. Further research is needed to assess how individual management styles of team leaders, can affect the provision of continuous nursing support.

There was an attitude among three of the staff nurses interviewed, that women do not require or necessarily want continuous care once they have received epidural analgesia; a finding that has little mention in the literature. Hodnett et al., (2003) noted that continuous support seemed to have more of an impact in those locations where epidural analgesia was not routinely administered (chi squared =7.35,  $P < 0.01$ ). The present professional guidelines do not differentiate between women with or without epidural analgesia in active labour, yet some nurses in this study felt there are different needs for these two groups. Therefore, further descriptive research is needed to ask women whether their needs and wishes for continuous nursing support differ once they receive epidural analgesia.

#### *Clinical Implications*

Sustaining a practice of continuous labour support by nurses requires a unit culture that believes in the benefits of such a practice. Graham et al. (2004) found that nurses were not convinced by the labour support evidence demonstrating a need for ongoing staff education

to increase the research awareness among nurses. Improving nurses' knowledge may improve the nurses' attitudes toward continuous support and in turn foster a unit culture that encourages such a practice. In addition, it may be beneficial to ensure that all team leaders are sensitive to the needs of the women, as well as those of the nurses through flexible patient assignments and flexible assignment of breaks. Encouraging nurses to determine the best time to leave their patients for break, needs to be respected and may increase autonomy among nurses. The Registered Nurses Association of Ontario (RNAO) Healthy Work Environments Best Practice Guidelines recommend organizations encourage nurse autonomy as a way to encourage best practice (RNAO, 2006). Birthing unit managers may consider ongoing staff evaluations of team leaders as a method of identifying problem areas.

A flexible scheduling system devised by the organization, to have nurses paid to be on-call and available on short notice (Davies & Hodnett, 2002; RNAO, 2006) as well as a system that ensures a balanced team (Foxcroft & Cole, 2000; RNAO, 2006) of experienced and inexperienced nurses on every shift may improve the availability of nurses to provide increased supportive care. A self-scheduling system may be an option for organizations to explore. Such a system would involve the nurses and provide them with some autonomy over their work schedule (RNAO, 2006). The RNAO Healthy Environments Best Practice Guidelines (2006) suggests that organizations need to ensure a culture that supports teamwork by involving nurses in decision making, making nurses accountable, autonomous and involved in decision making related to the work environment and care practices.

#### *Study Limitations*

The permanent team leaders were not interviewed in this study and therefore their views and opinions on the organizational barriers to nurses to providing continuous care were not

identified. The findings from this study reflect the views of nurses working in level two and level three birthing units and may or may not be applicable to nurses working in community hospitals. Therefore, the views and issues expressed may not be transferable to smaller community type settings. In addition, member checking was not done.

### *Study Strengths*

To ensure rigor, the interviews were tape-recorded and transcribed verbatim, then verified for accuracy. The transcripts were coded by two members of the research team and then verified by the two other members of the team. To ensure data validation, we obtained sufficient sampling and contextual completeness (Polit & Beck, 2004), by interviewing not only the staff nurses but also the managers and educators. The research team was comprised of an interdisciplinary group with three nurses and a sociologist, thereby providing varied experience and a broad interpretation of results.

### Conclusion

This study emphasizes the importance of understanding the influence of organizational barriers related to nurses' presence during childbirth and the difference in nurses' intentions to provide continuous labour support to women with epidural analgesia. Continued research is needed to determine the most significant barriers in order to plan strategies to improve the current practice. A larger scale assessment to prioritize the organizational barriers and to determine variables predictive of nurses' intentions to provide continuous supportive care, are discussed in another manuscript. Modifying organizational barriers may increase nurses' supportive care activities with women in active labour, thereby providing women with care consistent with national guidelines.

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## Chapter Three

Understanding nurses' intentions to provide  
continuous labour support: An application of the Theory of Planned Behavior

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## Abstract

**Objectives:** To examine the determinants of nurses' intentions to practice continuous labour support (CLS).

**Design:** An exploratory descriptive study based on the Theory of Planned Behavior.

**Setting:** Two campuses of one hospital in a large urban area of Canada.

**Participants:** A sample of 97 childbirth nurses (response rate 76%).

**Results:** The organizational barriers to CLS by nurses with the highest scores were: Unit acuity, method of patient assignment, need to cover other nurses for break and nurse-patient ratio. Nurses' attitude scores, subjective norm scores and intention scores regarding CLS for women with epidural analgesia were lower than those for a non-epidural case study ( $p < 0.0001$ ). Multiple regression analyses revealed that having taken labour support courses, subjective norms and perceived behavioral control, explained 55% of the variance in nurses' intentions to provide continuous support to women in active labour **without epidural analgesia**, whereas 88% of the variance in nurses' intentions could be explained by subjective norms and attitudes, when caring for a woman in active labour **with epidural analgesia**. Subjective norms contributed the most to the variance in nurses' intentions to provide continuous labour support.

**Conclusion:** Organizational barriers perceived by nurses to have the strongest impact on their ability to provide CLS need modification before a policy of CLS by nurses can be achieved. Nurses' intentions to provide CLS are strongly influenced by the expectations of others. Having taken labour support courses buffers the perceived social influences and increases nurses' intentions to provide continuous labour support.

## Introduction

With the ongoing progress in obstetric technology and a high rate of routine intrapartum medical interventions, such as continuous electronic fetal monitoring, oxytocin infusion and epidural analgesia, intrapartum nurses' responsibilities have changed from that of a predominantly supportive role to one of balancing technological care and supportive care (McNiven, Hodnett & O'Brien-Pallas, 1992; Hodnett, Gates, Hofmeyr & Sakala, 2003, 2002; Leavitt, 1986). It is known that there are significant benefits for women when women are provided with continuous labour support during childbirth. Benefits include: Reduced use of analgesia/anaesthesia, decreased operative vaginal births, decreased caesarean births, more likely to have a spontaneous vaginal birth and improved patient satisfaction (Hodnett et al., 2003). Because of the research findings on the benefits of labour support, national and international practice guidelines suggest continuous labour support be provided by nurses for all women in active labour (Association of Women's Health, Obstetric and Neonatal Nurses-AWHONN, 2000; Health Canada, 2000, Society of Obstetricians and Gynecologists of Canada-SOGC, 2002).

## Literature Review

Despite the evidence demonstrating the positive impact of continuous labour support, Canadian work sampling studies have demonstrated that nurses spend on average only 6 percent to 24 percent of their work time providing supportive care (Davies et al, 2002; Gagnon & Waghorn, 1996; Gale, Fothergill-Bourbonnais & Chamberlain, 2001; McNiven, Hodnett & O'Brien-Pallas, 1992). Many descriptive studies assessing women's views of nursing support have demonstrated that women value the emotional support provided by nurses through teaching, touch and presence over their technical skills (Bryanton, Fraser-

Davey, & Sullivan, 1994; Mackey & Flanders-Stepans, 1994; Mackinnon, McIntyre & Quance, 2005; Tumblin & Simkin, 2001). The growing popularity of private doula companionship may be an indication of dissatisfaction with the current system of maternity care (McNiven, et al., 1992).

The gap between the recommended policy for continuous labour support by nurses and actual practice is of particular concern. Studies have repeatedly demonstrated that a gap often exists between research evidence and actual practice among different health professionals, including nurses (Davies, 2002; Estabrooks, 2003; Grimshaw et al., 2001; Grimshaw, Eccles, Walker & Thomas, 2002; Hutchinson & Johnston, 2006; Shaw, 2001). In recent years, a growing number of reports have emerged to suggest that the organizational "context" has a strong influence on whether nurses can practice the recommended evidence-based guidelines (Davies, 2002; Estabrooks, 2003; Hutchinson & Johnston, 2006; McCormack et al., 2002). Mackinnon, et al. (2005) suggest that further research is needed to explain "how hospital procedures, administrative structures and medical practices enable or constrain the presence of the intrapartum nurse" (p.28).

Perceived social pressures within an organization have been suggested to have either a positive or negative affect on the behavior of individuals working within an organization (Ajzen, 1988; Estabrooks, 2003; Francis et al., 2004; Oandasan et al.; Rogers, 1995). Attitudes among staff toward evidence-based practice can also have a significant affect on behavior (Estabrooks, 2003; Francis et al., 2004; Graham & Logan, 2004; Hutchinson & Johnston, 2006; Parahoo, 1998). Evaluating the attitudes of individuals within an organization can be useful in determining strategies to improve evidence-based practice (Butler, 1995; Estabrooks, 2003; Estabrooks et al., 2003; Francis et al., 2004; Graham &

Logan, 2004). In fact, negative staff attitudes toward labour support have been reported by nurses as a barrier to providing continuous labour support (Davies & Hodnett, 2002). An individual's confidence and their perceived control to perform a behavior in the presence of obstacles can either facilitate or impede their behavior and must also be considered in the process of encouraging evidence-based practice (Ajzen, 1988 ; Bandura, 1986; Francis et al., 2004; Godin & Kok, 1996).

Commonly reported organizational barriers to research-based practice include: lack of time (Butler, 1995; Hutchinson & Johnston, 2006; Rodgers 1994), lack of authority, organizational infrastructure and lack of organizational support (Hutchinson & Johnston, 2006, Rodgers 1994). A few qualitative studies have investigated nurses' perceptions of barriers impeding their ability to provide continuous labour support (Davies et al., 2002; Davies & Hodnett, 2002; Graham, Logan, Davies, & Nimrod, 2004; Gale et al., 2001; Goldberg, 2002; Miltner, 2000). Some nurses attribute organizational barriers such as the structural layout of the birthing unit or having to perform non-nursing duties in preventing them from practicing continuous support (Davies et al. 2002; Graham et al., 2004; Hodnett et al., 2003). One study looking at the impact of continuous labour support by nurses on cesarean delivery rates in North American hospitals, found that continuous labour support did not influence the rate of cesarean deliveries (Hodnett et al., 2002). The researchers of this study concluded that the reason for this finding may be that "nursing care was powerfully influenced by the organizational culture" and "overpowered by the effects of birth environments characterized by high rates of routine medical interventions" (p. 1380).

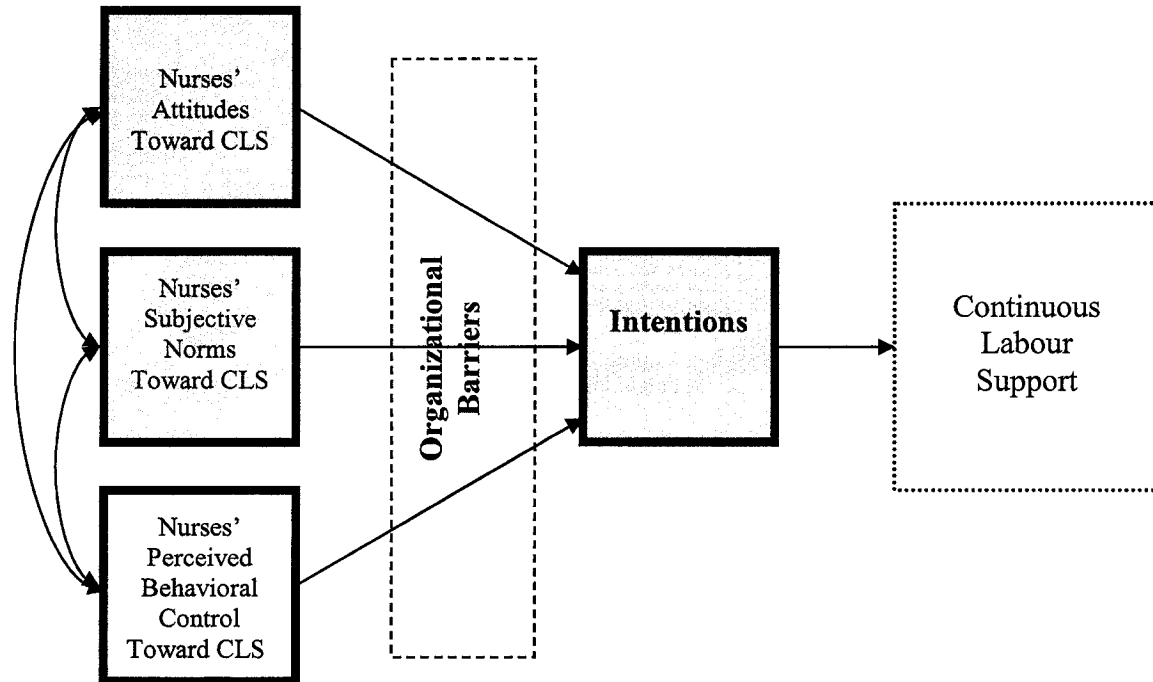
### Theoretical Framework

The Theory of Planned Behavior (TPB) provides a framework with well defined constructs that can be used to predict and understand factors influencing intention to perform a behavior (Ajzen, 1988). The TPB can be a valuable way of designing policies to assist in the adoption of clinical guidelines (Francis et al., 2004) and has been repeatedly applied in the study of health related behaviors, health-care provider behaviors and health policy education (Daneault, Beaudry & Godin, 2004; Russell, Kilburn, Conn, Libbus, & Ashbaugh, 2003; Walsh et al., 2005; Werner, & Mendelsson, 2001). Overall, these studies support the efficacy of the TPB in the prediction and understanding of health professionals' intentions to perform a behavior.

The TPB postulates that the determinant of a person's behavior, is their intention to perform the behavior and intention is influenced by three constructs: attitudes, subjective norms and perceived behavioral control (Ajzen, 1988; Francis et al., 2004). Attitude is defined as a person's beliefs or evaluation about the consequences of a behavior (Ajzen, 1988; Francis et al., 2004). Childbirth nurses' attitudes and personalities have been noted to influence their labour support practices (Davies et al., 2002; Graham, et al., 2004). Subjective norms are the person's perceived social pressure to perform a behavior (Ajzen, 1988; Francis et al., 2004). The unit culture toward continuous labour support can be a determinant of nurses' labour support practices (Davies et al., 2002; Davies & Hodnett, 2002; Graham, et al., 2004). The third construct, perceived behavioral control, reflects a person's perception of the ease or difficulty of performing the behavior (Ajzen, 1988; Francis et al., 2004). Davies & Hodnett (2002), demonstrated that birthing unit nurses had high self-efficacy and were confident in their labour support skills.

It is important to understand the underlying determinants and motivation of nurses' supportive care behavior. Our understanding of nurses' motivation to provide continuous labour support and the organizational influences is limited. No study to date has examined nurses' intentions to provide continuous labour support using a social cognitive framework. Identification of significant determinants of nurses' intentions will assist the researcher in planning strategies for policymakers that may encourage behavior change. Strategies to improve evidence-based practice, requires a better theoretical understanding of the basis of "professional behavior and behavior change" (Grimshaw et al., 2002, p. 242). This study utilized the TPB to predict childbirth nurses' intentions to provide continuous labour support in the face of perceived organizational barriers to women in active labour, one without epidural analgesia and one with. Figure 1 represents an adaptation of the Theory of Planned Behavior, by illustrating a conceptual framework as visualized at the onset of this study.

**Figure 1-** Variables predictive of nurses' intentions to provide continuous labour support (CLS); an adaptation of the Theory of Planned Behavior



\* adapted from Azjen, 1988

### Purpose

The purpose of this study was to complete a theoretically based assessment of predictors of nurses' intentions to provide continuous labour support using the Theory of Planned Behavior (TPB) and explore the organizational factors influencing this practice. The specific objectives for this study were as follows: 1) to measure nurses' perceptions of specific organizational barriers to continuous labour support 2) to assess nurses' knowledge of the benefits of continuous labour support as well as assess nurses' familiarity with the national practice guidelines for supportive care 3) to examine the association between demographic variables and the TPB constructs with nurses' continuous labour support intentions for the two scenarios and 4) to assess and compare the theoretical predictors (attitudes, subjective

norms and perceived behavioral control) related to nurses' intentions to provide continuous labour support.

## Methods

### *Survey development*

No previous instruments were found to measure nurses' intentions to provide continuous labour support therefore, it was necessary to develop a new tool. The survey development was guided by the manual for health services researchers on constructing questionnaires based on the Theory of Planned Behavior (Francis et al., 2004), the identification of the predictor constructs taken from previously published research (Davies et al., 2002; Graham et al., 2004; Hodnett et al., 2003) and the results of Phase I (an elicitation study) done previously. For all measurement variables, continuous labour support was defined as the nurse being present with the woman nearly all the time (with the exception of her breaks) for the purpose of providing information, emotional support, advocacy and physical support (Davies & Hodnett, 2002; Hodnett et al., 2003; Sauls, 2006). For the purposes of the questionnaire, the scenario with no epidural analgesia was referred to as the woman wanting natural childbirth.

The qualitative elicitation study (Phase I) revealed that nurses felt women with epidural analgesia did not require continuous labour support. The limited research available on the supportive care needs of women with epidural analgesia required the development of a questionnaire that addressed this finding. Therefore, two case scenarios were presented in the survey as follows: 1) a healthy primigravida in early active labour without epidural analgesia and 2) a healthy primigravida in early active labour with epidural analgesia. The survey questions measured the TPB predictor constructs (subjective norms, attitudes, perceived

behavioral control and intentions) as well as organizational barriers in each scenario. In addition, five questions were included to assess nurses' knowledge of the outcome benefits of continuous care and their familiarity with the professional guidelines. Demographic information such as professional experience, position (staff nurse or team leader), work (part-time/full-time) and education completed the questionnaire.

The following section describes in detail, the items that constituted the questionnaire. Internal consistency of the scales was tested using Cronbach's alpha. Questions reflective of the theoretical constructs were intermingled to avoid repetition (see Appendix D for complete questionnaire).

#### *Organizational Barriers*

A ten-item scale was used to measure organizational barriers affecting nurses' ability to provide continuous labour support in both scenarios. The items were based on statements of participants in Phase I and review of the literature. Responses were scored on a seven point Likert scale (1= not at all, 7= greatly). High scores on these items indicated the greater the impact the barrier had on the nurses' ability to provide continuous labour support. (see Appendix E).

#### *Attitudes*

A four-item scale was used to measure participants' attitude toward nurses providing continuous labour support to women with and without epidural analgesia (see Appendix F). Participants were asked to score their attitude toward continuous labour support on a seven-point Likert scale using four descriptors (1=bad practice, 7=good practice, 1=unhelpful, 7=helpful, 1= unnecessary, 7=necessary, 1=not satisfying, 7=satisfying). High scores on these items indicated a more positive attitude.

### *Subjective Norms*

Subjective norms toward providing continuous labour support were measured with a five-item scale (see Appendix G). Participants were asked to score five different subjective norm questions on a seven-point Likert scale (1=strongly disagree, 7=strongly agree). One item asked participants to report what the unit expectation would be for the woman in each scenario and the other items asked about the expectation of the manager, other nurses, the team leader and the Society of Obstetricians and Gynaecologists (SOGC). The higher the scores, the higher the perceived expectation.

### *Perceived Behavioral Control*

Participants' perceived behavioral control toward providing continuous labour support (see Appendix H) was measured using four items rated on a seven point Likert scale (1 =strongly disagree, 7=strongly agree). Items asked about the participant's perceived confidence, control, capability and ease with providing continuous labour support in each case scenario. Higher scores corresponded to higher perceived behavioral control.

### *Intentions*

A three-item scale was used to measure the participants' intentions to provide continuous labour support in each scenario (see Appendix I). This scale's items indicated the participant's intent, plan and will to provide continuous labour support and were rated on a seven point Likert scale (1=strongly disagree, 7=strongly agree). Higher scores corresponded to higher intentions to provide continuous labour support.

### *Knowledge and Past Behavior*

Assessment of participants' knowledge of the benefits of continuous supportive care was measured by asking five questions rated on a seven-point scale (1= strongly disagree,

7=strongly agree). Each outcome benefit was from those identified in Hodnett's (2002) systematic review in the Cochrane Database (decreased use of pain medication, decreased cesarean section rate, decreased operative vaginal delivery, decreased likelihood of a low Apgar score and increased patient satisfaction). In addition, participants were asked to score their familiarity with the National guidelines (AWHONN and SOGC) on a separate two item index. Nurses' past behavior with respect to continuous labour support was assessed by asking nurses to consider the last ten women they cared for, with and without epidural analgesia, and indicate to how many of them they provided continuous labour support.

#### *Content validity*

A panel of eight experts in the field provided feedback on the content validity. Panel members were asked to rate each question using a structured evaluation form with operational definitions using a four point scale (1=poor, 2=good, 3=very good, 4=excellent) (see Appendix J). Reviewers assessed the questionnaire for completeness, comprehension, readability and practical feasibility. Five nurses piloted the questionnaire and provided feedback on comprehension, time and ease of completion and practical feasibility. Based on the feedback and consensus among researchers, items were revised or removed. The study was approved by the research ethics boards of the university (see Appendix K) and the local ethics board of the participating hospital.

#### *Sample and survey administration*

The participating hospital is a two-campus center with a level three birthing unit (Campus A) and a level two birthing unit (Campus B). Campus A provides care for women of all gestational ages and offers highly specialized neonatal care. This birthing unit, averages 3000-3500 births per year with a staffing complement of one team leader per shift (four

permanent team leaders) as well as 13 nurses on day shift and 12 on night shift (12 hour shifts). Campus B provides care for women over 32 weeks gestation and averages 3500 births, with a staffing complement of one team leader per shift (four permanent team leaders) and 11 nurses per shift.

May 1, 2006, envelopes containing a questionnaire identified by a study number and a letter of explanation were distributed to all full-time and part-time Birthing Unit nurses working at both sites of the hospital (n=129). Exclusion criteria included those nurses on maternity leave, sick leave or working on a casual basis. A master list that linked the study number with the participant was kept in a locked filing cabinet to ensure participants' confidentiality. Two weeks after the initial distribution, a second distribution of questionnaires was provided to those who had not yet responded and all remaining questionnaires were collected May 31<sup>st</sup>, 2006.

#### *Statistical Analysis*

All data were analyzed using Statistical Analysis System, Version 9.1 (SAS Institute Inc., Cary, North Carolina, USA). The data obtained from the questionnaires were coded and entered into Microsoft ACCESS, searched for missing data and 10% of questionnaires were randomly checked by one member of the research team for data entry reliability. The proportion of data entry errors was below 1% (< 1 error per ten questionnaires verified). Missing demographic data were replaced by the population mean for that variable (frequency  $\leq 2/97$  for any one variable). The remainder of missing data (<8% for any one variable) were replaced with the population median for that variable. A Cronbach's alpha for each composite index around 0.6 or 0.7 was considered an adequate measure of internal consistency (Francis et al., 2002; Polit & Beck, 2004). Due to the exploratory nature of this

study, a level of significance of  $p < 0.05$  was considered for the analyses of differences between scenarios and for the multiple regression analysis. However, due to the four major variables being analyzed (attitudes, subjective norms, perceived behavioral control and intentions) for associations, we applied the Bonferroni adjustment for multiple comparisons which provided a conservative  $p$  value of 0.0125 ( $.05/4$  variables) (Rosner, 1995).

Nurses' knowledge scores were categorized as incorrect or correct, depending how they were answered. Questions scored with a five, six or seven on the 7-point Likert scale were considered correct and those scored a one to four were considered incorrect. Knowledge was then analyzed using the number of items answered correctly which then provided a score out of five. All dichotomous, categorical variables such as work (part-time or full-time), were made numerical by scoring one group as one and the other group as two in the order they appeared in the questionnaire (Darlington, 1990).

Descriptive statistics were used to describe participant characteristics, their labour support knowledge, the organizational barriers and nurses' past behavior. To examine differences between composite index mean scores between the two scenarios, the Student's  $t$ -test was performed. Composite index scores were calculated by summing each of the participant's scores for each item in the index. For example, in the intention index there were three questions, therefore the minimum score for this index would be three and the maximum score would be 21. Totals were divided by the number of items in each scale to provide a mean index score on the same scale as the individual items.

Using intentions as the dependent variable and the other variables (nurses' characteristics, organizational barriers, attitudes, subjective norms and perceived behavioral control) as independent (predictor) variables, multiple regression analyses were conducted for both

scenarios. Regression analyses allow direct comparison of the strength of the predictors to each other (Kerlinger & Pedhazur, 1973). Two steps were followed for the regression analysis. First, univariate statistics were initially run using Pearson's correlation to minimize the number of variables in the model. The strength of the relationships among variables was considered small if there was a correlation coefficient around 0.1, whereas a correlation coefficient around 0.3 was considered to be medium and 0.5 or greater was considered a large correlation (Cohen, 1988). To ensure entry of all important independent variables, criteria for entry into the model were set at  $p \leq 0.25$ . Second, the independent variables that met the criteria were entered into a stepwise regression to analyze their predictive associations on nurses' intentions to provide continuous labour support. Using backward elimination, those items with the highest p value were individually removed until the items that best described the most variance in intentions were identified (Darlington, 1990). The multiple regression analyses were calculated using the total score for each variable.

Due to the skewed nature of the majority of the data and the categorical nature of some variables, non-parametric tests were also completed. Comparison of the index mean scores was done using the Wilcoxon Signed-Rank test and the predictive effect of the construct variables was tested using Multiple Logistic Regression. For the logistic regression analyses all data were categorized into dichotomous categories with the dividing point at the median. If the median fell in the highest category (ie. seven) the division was between the highest and the next highest score (ie. six). The results of the non-parametric tests were essentially the same as those of the multiple regression, therefore, only the former results are presented.

## Results

The Cronbach alpha's ranged from 0.60-0.96 for all scales except the perceived behavioral control scale in the epidural scenario which had a Cronbach's alpha of 0.47. A total of 97 (76%) participants provided completed questionnaires for analysis. The majority of nurses had less than ten years experience and worked full-time as staff nurses. A profile of the characteristics of the participants is presented in Table 1.

Table 1 - Characteristics of nurses (n=97)

Variables	Frequency	Percentage
<b>Years of L&amp;D experience</b>		
≤10	51	52.6
11-20	18	18.6
21-30	21	21.6
≥31	7	7.2
<b>Work</b>		
Full time	69	71.1
Part time	28	28.9
<b>Position</b>		
Staff nurse	90	92.8
Team Leader	5	5.2
Both	2	2.1
<b>Education</b>		
Diploma	60	61.9
Baccalaureate	37	38.1
<b>Other specialized education*</b>	16	16.5
<b>Taken courses on labour support</b>		
No	29	29.9
Yes	68	70.1
<b>Graduated from nursing</b>		
≤1976	22	22.7
1977-1986	14	14.4
1987-1996	32	33.0
1997-2006	29	29.9

\*specialized education in addition to a diploma or bachelor nursing degree ie. midwifery, high-risk perinatal course or perinatal nurse certification

*Organizational Barriers*

The following top four barriers were noted to have the highest means: the unit acuity, the method of patient assignment, the need to cover other nurses for break and the ratio of nurses to patients. Although not scored as high as the aforementioned barriers, the unit philosophy of care and the team leader (care-facilitator) were also noted to be important barriers, with the team leader having a greater affect in the “epidural scenario” and the unit philosophy having a greater affect in the “no epidural scenario” (Table 2).

**Table 2 - Nurses' categorization of organizational barriers affecting their ability to provide continuous labour support (n=97)**

Organizational Barriers*	No epidural scenario		Epidural scenario	
	Mean Score	Median Score	Mean Score	Median Score
Unit Acuity	5.71	6.00	5.68	6.00
Method of patient assignment	5.41	6.00	5.31	6.00
Need to cover other nurses for break	5.43	6.00	5.49	6.00
Ratio of staff nurses to patients	5.38	6.00	5.52	6.00
Unit's philosophy of care	5.37	6.00	4.95	6.00
Team leader	4.73	5.00	5.06	6.00
Non-nursing duties	3.63	3.00	3.75	3.00
Need to consult with colleagues at the central nursing station	2.78	3.00	2.91	2.00
Central Fetal Monitor	2.46	2.00	3.70	4.00
Location of patient's chart	2.23	1.00	2.33	2.00
Composite scores	4.31	4.40	4.47	4.60
Difference in composite mean scores between scenarios†			$t = -1.99$ $df = 96$ $p = 0.05$	
Cronbach's Alpha		0.85		0.81

\*range of scores 1-7, with 1 = Not at all, 7 = Greatly

† comparison of composite mean scores between the epidural and no epidural scenarios, p-value calculated using the Student's *t*-Test

*TPB constructs*

Nurses reported higher attitude, subjective norm and intention scores toward providing continuous supportive care to the woman without epidural analgesia. This is demonstrated by the consistently higher composite mean scores in the “no epidural” scenario and a statistically significant difference in the comparison of composite mean scores between scenarios for each of the TPB constructs. Nurses reported high perceived behavioral control scores in both scenarios, however, there was no significant difference in the composite mean scores between scenarios for this index. Table 3 provides a summary of the theoretical constructs of the Theory of Planned Behavior.

**Table 3 - Summary of major constructs of the Theory of Planned Behaviour (n=97)**

	No epidural scenario				Epidural Scenario				Difference in composite mean scores between scenarios
	Mean	Standard Deviation	Median	Cronbach's Alpha	Mean	Standard Deviation	Median	Cronbach's Alpha	
Intentions*	6.49	0.78	7.00	0.91	5.07	1.81	5.33	0.96	t=8.07 df=96 P < 0.0001†
Attitudes*	6.43	1.15	7.00	0.90	5.41	1.57	5.75	0.93	t=6.34 df=96 P < 0.0001†
Subjective Norms*	6.02	0.78	6.20	0.73	4.70	1.69	4.80	0.92	t=8.61 df=96 P < 0.0001†
Perceived Behavioral Control*	6.07	0.84	6.25	0.60	6.00	0.75	6.25	0.47	t=0.93 df=96 P = 0.37†

\*range of scale 1-7

† comparison of composite mean scores between the epidural and no epidural scenarios, p-value calculated using the Student's t-Test

*Knowledge and Past Behavior*

Of the 97 nurses, 63.9% scored 60% or more (answered  $\geq 3/5$  questions accurately) on the knowledge assessment questions (see Table 4 for descriptive data), 43.3% were familiar with the AWHONN (Association of Women's Health, Obstetric and Neonatal Nurses) guidelines (M = 3.91) and 75.3% were familiar with the SOGC (Society of Obstetricians and Gynecologists of Canada) guidelines (M = 5.35).

**Table 4 – Descriptive summary of nurses' knowledge scores on the outcome benefits of continuous labour support (n=97)**

Continuous labour support for all women in active labour would...	Mean Score	Median Score
Decrease the likelihood of pain medication*	4.98	5.00
Decrease the likelihood of a cesarean section*	4.73	5.00
Decrease the likelihood of an operative vaginal delivery*	4.66	5.00
Decrease the likelihood of a low Apgar score (<7 at 5 minutes) *	4.16	4.00
Increase patient satisfaction*	6.44	7.00

Cronbach's Alpha=0.85

Mean number of questions answered correctly = 3.29

Median number of questions answered correctly = 4.0

\* Range of scores 1 – 7

Nurses' past behavior with respect to continuous labour support practice was reported to be much higher for women without epidural analgesia. Nurses reported having provided continuous labour support to a mean of 9/10 low risk primigravida women without epidural analgesia, and 5.2/10 low risk primigravida women with epidural analgesia (Table 5).

**Table 5 Nurses' report of providing continuous labour support (CLS) to their last 10 low risk primigravidas (past behavior)**

To the last ___ patients	Percentage of nurses who reported continuous labour support (n=97)	
	No epidural (%)	Epidural (%)
10 / 10	47.4	19.6
9 / 10	22.7	1.0
8 / 10	19.6	8.3
7 / 10	8.3	9.3
6 / 10	0	2.1
5 / 10	2.1	19.6
4 / 10	0	6.2
3 / 10	0	7.2
2 / 10	0	10.3
1 / 10	0	5.2
0 / 10	0	11.3
<b>Mean # of patients/ 10</b>	9.0	5.2
<b>Median# of patients / 10</b>	9.0	5.0

*Univariate Analyses*

Univariate analyses in the “no epidural” scenario demonstrated a small negative correlation between the organizational barrier index and intentions, but no correlation in the “epidural scenario”. Consistent with the underlying assumptions of the TPB (Ajzen, 1988), attitudes, subjective norms and perceived behavioral control were individually highly correlated with nurses' intentions in both scenarios (see table 6). Work (part-time, full-time, previously taken labour support courses, labour support knowledge, AWHONN familiarity and past behavior all had small correlations with intentions in the “no epidural scenario” ( $r = 0.14-0.23$ ,  $p \leq 0.25$ ). In the “epidural” scenario position (staff nurse or team leader), previously taken labour support courses, AWHONN familiarity and past behavior had small to large correlations with intentions ( $r = 0.14-0.72$ ,  $p \leq 0.25$ ) (Table 6).

**Table 6 Univariate analysis of correlations\* among intentions and nurses' characteristics**

	Intentions	
	No Epidural	Epidural
Organizational Barriers	r = -0.12, p = 0.25	-
Work† (part-time-1, full-time-2)	r = 0.17, p = 0.10	-
Position† (staff nurse-1, team leader-2)	-	r = 0.14, p = 0.15
Taken labour support courses† (no-1, yes-2)	r = 0.23, p = 0.02	r = 0.28, p = 0.006
Labour support knowledge	r = 0.14, p = 0.18	-
AWHONN familiarity	r = 0.20, p = 0.05	r = 0.35, p = 0.0003
Past Behavior	r = 0.19, p = 0.06	r = 0.72, p < 0.0001
Subjective Norms	r = 0.70, p < 0.001	r = 0.89, p < 0.0001
Attitudes	r = 0.41, p < 0.001	r = 0.87, p < 0.0001
Perceived Behavioral Control	r = 0.55, p < 0.001	r = 0.49, p < 0.0001

- indicates correlation p value  $\leq 0.25$

\*correlations calculated using Pearson Correlation

†categorical variables were assigned numerical values for analysis purposes

### *Final Regression Results*

In the "no epidural scenario", subjective norms, perceived behavioral control and having taken courses on labour support explained 55% of the variance in nurses' intentions to provide continuous labour support. Subjective norms and perceived behavioral control contributed more to the prediction of intention than having taken labour support courses. In the epidural scenario, subjective norms and attitudes explained 88% of the variance in nurses' intentions to provide continuous labour support, with subjective norms contributing more to the variance in nurses' intentions. Table 7 shows the results of this analysis, including the standardized regression parameters to allow the reader to assess the relative importance of each variable in the model.

**Table 7 – Final multiple regression analyses on intention**

Variable	Parameter Estimate	Standardized Parameter Estimate	p-value
<b>*Patient without an epidural – Model R<sup>2</sup> (%) = 55</b>			
Labour Support Courses	0.79	0.16	0.03
Subjective Norms	0.33	0.56	<0.0001
Perceived Behavioral Control	0.16	0.23	0.006
Intercept	4.16	0	0.006
<b>**Patient with an epidural – Model R<sup>2</sup> (%) = 88</b>			
Subjective Norms	0.34	0.54	<0.0001
Attitudes	0.40	0.46	<0.0001
Intercept	-1.60	0	0.02
No Epidural - predicted intention = 4.16 + 0.79(LS courses) + 0.33(SN) + 0.16(PBC)			
Epidural - predicted intention = -1.6 + 0.34(SN) + 0.40(Att)			

### Discussion

This study contributes to our understanding of the determinants of nurses' intentions to provide continuous labour support. Nurses in this study had lower intention scores to provide continuous labour support to women with epidural analgesia compared to women without. This unique finding is an important contribution to nursing knowledge on labour support. Gagnon & Waghorn (1996) reported no differences in the amount of supportive care being provided to women with or without epidural analgesia in their work sampling study. However, other work sampling studies did not make this distinction. With epidural analgesia rate of 68.4% in Ontario teaching hospitals (Ontario Perinatal Statistical Report, 2003), this may explain why observational studies have captured such low rates of supportive care by nurses. The difference in nurses' attitude, subjective norm and intention scores toward women with epidural analgesia is a major finding of this study and additional research is needed to explore it further. In addition, future research is needed to determine if the supportive care needs of women with epidural analgesia differs from those of women without. To our knowledge this is the first study to examine nurses' intentions to provide

continuous labour support, therefore, there were no comparison studies to substantiate these results.

Significantly lower attitude and lower intention scores toward continuous labour support were found in the “epidural scenario” and nurses reported providing CLS to half as many women with epidural analgesia compared to women without. A possible explanation for this finding may be the significantly lower subjective norm scores in the “epidural scenario”. This finding suggests that there are less social expectations to provide continuous care to women with epidural analgesia. The higher subjective norm scores in the “no epidural scenario” may indicate a stronger social expectation for nurses to provide continuous labour support to women without epidural analgesia. In fact, regression analyses identified subjective norms as the strongest predictor of nurses’ intentions to provide continuous labour support in both scenarios. Penny Simkin in a roundtable discussion on labour support (Ruhl, 2006), stated that there is a common myth that women no longer have emotional needs when they are pain-free.

Consistent with other studies (Davies & Hodnett, 2002; Gale, et al., 2001; Graham et al., 2004; Hodnett et al., 2002 & Miltner, 2000), nurses perceived organizational barriers as affecting their ability to provide continuous labour support. The mean scores for each barrier indicate the order of importance in which the barriers were likely viewed. The higher scored barriers may indicate that nurses perceived these to have a greater influence on their ability to provide continuous labour support. The unpredictable unit acuity and the inability to provide a nurse-patient ratio to accommodate continuous care were the highest scored barriers to this practice. Although the case scenarios presented in this study identified that there was adequate staffing to be assigned only one patient, nurses consistently scored

staffing and unit acuity as a barrier to continuous care. This would suggest that these barriers may be significant factors inhibiting nurses from performing continuous care in actual practice. Nurses also scored the need to cover other nurses for break and the method of patient assignment as important barriers. This finding may be due to the nature of the staffing in these units. Although staffed for one-to-one nursing, this staffing ratio does not account for covering for breaks and therefore nurses are required to leave their patients to relieve other nurses.

A small negative correlation was noted between organizational barriers and nurses' intentions to provide continuous labour support in the no epidural scenario. In addition, a negative correlation was found between organizational barriers and nurses' perceived behavioral control and subjective norms in the "no epidural" scenario. However, these barriers did not contribute to the variance in intentions in the multiple regression analyses. Although these barriers did not have a statistically significant impact on intentions, the magnitude of influence of these barriers cannot be dismissed. Elimination of these barriers could potentially have strong implications for improving the present labour support practice.

Knowledge assessment of the outcome benefits of continuous labour support demonstrated a knowledge deficit among many nurses. Of the 97 nurses, 63.9 percent were able to answer three to five of the five questions accurately with a mere 37 percent answering all five questions accurately. This finding demonstrates that nearly 40 percent of nurses in this sample are unaware of the evidence to support the benefits of continuous labour support. The distribution of knowledge scores indicated that nurses are aware that continuous support improves patient satisfaction, however they are less aware of the physiological benefits (Appendix L). From a practice perspective, the identified knowledge deficits are of concern.

Nurses in Graham et al.'s, (2004) study, needed to believe in the evidence fundamental to a guideline recommendation of labour support in order for nurses to alter their attitudes and behavior. Knowledge or lack of knowledge of the benefits of continuous labour support, may be a contributing factor to nurses' intentions to provide continuous supportive care. In fact, the small correlation between nurses' knowledge scores and intentions in the "no epidural" scenario may indicate a need for educational updating. Furthermore, previously taken labour support courses significantly contributed to the variance in intentions in this scenario. Staff education/knowledge appears to be a contributing factor to continuous labour support practice by nurses. Education should be the foundation of any intervention to improve the amount of supportive care being provided by nurses. Kardong-Edgren (2001), suggests that "clinical scholarship in the obstetric setting is one way to begin changing ritualized practices, incorporating evidence-based practice, and improving nursing care" (p.371).

Nurses indicated that they were more familiar with the SOGC guidelines than the AWHONN guidelines (Appendix M). A possible explanation may be that the hospital labour support policy in the participating institution, is based on the SOGC recommendations, therefore nurses can identify with this guideline. AWHONN membership is a paid membership and only 175 nurses in Ontario belong to the association (AWHONN Demographic Report, 2006). Therefore, of the 4,921 nurses working in maternity/newborn in Ontario (Canadian Institute for Health Information, 2006) less than 4% are members of this professional organization. The majority of childbirth nurses are therefore not likely to be familiar with AWHONN's guidelines.

When predictors of nurses' intentions to provide continuous labour support were examined, a distinct pattern emerged for each case scenario. The theoretical constructs

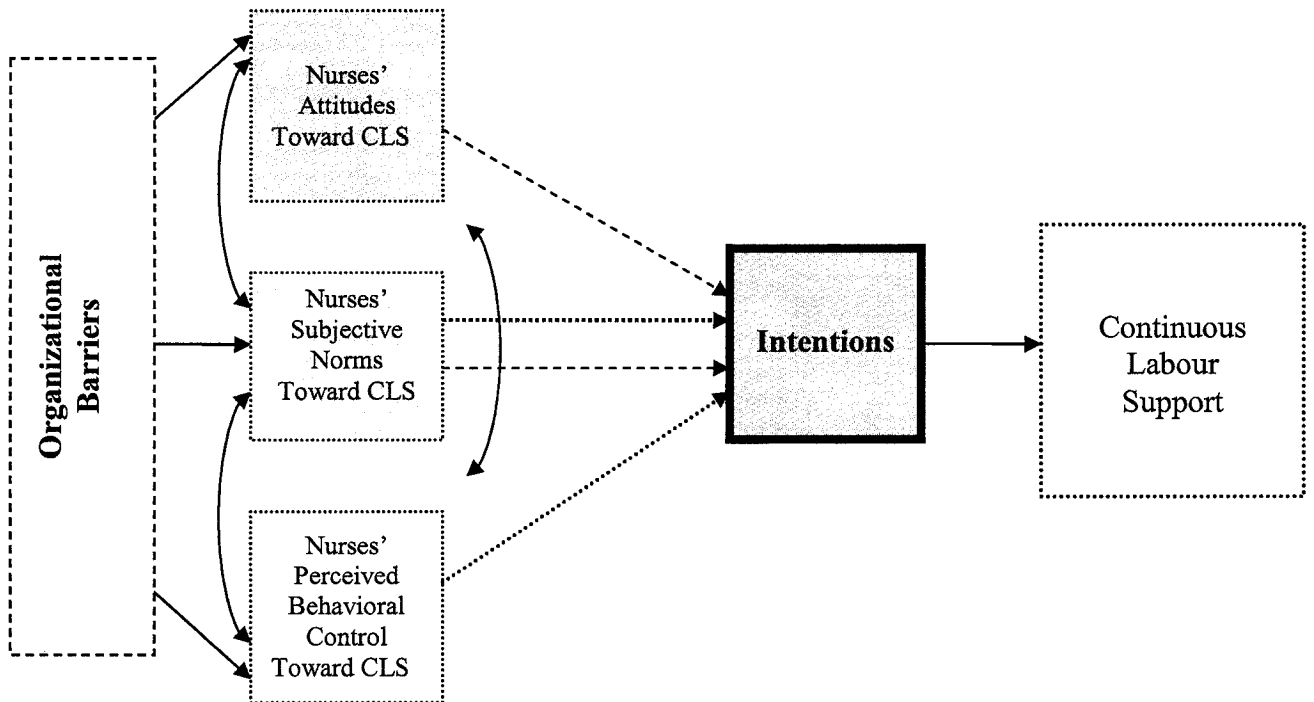
appeared more prominent than the demographic factors in predicting nurses' intentions. In the "no epidural scenario", subjective norms, perceived behavioral control and having previously taken labour support courses were the strongest predictors of nurses' intentions to practice continuous labour support; with subjective norms contributing the most to the variance in intentions. In the epidural scenario, subjective norms and attitudes were the strongest predictors of nurses' labour support intentions, with subjective norms contributing more to the variance in intentions.

Subjective norms, being the common denominator contributing the most to the variance in nurses' intentions in both scenarios speaks to the influence of this construct. Hodnett (1997), suggested that "colleagues exert considerable pressure" on new staff "to conform to the norm...Nurses who deviate from this norm, risk being shunned, set apart, and even ridiculed by their peers" (p.80). This finding supports the literature that identified that the organizational culture can act as a barrier or a facilitator to continuous labour support by nurses (Graham et al., 2004; Hodnett, 1997; Hodnett et al., 2002; Kardong-Edgren, 2001) and suggests that perceived subjective norms, may be a crucial element influencing nurses' intentions to provide labour support. When addressing changes to increase the amount of labour support being provided by nurses, the perceived expectations of the unit should be explored (Graham et al., 2004; Hodnett et al., 2002 & Mackinnon, et al., 2003). Research is needed to understand where this unit culture stems and what interventions are needed to empower nurses to provide individualized, continuous labour support in the face of traditional social norms. Institutional ethnography may be a useful methodology to explore the social and organizational factors affecting the everyday support work of intrapartum nurses (Mackinnon, et al., 2003).

Figure 2 may be a more accurate adaptation of the TPB in this application. Elements of the model explained a large proportion of the variance in nurses' intentions to provide labour support. Although organizational barriers were not an independent predictor of intentions, nurses reported that several organizational barriers influenced their practice. Therefore, the organizational barrier variable is placed to the left rather than the right of the theoretical constructs in this adaptation. In this application the barriers are mediated through the constructs.

**Figure 2** Variables predictive of nurses' intentions to provide continuous labour support

A revised adaptation of the Theory of Planned Behavior



\* adapted from Azjen, 1988  
 -----> dashed arrow reflects the "epidural scenario"  
 .....> dotted arrow reflects the "no epidural scenario"

*Clinical Implications*

Much of the past literature has drawn attention to the importance of organizational barriers in inhibiting the support work of nurses (Davies & Hodnett, 2002; Davies et al., 2002; Gale, et al., 2001; Graham et al., 2004; Hodnett, 1997; Hodnett et al., 2002; Kardong-Edgren, 2001 & Simkin, 2002). This study demonstrated a negative correlation between organizational barriers and nurses' perceived behavioral control, subjective norms and intentions in the "no epidural" scenario. These results suggest several intervention points for individuals and organizations interested in increasing the quantity and quality of supportive care being offered by nurses. A move toward clinical learning is a starting point in changing traditional practices toward the evidence-based practice of continuous labour support (Davies et al, 2002; Graham et al., 2004; Kardong-Edgren, 2001; Miltner, 2000). "This is a generation of nurses who have practiced only in an era of fetal monitors and may not know how to provide one-to-one labor support to a laboring woman" (Kardong-Edgren, 2001, p. 372), therefore ongoing labour support skills updating (Davies & Hodnett, 2002; Graham, 2004; Kardong-Edgren, 2001; Simkin, 2002) and skills testing (Kardong-Edgren, 2001) needs to become part of regular education instruction. Evidence-based practice topics and research articles need to be discussed regularly on birthing units (Kardong-Edgren, 2001). A labour support unit committee may provide a venue for educational interventions and open discussion.

Gagnon & Waghorn (1996) suggest that nurses do not value supportive care as demonstrated by the fact that this type of care is rarely documented in the patients' charts. Introducing specific documentation tools that specify labour support activities may prompt nurses to implement them (Davies et al., 2002 & Gale, et al., 2001). In order for nurses to

change their labour support practices, their beliefs regarding the benefits of continuous care must change (Graham et al., 2004; Kardong-Edgren, 2001 & Miltner, 2000). As suggested by Graham et al. (2004), an association exists between attitudes and behavior change.

Presenting the evidence to support a practice of continuous labour support may influence nurses' attitudes and in turn influence their labour support behavior. In fact attitudes were highly correlated with nurses' knowledge scores in the "no epidural scenario". Davies et al., (2002), noted that a structured labour support intervention increased the time nurses spent providing labour support at one tertiary hospital but not in the other community hospital. The authors attributed this change in practice to a change in attitudes among the nurses. The Theory of Planned Behavior proposes that a person's behavior is partially influenced by their attitudes (Ajzen, 1988; Francis et al., 2004). The findings of this study support this hypothesis as nurses' attitudes were significantly and independently correlated with their intentions to provide continuous labour support in both scenarios.

Education alone regarding supportive care may not be sufficient. This study demonstrated that a supportive unit culture is required to foster higher nurses' intentions toward continuous labour support. In this study, expectations of team leaders, managers, other nurses and the Society of Obstetricians and Gynecologists of Canada, influenced nurses' intentions to provide continuous labour support. Therefore, collaborative support from these groups may inspire a unit culture and a unit philosophy that not only promotes but expects continuous care by nurses. Leadership and management support are essential elements in the implementation of new obstetrical practice guidelines (Davies & Hodnett, 2002; Davies et al., 2002; Graham et al., 2004; Kardong-Edgren, 2001).

The RNAO Healthy Environments Best Practice Guidelines (2006) recommends involving staff in policy development in order to facilitate change. Collaborative involvement of nurses and team leaders in developing standard policies (Graham et al., 2004; Hodnett et al., 2002) for patient assignments, break assignments and covering for breaks may encourage acceptance among staff and consistency in assignment methods among team leaders.

#### Limitations

An important limitation of this study is that selection biases are likely to exist because of the sample of nurses from two campuses of a single institution, which may reduce the generalizability of our findings, however, 76 percent of nurses completed the survey indicating good internal reliability. Second we did not obtain a prospective assessment of nurses' labour support behavior, therefore we were not able to examine the relationships between intentions and actual behavior. However, the efficacy of the Theory of Planned Behavior in predicting and understanding behavior has been well established (Ajzen, 1988). Third, due to MScN program time constraints, the survey test-retest reliability was not determined prior to circulation of the survey. Therefore the stability of the answers at different time intervals is not known. Fourth, the Cronbach's alpha coefficient was below .6 for the perceived behavioral control index in the epidural scenario therefore the reliability of this index is low. Despite these limitations, this is the first study to examine nurses' intentions to provide continuous labour support and to quantitatively measure organizational barriers affecting nurses' ability to provide continuous labour support.

### Conclusions

Given the demonstrated benefits of continuous labour support for mothers (Hodnett et al., 2003), all women should receive continuous emotional, physical and culturally sensitive support (Enkin, 2000; Hodnett et al., 2003). Nurses in this study reported providing continuous labour support less often to women with epidural analgesia. Predictor variables of nurses' intentions to provide continuous labour support are different for women with epidural analgesia compared to women without. Subjective norms appear to be the most significant variable contributing to the variance in nurses' intentions to provide continuous labour support to women with or without epidural analgesia. For birthing unit policy-makers looking to increase the amount of supportive care being offered by nurses on their birthing units, every effort should be made to address specific organizational barriers particularly nurses' perceived subjective norms. Future research is needed using experimental designs with educational interventions, to address the determinants of nurses' intentions. Additionally, a randomized controlled study is needed to explore the supportive care needs of women with epidural analgesia. Increasing the amount of supportive care being provided by nurses will provide women in childbirth with evidence-based practice consistent with national guidelines.

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## Chapter Four

## Thesis Conclusion

Nurses who provide intrapartum care have an opportunity to make a profound impact on the women in their care. The influence of intrapartum support on the physical and psychological outcomes of childbirth, have been measured and strong evidence exists to support that all women should have continuous presence of a professional support person during childbirth (Hodnett, Gates, Hofmeyr & Sakala, 2003, Enkin, 2000). Nurses in North America, spend the most time with intrapartum women and less than 10% of women are attended by midwives or doulas (Ontario Perinatal Statistical Report, 2003), so it is fitting that nurses provide the continuous support (Beaton, 1990; Bryanton, et al., 1994; Gale, Fothergill-Bourbonnais & Chamberlain, 2001; MacKinnon, McIntyre & Quance, 2005). Work sampling studies on labour support have demonstrated that despite guideline recommendations for continuous labour support by nurses (AWHONN-Association of Women's Health, Obstetric and Neonatal Nurses, 2000; SOGC-Society of Obstetricians and Gynecologists of Canada, 2002), the majority of nurses' work time is spent outside patients' rooms (Davies et al. 2002; Gagnon & Waghorn, 1996; Gale et al. 2001).

Modern technology and organizational barriers make continuous presence difficult for nurses. Nurses are required to attend to technological equipment such as monitors or intravenous drips and pumps. This can sometimes take the nurse away from supportive care activities (Enkin, 2000). Organizational context has been identified in the literature as a barrier to implementing evidence-based care in many health care settings (Davies, 2002; Estabrooks, 2003; Hutchinson & Johnston, 2006; McCormack et al., 2002) including birthing units (Davies & Hodnett, 2002; Graham, Logan, Davies & Nimrod, 2004; Gale et al., 2001;

Hodnett, 2003; Mackinnon et al., 2005). These organizational factors, however, are not well understood. This study sought to explore these factors in more detail from both an organizational perspective as well as a theoretical perspective.

This thesis is made up of manuscripts that report the findings from two independent studies exploring factors related to nurses' intentions to provide continuous labour support. The first study (Phase I) consisted of an exploratory study using qualitative methods. Ten semi-structured interviews with key informants explored the organizational barriers to continuous labour support by nurses. Phase I study findings revealed that many nurses attribute their inability to provide continuous care to various organizational barriers such as: inability to call in staff on short notice, unit acuity, team culture, lack of educational support, the team leader's organization of breaks and method of patient assignments. Educators and managers identified the same barriers as nurses however, managers mentioned barriers that were specific to the day-to-day nursing tasks such as: non-nursing duties, patient assignments and assignment of breaks, less often.

The second study (Phase II) was a sample survey, designed to measure organizational barriers and to determine predictors of nurses' intentions to practice continuous labour support with women in childbirth with and without epidural analgesia. The Theory of Planned Behavior (TPB) guided the survey development (Francis et al., 2004) and provided a practical framework to assess nurses' attitudes, subjective norms, perceived behavioral control and intentions toward providing continuous labour support. Furthermore, this framework demonstrated what demographic variables contributed to intentions in this application. The findings from this second study demonstrated the influence of nurses' perceived subjective norms on their intentions to provide continuous labour support.

The purpose of this final chapter is to present a short summary of the most significant findings from these studies. In addition, the implications for nursing practice, education, policy and research will be discussed. Finally, study strengths and limitations will be described.

#### Factors related to nurses providing continuous labour support

##### *Organizational Barriers*

Consistent with other research, the participants in Phase I substantiated that organizational barriers affect the ability of nurses to provide continuous care (Davies et al., 2002; Davies & Hodnett, 2002; Graham et al., 2004; Gale et al., 2001; Goldberg, 2002; Miltner, 2000). The survey results of Phase II provided mean scores for ten different barriers. Those with higher means compared to those with lower means, may indicate that some barriers are perceived as more important than others. The significance placed on the organizational barriers may identify a need for interventions at an organizational level to modify these barriers.

##### *TPB Constructs*

The most significant study finding in Phase II, was that nurses had lower attitude, subjective norm and intention scores toward continuous care for women with epidural analgesia compared to women without epidural analgesia. Furthermore, there was a statistically significant difference in the comparison of composite mean scores between the “epidural” and the “no epidural” scenarios for three TPB constructs-intentions, subjective norms and attitudes. This difference in nurses’ approach toward these two groups has not been previously identified in the literature. Women delivering under epidural analgesia form a large portion of the population of women having babies in Ontario (68.4% in Ontario

teaching hospitals)(Ontario Perinatal Statistical Report , 2005). Therefore, this unique finding may help explain the limited quantity of supportive care observed in previously published labour support work measurement studies and identifies a need for further investigation.

## Implications

### *Implications for practice*

Nurses need to be aware that presence is a form of emotional support and that this form of support is deeply valued by women (Mackinnon, et al., 2005). Objectives to achieve a policy of continuous labour support by nurses need to include ongoing educational interventions. Interventions which present the research evidence to support a practice of continuous labour support and include current useful suggestions for practice could be valuable (Davies & Hodnett, 2002; Gale et al., 2001; Kardong-Edgren, 2001). Clinical educators need to encourage reflective practice and discussion among nurses. Developing a labour support unit committee may encourage nurses to share their experiences, knowledge and practices. Documentation tools that indicate labour support activities may be another method of encouraging nurses to implement supportive care activities (Davies & Hodnett, 2002; Gagnon & Waghorn, 1996; Gale et al., 2001).

### *Implications for nursing education*

Findings indicate that nearly 40 percent of nurses in this study are unaware of the physiological benefits of continuous supportive care. This knowledge deficit is of practical concern. Findings demonstrated significant correlations between intentions and having previously taken labour support courses, suggesting that education is of benefit. Davies et al., (2002), demonstrated that interactive labour support workshops significantly increased the

time nurses spent providing labour support (23.5% to 29.8%,  $p < 0.001$ ) in a tertiary center but not in a community hospital. The authors suggested that the change in practice was likely due to a change in attitudes. Study findings described in chapter three of this thesis, demonstrated a significant correlation between intentions and attitudes. Therefore, education about labour support and ongoing dissemination of current research findings may be a starting point in an effort to change attitudes.

### *Implications for Policy*

Few strategies are available for individual nurses or nurse managers and educators who wish to improve the quantity and quality of continuous labour support being provided in their birthing units. This study along with previous research, have provided some strategy suggestions for policy change.

Lack of staffing, inability to call in staff at the last minute and lack of incentives for staff to come in as unit acuity increases, were the most commonly mentioned barriers. Additionally, the imbalance in staffing mix between junior and senior staff on a team was mentioned. Senior nurses reported having to cover for junior nurses which sometimes interfered with their ability to remain with their assigned patient. Flexible staffing models are needed to ensure staff availability on short notice (Davies & Hodnett, 2002; Gale et al., 2001) when the unit acuity changes and a balance of junior and senior nurses on each team. A strategy that includes incentives (Registered Nurses Association of Ontario (RNAO), 2006) for on-call nurses who are willing to come in on short notice, may facilitate the ability of the unit to sustain adequate staffing ratios and team strength when unit acuity increases. A self-scheduling system with an on-call element may be an option for birthing units to

explore. Such a system would involve the nurses and team leaders and provide them with some autonomy over their work schedule (RNAO, 2006).

Involving staff nurses in the development of policies (Pearson et al., 2006; RNAO, 2006) such as a policy for the method of patient assignment and method of covering for breaks, may encourage nurses' and team leaders' acceptance. A unit policy on how to manage assignments and breaks may offer consistency among team leaders and by involving nurses and team leaders may foster collaborative implementation efforts. The Registered Nurses Association of Ontario (RNAO) Healthy Work Environments Best Practice Guidelines (2006) recommend organizations ensure a culture that supports effective teamwork. Recommendations include: "rewards and incentives, administrative support" (p.30) "ensuring the team members are included in the development and implementation of unit policies, endorsing a professional practice model that supports practice accountability, autonomy and decision authority related to work environment and care delivery" (p.31). A commitment from all team leaders to support the availability of nurses to provide continuous labour support may begin to nurture a unit culture supportive of this practice.

All newly hired Birthing Unit nurses at the study hospitals attend an eight hour workshop on labour support. All staff nurses should have the opportunity to attend. Given that labour support is the essence of childbirth nurses' work, all nurses should be encouraged to attend these workshops every two years in order to remain current with recommended practices and competent with their labour support skills. In addition, these workshops may benefit from presenting and discussing different case scenarios (a woman with and without epidural analgesia). Such a discussion may elicit the differences in attitudes among nurses toward supportive care for women with epidural analgesia and thereby provide an opportunity for

educators to negate misconceptions. Penny Simkin stated in a recent roundtable discussion on labour support, that she is developing a specific method of labour support to meet the needs of women with epidural analgesia (Ruhl, 2006). These new recommendations should also be included in future workshops. In most institutions “nurses are encouraged, if not required, to be certified in electronic fetal monitoring but are not required to know how to provide one-to-one labor support. Yet, one-to-one labor support is supported by research, whereas continuous EFM is not” (Kardong-Edgren, 2001, p. 371). Education policies that include regular attendance at the labour support workshops for all intrapartum nurses, followed by regular skills assessments (Gagnon & Waghorn, 1996; Gale et al., 2001), may keep nurses current and encourage attitude changes.

Management support is crucial when implementing a practice guideline of continuous labour support by Birthing Unit nurses (Davies & Hodnett, 2002; Davies et al., 2002; Graham et al., 2004; Kardong-Edgren, 2001). Management need to provide the necessary means for nurses to attend workshops. By demonstrating a value for labour support education, management will be advocating the value of this practice and may initiate a change in unit culture. Managers may wish to screen new nurse applicants for attitudes and intentions to do labour support before they are hired. This may indicate their philosophy and managers can determine if this area of work is a fit for each individual.

Some studies have suggested eliminating central nursing stations and central fetal monitors (Davies & Hodnett, 2002; Gale et al., 2001) however, these interventions may not be feasible suggestions for many hospitals. Furthermore, results of this survey indicated that nurses did not score the central nursing station or the central fetal monitor as significant barriers compared to staffing, unit acuity, patient assignments and covering for other nurses.

The obstetrical teams at the two participating birthing units do not include an advanced practice nurse (APN). These teams would benefit from the specialized education and support that an APN can offer. As an educator, researcher, leader, practitioner and consultant (Canadian Nurses Association (CNA), 2003), the APN can facilitate change and has the opportunity to implement change at the level of nurse-client, as well as influencing policy changes (CNA, 2000). As a researcher the APN can remain current on labour support research and may initiate and/or collaborate in research relevant to practice (CNA, 2000). The APN can affect the health care environment and implement this evidence-based practice, by sharing the findings of research with labour and delivery nurses and management alike (Clark-Callister, 1993).

As an educator the APN can collaborate educational efforts with the clinical educators in an effort to maintain ongoing education on labour support. The APN may also extend this education to other members of the health care team. With the recent guidelines encouraging teamwork (SOGC-MORE OB, 2005, RNAO, 2006), the APN would be in a position to educate medical staff and provide an understanding of the literature on the importance of this approach to practice. Acting as a consultant for nursing, the medical team or other APNs, the APN can be instrumental in establishing changes to practice by working directly with policymakers (CNA, 2000, p. 8). As a practitioner working with staff in the unit, the APN can provide expert care and has opportunities to be a role-model or champion of continuous labour support.

*Implications for research*

The TPB was a useful theoretical framework to measure nurses' intentions to provide continuous labour support. Therefore, continued application of the TPB with other nursing populations is recommended.

The studies presented in this thesis suggest that there are improvements to be made in the quantity of labour support provided by nurses. There appears to be a difference in attitudes among nurses with regard to women's labour support needs post-epidural analgesia. Implementation and evaluation of interventions to improve the amount of supportive care being provided by nurses is needed. Examples of interventions for childbirth nurses include interactive workshops and presentation of research. Large well-controlled evaluations of such interventions are needed.

The supportive care needs of women with epidural analgesia need investigating. A randomized control trial that measures the usual amount of supportive care being provided and then assigns women with epidural analgesia into usual nursing care and continuous nursing care (80-100%) is needed. Ongoing work measurement would need to take place to ensure continuous labour support is being provided in the experimental group. Then, comparison of the two groups for the outcome measures in Hodnett's (2003) systematic review (use of intrapartum analgesia/anaesthesia, operative vaginal delivery rate, caesarean birth rate, spontaneous vaginal birth rate and patient satisfaction) could be explored for differences between groups. If such a study demonstrated positive effects of continuous nursing care for women with epidural analgesia it would offer empirical evidence to support a policy of continuous labour support by nurses for all women in active labour. A reduction in maternal morbidity with an improvement in satisfaction could also translate into

significant economical health care benefits. On the other hand, if such a study demonstrated that there were no reductions in maternal morbidity or patient satisfaction, or that women with epidural analgesia preferred the usual care system, this too could translate into economical benefits resulting from reduced staffing requirements for some institutions.

Although the efficacy of the Theory of Planned Behavior in predicting behavioral intention has been well founded (Ajzen, 1988; Godin & Kok, 1996), a study with a prospective design measuring actual nurses' behavior may be a next step. Comparing actual labour support behavior with nurses' intentions may provide valuable information and may identify the influence of organizational barriers.

#### Study Limitations

Since the sample of nurses, educators and managers was from two campuses of a single institution, selection bias may exist. Therefore, the views and issues expressed in this study may not be transferable to other settings. Due to MScN program time constraints, the test-retest reliability of the newly developed questionnaire was not done. Therefore, the stability of the questions over time is not known. The Cronbach's alpha coefficient was 0.47 for the perceived behavioral control index in the epidural scenario. Therefore the reliability of this index is low.

In addition, there was a concern with the perceived behavioral control index from the TPB. Four questions were developed as suggested by the manual for constructing these questionnaires (Francis et al., 2004). Three questions referred to measures of self-efficacy, while the other question referred to individual control over the behavior. Control over the ability to provide continuous labour support is not only dependant on the person's abilities but it is also dependant on external factors outside of the person's control (ie. organizational

barriers). It is the opinion of this author that this construct should be studied further to assess if the perceived behavioral control index should be expanded into separate variables such as self-efficacy and control within the construct. Self-efficacy questions could include items to reflect, confidence, capability and perception of ease or difficulty with performing the behavior. Whereas, the control questions could reflect the individual's choice, organizational support to perform the behavior and organizational barriers interfering with performance.

#### Study Strengths

Despite these limitations, this study possessed many strengths. In Phase I, all interviews were tape-recorded and transcribed verbatim, then verified for accuracy. The transcripts were coded by the student and the thesis supervisor and verified by other members of the thesis committee. Contextual completeness was reached by attaining data saturation (Polit & Beck, 2004). In Phase II, a theoretical framework was used from the social sciences with constructs that have been well defined and which had a manual to guide the questionnaire development and methods to test the theory (Francis et al., 2004). The study results demonstrated the efficacy of the theory in predicting behavioral intentions in this setting.

A mixed methods approach was used with both qualitative and quantitative methods. This two-phase approach was designed to facilitate a better understanding of the current working reality and enhance the validity of the study results (Polit & Beck, 2004). Qualitative data resulting in Phase I of the study provided the perceptions and views of key informants. These perceptions were consistent with those identified in previously published research. These findings provided sound data to support the questionnaire development in Phase II. Furthermore, the results of the second phase of the study corroborated the results of Phase I.

The thesis committee corroborated on several drafts of the questionnaire and then it was pre-tested with five nurses prior to distribution. Additionally, content validity was evaluated by eight experts in the field. Last, the thesis committee was an interdisciplinary group of researchers including two nurse researchers and a sociology researcher. Each member offered diverse experiences which provided a broad interpretation of results.

### Contributions to Knowledge

These studies provide the following contributions to knowledge. The first phase of this study substantiated that certain organizational barriers are perceived to impede nurses' continuous presence with women in childbirth. This study also obtained the views of educators and managers in addition to the nurses' views. The suggestions from participants that the staffing mix of senior and junior nurses is a barrier to continuous labour support, is a new finding. The second phase of this study demonstrated a new finding; nurses had lower attitude, subjective norm and intention scores toward providing continuous labour support for women with epidural analgesia. This finding suggests a reason for low measures of labour support in previous research. This study phase also measured organizational barriers that have been previously identified in the literature, thereby providing a quantitative method of examining these barriers. This quantification of barriers may offer assistance in prioritizing their modification.

### Conclusion

A practice guideline of continuous labour support will not be fully appreciated by nursing staff unless such a policy is strongly promoted and its value is championed by those in leadership positions. A multidisciplinary team approach that embraces, promotes and expects such a policy of care is needed (Davies & Hodnett, 2002; Gagnon & Waghorn, 1996). Nurses

need to be made aware of the profound value of their role as a provider of labour support. If positive predictors of nurses' intentions to provide continuous labour support include positive perceived behavioral control, positive subjective norms, positive attitudes and having taken labour support courses, then hospitals have the responsibility to use the information provided by this study to enhance the working environment and provide educational opportunities to increase supportive care being provided by nurses. Labour support activities should become part of the core competencies required of nurses and therefore need ongoing educational support and evaluation.

Changing the attitudes, of healthcare providers, requires an ongoing approach in order to change the existing belief system and traditionally accepted practices (Graham, 1997; Weber & Joshi, 2000). Involving the key stakeholders (Pearson et al., 2006; RNAO, 2006) and reducing the organizational barriers will facilitate the acceptance and implementation of these practice guidelines (Davies et al., 2002; Graham et al., 2004). Facilitating ongoing education and creating a supportive unit culture may foster positive attitudes and evidence-based intentions.

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Appendix A

University of Ottawa Research Ethics Board letter of approval-Phase1



uOttawa

Université d'Ottawa  
vice de subventions de  
recherche et d'éthologie

University of Ottawa  
Research Grants and  
Ethics Services

October 18, 2005

Dr. Barbara Davies  
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Ms. Laura Payant  
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**Object: Factors related to childbirth nurses' intentions to provide continuous labour support to women and their families at childbirth (file H 09-05-04) PHASE 1**

Dear Researchers,

You will find enclosed the Health Sciences and Science REB ethical clearance for **Phase 1** of the abovementioned study.

During the course of the study, any modifications to the protocol or forms may not be initiated without prior written approval from the REB. You must also promptly notify the REB of any adverse events that may occur.

This certificate of ethical clearance is valid until October 18, 2006. Please submit an annual status report to the Protocol Officer in October 2006 to either close the file or request a renewal of ethics approval. This document can be found at: [http://web9.uottawa.ca/services/rgeesrd/ethics/application\\_dwn.asp](http://web9.uottawa.ca/services/rgeesrd/ethics/application_dwn.asp)

A copy of this approval will be sent to research services, if necessary.

If you have any questions, you may contact the undersigned at the number 562-5387.

Sincerely yours,

Rita D'Allessandro

Protocol Officer for Ethics in Research

For Dr. Daniel Lagarec, Chair of the Health Sciences and Science REB

cc. Dr. Ian Graham

Dr. Wendy Peterson

COPY

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## Appendix B

### Consent for Administrators

#### **Factors Related to Childbirth Nurses' Intentions to Provide Continuous Labour Support to Women and Their Families at Childbirth**

You are being invited to participate in a one on one interview directed by Laura Payant RN from the University of Ottawa.

Purpose of the study:

The purpose of this research is to look at factors influencing the provision of continuous labour support by nurses of women in active labour. The perspective of the nurses is an important factor in evaluating current practices. The results of this study will provide valuable information that will offer suggestions for improving the availability of nurses to provide increased supportive care of women in labour.

What the study entails/Voluntary Participation/Confidentiality:

You would be interviewed on the subject of labour support for approximately 45-60 minutes. The interview will be held at your convenience. The location can be negotiated. There is no obligation to participate and you may withdraw at any time. Should you decide to participate, you are not obligated to answer any questions you do not wish to. The interview will be tape recorded, however the data will be kept completely anonymous and the tapes will be kept in a secure location for review by Laura Payant and members of her research committee. Reports of this study may include quotes of what is said, however names will not be used. I understand that because there are a limited number of administrators being interviewed from the participating organizations, anonymity cannot be guaranteed.

Risks of the study:

There are no known risks to participation in this study and there may be some benefit to the nurses, patients and [name of hospital] to learn about nurses' views of modifiable factors which can be addressed to improve the quality of nursing care. Results of the study will be available and presented to the unit once the project is complete.

If you have any questions, I may be reached at (phone number), or by email at (email address). You may also reach my thesis supervisor Dr. Barbara Davies at the University of Ottawa, (phone number). If you have questions about your rights as a research subject, please contact the Chairperson of the [name of hospital] Research Ethics Board at [phone number]

Thank you for your cooperation.

Laura Payant, RN

Masters Candidate, University of Ottawa, School of Nursing

**Factors Predicting Childbirth Nurses' Intention to Provide Continuous  
Labour Support  
Participant Consent**

I have read and understand the information sheet and consent form for this study. I have had the purpose and procedures explained to me. I have been give sufficient time to consider the above information and to ask questions. I am voluntarily signing this form. I will receive a copy of this consent form for my information.

By signing this consent form, I am indicating that I agree to participate in this study.

\_\_\_\_\_  
Name of Participant

\_\_\_\_\_  
Signature of Participant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Name of Investigator or Delegate

\_\_\_\_\_  
Signature of Investigator or Delegate

\_\_\_\_\_  
Date

**Appendix C**  
**Consent for Staff Nurses**

**Factors Related to Childbirth Nurses' Intentions to Provide Continuous Labour Support to Women and Their Families at Childbirth**

You are being invited to participate in a one on one interview directed by Laura Payant RN from the University of Ottawa.

Purpose of the study:

The purpose of this research is to look at factors influencing the provision of continuous labour support by nurses of women in active labour. The perspective of the nurses is an important factor in evaluating current practices. The results of this study will provide valuable information that will offer suggestions for improving the availability of nurses to provide increased supportive care of women in labour.

What the study entails/Voluntary Participation/Confidentiality:

You would be interviewed on the subject of labour support for approximately 45-60 minutes. The interview will be held at your convenience. The location can be negotiated. There is no obligation to participate and you may withdraw at any time. Should you decide to participate, you are not obligated to answer any questions you do not wish to. The interview will be tape recorded, however the data will be kept completely anonymous and the tapes will be kept in a secure location for review by Laura Payant and members of her research committee. Reports of this study may include quotes of what is said, however names will not be used.

Risks of the study:

There are no known risks to participation in this study and there may be some benefit to the nurses, patients and [name of hospital] to learn about nurses' views of modifiable factors which can be addressed to improve the quality of nursing care. Results of the study will be available and presented to the unit once the project is complete.

If you have any questions, I may be reached at (phone number), or by email at [email address]. You may also reach my thesis supervisor Dr. Barbara Davies at the University of Ottawa, (phone number). If you have questions about your rights as a research subject, please contact the Chairperson of the [name of hospital] Research Ethics Board at [phone number]

Thank you for your cooperation.

Laura Payant, RN

Masters Candidate, University of Ottawa, School of Nursing

**Factors Predicting Childbirth Nurses' Intention to Provide Continuous  
Labour Support  
Participant Consent**

I have read and understand the information sheet and consent form for this study. I have had the purpose and procedures explained to me. I have been give sufficient time to consider the above information and to ask questions. I am voluntarily signing this form. I will receive a copy of this consent form for my information.

By signing this consent form, I am indicating that I agree to participate in this study.

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Name of Participant

---

Signature of Participant

---

Date

---

Name of Investigator or Delegate

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Signature of Investigator or Delegate

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Date

## Appendix D Questionnaire

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### Nurses' Views on Continuous Labour Support

Your views and experience providing continuous labour support are important to the significance of this study. Your honest opinion is valued. This study seeks to identify attitudes and barriers about continuous labour support by nurses.

Presented below are two case scenarios with a variation on the theme. In the first scenario the patient does not have an epidural and in the second scenario the patient does have an epidural. We are asking you to complete the same set of questions for each scenario. There are no right, or wrong answers, we are only interested in your opinion. The questionnaire may seem repetitive, but the scientific nature of this study requires this methodological approach.

Thank you for your consideration

For the purpose of this questionnaire, continuous labour support is defined as the nurse being present with the patient nearly all the time, (providing information, emotional support, advocacy and physical support) with the exception of breaks.

**Scenario 1-** It is 10:00 am, you are assigned a patient who has just been admitted. She is a 26 year old healthy primip. She is accompanied by her husband. She has been contracting irregularly for 24 hours and regularly for the last 2 hours. She is coping well and wants natural childbirth. They have taken prenatal classes and appear well informed. She is 3-4 cm dilated with regular, moderate to strong contractions q 2-3 minutes. The unit is busy but there is adequate staff and a strong team with at least 1/2 the nurses being experienced, so that each nurse can be assigned one patient.

Please choose one number on the scale, that best reflects your answer. Please be sure to fill in the circle completely, using a pen or pencil.

1. I plan to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

2. I am confident that I have the skills to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

3. On my unit, there is an expectation that providing continuous labour support to this patient is a priority of care.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

4. I feel capable of providing continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

5. I think my manager would expect me to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

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6. I will provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

7. I think that other nurses on this unit would provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

8. For me, providing continuous labour support to this patient would be:

a) Bad practice     1     2     3     4     5     6     7    Good practice

b) Unhelpful     1     2     3     4     5     6     7    Helpful

c) Unnecessary     1     2     3     4     5     6     7    Necessary

d) Not satisfying     1     2     3     4     5     6     7    Satisfying

e) Very difficult     1     2     3     4     5     6     7    Very easy

9. I think the SOGC (The society of Obstetricians and Gynaecologists of Canada) would approve of me providing continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

10. I have complete control over whether to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

11. I think the care facilitators would expect me to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

12. I intend to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

13. To what extent does the unit acuity affect your ability to provide continuous labour support to this patient?

Not at all     1     2     3     4     5     6     7    Greatly

14. To what extent does the unit's philosophy of care affect your ability to provide continuous labour support to this patient?

Not at all     1     2     3     4     5     6     7    Greatly

15. To what extent does the method of patient assignment affect your ability to provide continuous labour support to this patient?

Not at all     1     2     3     4     5     6     7    Greatly

16. To what extent does the need for you to cover other nurses for break affect your ability to provide continuous labour support to this patient?

Not at all     1     2     3     4     5     6     7    Greatly

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17. To what extent does the need for you to complete non-nursing duties affect your ability to provide continuous labour support to this patient?

Not at all       1       2       3       4       5       6       7      Greatly

18. To what extent does the Central Fetal Monitor affect your ability to provide continuous labour support to this patient?

Not at all       1       2       3       4       5       6       7      Greatly

19. to what extent does the ratio of staff nurses to patients affect your ability to provide continuous labour support to this patient?

Not at all       1       2       3       4       5       6       7      Greatly

20. To what extent does the location of the patient's chart affect your ability to provide continuous labour support to this patient?

Not at all       1       2       3       4       5       6       7      Greatly

21. To what extent does the care-facilitator affect your ability to provide continuous labour support to this patient?

Not at all       1       2       3       4       5       6       7      Greatly

22. To what extent does the need to network with colleagues outside your patient's room, concerning decision making about her care, affect your ability to provide continuous labour support to this patient.

Not at all       1       2       3       4       5       6       7      Greatly

23. In your experience, what factors on this unit would interfere with your ability to provide continuous labour support to this patient?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

24. In your experience, is there anything that could facilitate your availability to provide continuous labour support to this patient?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

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**Scenario 2-** It is 10:00 am, you are assigned a patient who has just been admitted. She is a 26 year old healthy primip. She is accompanied by her husband. She has been contracting irregularly for 24 hours and regularly for the last 2 hours. She is coping well but wants and receives **an epidural**. They have taken prenatal classes and appear well informed. She is 3-4 cm dilated with regular, moderate to strong contractions q 2-3 minutes. The unit is busy but there is adequate staff and a strong team with at least 1/2 the nurses being experienced, so that each nurse can be assigned one patient.

25. I plan to provide continuous labour support to this patient.

Strongly disagree    1    2    3    4    5    6    7   Strongly agree

26. I am confident that I have the skills to provide continuous labour support to this patient.

Strongly disagree    1    2    3    4    5    6    7   Strongly agree

27. On my unit, there is an expectation that providing continuous labour support to this patient is a priority of care.

Strongly disagree    1    2    3    4    5    6    7   Strongly agree

28. I feel capable of providing continuous labour support to this patient.

Strongly disagree    1    2    3    4    5    6    7   Strongly agree

29. I think my manager would expect me to provide continuous labour support to this patient.

Strongly disagree    1    2    3    4    5    6    7   Strongly agree

30. I will provide continuous labour support to this patient.

Strongly disagree    1    2    3    4    5    6    7   Strongly agree

31. I think that other nurses on this unit would provide continuous labour support to this patient.

Strongly disagree    1    2    3    4    5    6    7   Strongly agree

32. For me, providing continuous labour support to this patient would be:

- |                   |                         |                         |                         |                         |                         |                         |                         |               |
|-------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|-------------------------|---------------|
| a) Bad practice   | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 | Good practice |
| b) Unhelpful      | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 | Helpful       |
| d) Not satisfying | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 | Satisfying    |
| e) Very difficult | <input type="radio"/> 1 | <input type="radio"/> 2 | <input type="radio"/> 3 | <input type="radio"/> 4 | <input type="radio"/> 5 | <input type="radio"/> 6 | <input type="radio"/> 7 | Very easy     |

33. I think the SOGC (The society of Obstetricians and Gynaecologists of Canada) would approve of me providing continuous labour support to this patient.

Strongly disagree    1    2    3    4    5    6    7   Strongly agree

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34. I have complete control over whether to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

35. I think the care facilitators would expect me to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

36. I intend to provide continuous labour support to this patient.

Strongly disagree     1     2     3     4     5     6     7    Strongly agree

37. To what extent does the unit acuity affect your ability to provide continuous labour support to this patient?

Not at all             1     2     3     4     5     6     7            Greatly

38. To what extent does the unit's philosophy of care affect your ability to provide continuous labour support to this patient?

Not at all             1     2     3     4     5     6     7            Greatly

39. To what extent does the method of patient assignment affect your ability to provide continuous labour support to this patient?

Not at all             1     2     3     4     5     6     7            Greatly

40. To what extent does the need for you to cover other nurses for break affect your ability to provide continuous labour support to this patient?

Not at all             1     2     3     4     5     6     7            Greatly

41. To what extent does the need for you to complete non-nursing duties affect your ability to provide continuous labour support to this patient?

Not at all             1     2     3     4     5     6     7            Greatly

42. To what extent does the Central Fetal Monitor affect your ability to provide continuous labour support to this patient?

Not at all             1     2     3     4     5     6     7            Greatly

43. to what extent does the ratio of staff nurses to patients affect your ability to provide continuous labour support to this patient?

Not at all             1     2     3     4     5     6     7            Greatly

44. To what extent does the location of the patient's chart affect your ability to provide continuous labour support to this patient?

Not at all             1     2     3     4     5     6     7            Greatly

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45. To what extent does the care-facilitator affect your ability to provide continuous labour support to this patient?

Not at all       1       2       3       4       5       6       7      Greatly

46. To what extent does the need to network with colleagues outside your patient's room, concerning decision making about her care, affect your ability to provide continuous labour support to this patient.

Not at all       1       2       3       4       5       6       7      Greatly

47. In your experience, what factors on this unit would interfere with your ability to provide continuous labour support to this patient?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

48. In your experience, is there anything that could facilitate your availability to provide continuous labour support to this patient?

1. \_\_\_\_\_
2. \_\_\_\_\_
3. \_\_\_\_\_

49. How familiar are you with the AWHONN (Association of Women's Health Obstetric and Neonatal Nurses) guidelines on labour support?.

Not at all familiar     1     2     3     4     5     6     7    Very familiar

50. How familiar are you with the SOGC (Society of Obstetricians and Gynecologists of Canada) guidelines on labour support.

Not at all familiar     1     2     3     4     5     6     7    Very familiar

51. Thinking about the last 10 low-risk primips you have cared for **without** an epidural, in active labour, for how many of them did you provide-

- a) **continuous** labour support (80-100% of time she was in active labour) \_\_\_\_\_/10
- b) **partial** labour support (< 80% of the time she was in active labour) \_\_\_\_\_/10

**Comments:**

\_\_\_\_\_

\_\_\_\_\_

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52. Thinking about the last 10 low-risk primips you have cared for **with** an epidural, in active labour, for how many of them did you provide-

- a) **continuous** labour support (80-100% of time she was in active labour) \_\_\_\_\_/10
- b) **partial** labour support ( < 80% of the time she was in active labour) \_\_\_\_\_/10

**Comments:**

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53. Generally, do you feel you have-

- insufficient time to provide continuous labour support
- just enough time to provide continuous labour support if you **do not** take your breaks
- enough time to provide continuous labour support and take your breaks
- more than enough time to provide continuous labour support and take your breaks

54. To what extent is ongoing education on the topic of labour support, need by the nurses?

Not at all             1         2         3         4         5         6         7            Greatly

55. How useful do think a unit committee on labour support would be to nurses' practice on this unit?

Not useful             1         2         3         4         5         6         7            Very useful

56. In your opinion, continuous labour support by nurses for all women in active labour would-

	Strongly Disagree						Strongly Agree
1) Decrease the likelihood of pain medication	1	2	3	4	5	6	7
2) Decrease the likelihood of a cesarean section	1	2	3	4	5	6	7
3) Decrease the likelihood of an operative vaginal delivery(forceps or vacuum)	1	2	3	4	5	6	7
4) Decrease the likelihood of a low Apgar score (<7 at 5 minutes)	1	2	3	4	5	6	7
5) Increase patient satisfaction	1	2	3	4	5	6	7

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About You

In order to describe the characteristics of the nurses participating in this survey, it is necessary to obtain the following information about you. The information obtained will remain confidential and will be grouped for reporting purposes.

1. How many years of labour and delivery experience do you have? \_\_\_\_\_ years

2. Do you work - Full time

Part time

3. What is your position: Staff nurse

Care-Facilitator

Both

4. What is the highest level of nursing education that you have completed?

Diploma  Baccalaureate  Other

Specify \_\_\_\_\_

5. What year did you complete your basic nursing program? \_\_\_\_\_

6. Have you ever taken any courses on labour support/supportive care?

No

Yes

If yes when \_\_\_\_\_

If you have any other thoughts or comments you would like to share about continuous labour support, please note them in the space provided below.

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

*Thank you very much for taking the time to complete this questionnaire*

**Please return this questionnaire to the designated box in the nursing station.**

**Appendix E**  
**Report of organizational barriers affecting nurses' ability to provide continuous labour support to patients with and without epidural analgesia (n=97)**

Score	1 not at all	2	3	4	5	6	7 greatly	Mean Score/7	Median Score/7
<b>Unit Acuity</b>									
(%) No Epidural	2.1	5.2	3.1	10.3	15.5	16.5	47.4	5.71	6.00
(%) Epidural	4.1	4.1	4.12	10.3	9.3	20.6	47.4	5.68	6.00
<b>Method of patient assignment</b>									
(%) No Epidural	7.2	5.2	4.1	4.1	19.6	21.7	38.1	5.41	6.00
(%) Epidural	9.3	8.2	0	5.2	19.6	17.5	40.2	5.31	6.00
<b>Need to cover other nurses for break</b>									
(%) No Epidural	2.1	8.3	3.1	11.3	18.6	19.6	37.1	5.43	6.00
(%) Epidural	2.1	7.2	4.1	11.3	15.5	20.6	39.2	5.49	6.00
<b>Ratio of staff nurses to patients</b>									
(%) No Epidural	7.22	5.2	5.2	10.3	11.3	17.5	43.3	5.38	6.00
(%) Epidural	8.3	4.1	3.1	5.2	15.5	19.6	44.3	5.52	6.00
<b>Unit's philosophy of care</b>									
(%) No Epidural	9.3	3.1	4.1	5.2	16.5	26.8	35.1	5.37	6.00
(%) Epidural	11.3	6.2	6.2	8.2	16.5	23.7	27.8	4.95	6.00
<b>Team leader</b>									
(%) No Epidural	11.3	10.3	8.3	7.2	15.5	21.7	25.8	4.73	5.00
(%) Epidural	8.3	4.1	9.3	9.3	16.5	25.8	26.8	5.06	6.00
<b>Non-nursing duties</b>									
(%) No Epidural	12.4	27.8	14.4	8.3	14.4	12.4	10.3	3.63	3.00
(%) Epidural	15.5	23.7	12.4	8.3	11.3	16.5	12.4	3.75	3.00
<b>Need to consult with colleagues at the central nursing station</b>									
(%) No Epidural	24.7	24.7	20.6	14.4	9.3	5.2	1.0	2.78	3.00
(%) Epidural	20.6	32.0	14.4	13.4	10.3	7.2	2.1	2.91	2.00
<b>Central Fetal Monitor</b>									
(%) No Epidural	49.5	15.5	8.3	8.3	8.3	5.2	5.2	2.46	2.00
(%) Epidural	28.9	14.4	6.2	8.3	9.3	16.5	16.5	3.70	4.00
<b>Location of patient's chart</b>									
(%) No Epidural	59.8	12.4	6.2	4.1	5.2	9.3	3.1	2.23	1.00
(%) Epidural	48.5	18.6	12.4	4.1	8.3	5.2	3.1	2.33	2.00

No Epidural Scenario- Cronbach's Alpha - 0.85

Epidural Scenario - Cronbach's Alpha - 0.81

**Appendix F**

**Distribution of attitude scores toward continuous labour support (CLS) for patients experiencing childbirth without and with epidural analgesia (n=97)**

								Mean Score	Median Score
<b>CLS for this patient would be...</b>									
Score	1	2	3	4	5	6	7		
	bad practice						good practice		
<b>No Epidural (%)</b>	2.1	0	0	1.0	4.1	11.3	81.4	6.65	7.00
<b>Epidural (%)</b>	2.1	0	2.1	17.5	13.4	15.5	49.5	5.85	6.00
<b>CLS for this patient would be ...</b>									
Score	1	2	3	4	5	6	7		
	unhelpful						helpful		
<b>No Epidural (%)</b>	6.2	0	1.0	0	3.1	16.5	73.2	6.36	7.00
<b>Epidural (%)</b>	6.2	4.1	5.2	13.4	18.6	10.3	42.3	5.34	6.00
<b>CLS for this patient would be...</b>									
Score	1	2	3	4	5	6	7		
	unnecessary						necessary		
<b>No Epidural (%)</b>	3.1	1.0	1.0	2.1	8.3	23.7	60.8	6.26	7.00
<b>Epidural (%)</b>	5.2	10.3	8.3	14.4	16.5	15.5	29.9	4.93	5.00
<b>Providing CLS to this patient would be...</b>									
Score	1	2	3	4	5	6	7		
	not satisfying						satisfying		
<b>No Epidural (%)</b>	3.1	2.1	1.0	0	3.1	16.5	74.2	6.44	7.00
<b>Epidural (%)</b>	5.2	4.1	1.0	13.4	16.5	17.5	42.3	5.54	6.00

**Appendix G**

**Distribution of subjective norm scores toward continuous labour support (CLS) for patients experiencing childbirth without and with epidural analgesia (n=97)**

Score	1 strongly disagree	2	3	4	5	6	7 strongly agree	Mean Score	Median Score
<b>CLS is a priority of care for this patient</b>									
<b>No Epidural</b>								5.72	6.00
(%)	3.1	1.0	5.2	6.2	18.6	27.8	38.1		
<b>Epidural</b>								4.55	5.00
(%)	11.3	12.4	7.2	13.4	14.4	17.5	23.7		
<b>My manager would expect me to provide CLS to this patient</b>									
<b>No Epidural</b>								6.38	7.00
(%)	0	1.0	2.1	1.0	9.3	26.8	59.8		
<b>Epidural</b>								4.89	5.00
(%)	11.3	6.2	7.2	14.4	12.4	15.5	33.0		
<b>Other nurses would provide CLS to this patient</b>									
<b>No Epidural</b>								5.52	6.00
(%)	0	1.0	3.1	16.5	26.8	26.8	25.8		
<b>Epidural</b>								4.19	5.00
(%)	14.4	9.3	9.3	15.5	25.8	13.4	12.4		
<b>SOGC would approve of CLS for this patient</b>									
<b>No Epidural</b>								6.76	7.00
(%)	0	0	1.0	0	4.1	11.3	83.5		
<b>Epidural</b>								5.78	6.00
(%)	1.0	5.2	3.1	9.3	11.3	26.8	43.3		
<b>Team leaders would expect me to provide CLS to this patient</b>									
<b>No Epidural</b>								5.70	6.00
(%)	0	1.0	7.2	5.2	21.7	37.1	27.8		
<b>Epidural</b>								4.12	4.00
(%)	15.5	11.3	11.3	14.4	15.5	18.6	13.4		

**Appendix H**

**Distribution of perceived behavioral control scores toward continuous labour support (CLS) for patients experiencing childbirth without and with epidural analgesia (n=97)**

Score	1 strongly disagree	2	3	4	5	6	7 strongly agree	Mean Score	Median Score
<b>I am confident I have the skills to provide CLS</b>									
No Epidural								6.77	7.00
(%)	0	1.0	1.0	0	1.0	11.3	85.6		
Epidural								6.84	7.00
(%)	0	0	1.0	0	2.1	8.3	88.7		
<b>I feel capable of providing CLS</b>									
No Epidural								6.76	7.00
(%)	0	1.0	1.0	0	1.0	12.4	84.5		
Epidural								6.69	7.00
(%)	1.0	0	1.0	2.1	1.0	12.4	82.5		
<b>I have complete control over whether to provide CLS to this patient</b>									
No Epidural								5.08	5.00
(%)	4.12	2.1	12.4	12.4	19.6	30.9	18.6		
Epidural								4.58	5.00
(%)	3.1	11.3	11.3	20.6	20.6	18.6	14.4		
<b>For me providing CLS to this patient would be...</b>									
Score	1 very difficult	2	3	4	5	6	7 very easy		
No Epidural								5.68	6.00
(%)	4.1	2.1	5.2	6.2	13.4	30.9	38.1		
Epidural								5.92	6.00
(%)	1.0	2.1	3.1	11.3	11.3	22.7	48.5		

**Appendix I**

**Distribution of intention scores toward continuous labour support (CLS) for patients experiencing childbirth without and with epidural analgesia (n=97)**

Score	1 strongly disagree	2	3	4	5	6	7 strongly agree	Mean Score	Median Score
<b>I plan to provide CLS to this patient</b>									
<b>No Epidural</b>								6.45	7.00
(%)	0	1.0	0	3.1	9.3	21.7	65.0		
<b>Epidural</b>								5.01	5.00
(%)	6.2	8.3	6.2	15.5	15.5	18.6	29.9		
<b>I will provide CLS to this patient</b>									
<b>No Epidural</b>								6.44	7.00
(%)	0	1.0	1.0	0	11.3	23.7	62.9		
<b>Epidural</b>								5.04	6.00
(%)	7.2	6.2	8.3	13.4	12.4	23.7	28.9		
<b>I intend to provide CLS to this patient</b>									
<b>No Epidural</b>								6.58	7.00
(%)	0	0	1.0	0	7.2	23.7	68.0		
<b>Epidural</b>								5.15	6.00
(%)	4.1	7.2	13.4	7.2	14.4	19.6	34.0		

**Appendix J**  
**Reviewer Evaluation Form**

**Nurses' Views on Continuous Labour Support**

Thank you for taking the time to consider this request. We are asking you to evaluate the following questionnaire for completeness, readability, ease of completion and clarity of questions. Your views and experience on questionnaire development and evaluation are important to the effectiveness of this study. This study seeks to survey childbirth nurses to identify attitudes and barriers about continuous labour support by nurses using the Theory of Planned Behavior as the theoretical basis.

**Instructions**

- 1) Please note and document the time you start and finish the questionnaire in the spaces provided.
- 2) Carefully read through the questionnaire and answer each question.
- 3) You need not complete the section titled **About you** on page 9, simply evaluate this section for clarity, completeness, readability and ease of completion.
- 4) Once you have completed the questionnaire please complete the evaluation form at the end.
- 5) Once you have finished the evaluation please return the questionnaire and evaluation forms to the envelope provided and the student Laura Payant will pick them up.

*Your expertise and thoughtful consideration of this request is greatly appreciated.*

## Evaluation Form

**Theory of Planned Behavior:** The TPB provides a framework to study attitudes with regard to behaviors. The TPB postulates that the determinant of a person's behavior is a combination of three constructs: attitude, subjective norms and perceived behavioral control. A person's attitude reflects their beliefs about the consequences of a behavior and how they evaluate the outcome. Before performing a behavior a person will reflect on the subjective norms or the views and expectations of others (social pressure). Perceived behavioral control is also considered which takes into account the person's motivation, whereby motivation is influenced by how difficult or easy the behavior is perceived to be based on the person's perceived control over the behavior (Francis et al., 2004; McCormack-Brown, 1999).

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	<b>Rating Scale</b>			
<b>Constructs</b>	<b>1</b> not relevant	<b>2</b> needs revision	<b>3</b> relevant minor revision	<b>4</b> very relevant
<b>Perceived Behavioral Control</b> Questions 2, 5, 10, 20, 23 & 28. (Factors (internal & situational) that determine how a person judges his/her ability to perform the behavior (Francis et al., 2004))	1	2	3	4
<b>Subjective Norms</b> Questions 9, 4, 7, 22, 25 & 27 (The perceived social pressure to execute a behavior or not (Francis et al., 2004))	1	2	3	4
<b>Attitude</b> Questions 8 & 26 (A person's assessment of the consequences and the results of the behavior (Francis et al., 2004))	1	2	3	4

	<b>poor</b>	<b>good</b>	<b>very good</b>	<b>excellent</b>
<b>Please evaluate the questionnaire on the:</b>				
Completeness	1	2	3	4
Readability	1	2	3	4
Ease of Completion	1	2	3	4
Clarity of Questions	1	2	3	4

*Thank you very much for taking the time to complete this evaluation*

Appendix K  
The University of Ottawa Research Ethics Board letter of approval – Phase 2



Université d'Ottawa University of Ottawa

Service de subventions de recherche et d'éthologie Research Grants and Ethics Service

**HEALTH SCIENCES AND SCIENCE RESEARCH ETHICS BOARD**

**CERTIFICATE OF ETHICAL APPROVAL**

This is to certify that the University of Ottawa Health Sciences and Science Research Ethics Board has examined the application for ethical approval of Phase 2 of the study entitled **Factors related to childbirth nurses' intentions to provide continuous labour support to women and their families at childbirth (file H 09-05-04)** submitted by Ms. Laura Payant who is supervised by Dr. Barbara Davies, both of the School of Nursing, Faculty of Health Sciences. The Board found that this research project met appropriate ethical standards as outlined in the Tri-Council Policy Statement and in the Procedures of the University of Ottawa Research Ethics Boards, and accordingly gave it a Category 1a (approval). This certification is valid one year from the date indicated below.

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

March 21, 2006  
Date

**Appendix L**  
**Distribution of knowledge scores on the outcome benefits of**  
**Continuous Labour Support (CLS) (n=97)**

Continuous labour support for all women in active labour would...								Mean Score	Median Score	
Score	1 strongly disagree	2	3	4	5	6	7 strongly agree			
<b>Decrease the likelihood of pain medication</b>								4.98	5.00	
(%)	4.1	6.2	5.2	19.6	22.7	21.7	20.6			
<b>Decrease the likelihood of a cesarean section</b>								4.73	5.00	
(%)	7.2	10.3	6.2	13.4	20.6	25.8	16.5			
<b>Decrease the likelihood of an operative vaginal delivery</b>								4.66	5.00	
(%)	6.2	10.3	7.2	16.5	19.6	27.8	12.4			
<b>Decrease the likelihood of a low Apgar score (&lt;7 at 5 minutes)</b>								4.16	4.00	
(%)	10.3	13.4	6.2	23.7	19.6	19.6	7.2			
<b>Increase patient satisfaction</b>								6.44	7.00	
(%)	0	2.1	1.0	2.1	6.2	22.7	66.0			
Cronbach's Alpha=0.85										
<b>Distribution of Knowledge Scores</b>								<b>Scored &gt; 60%</b>	<b>Mean # of questions answered correctly</b>	<b>Median number of questions answered correctly</b>
<b>Number of questions answered correctly</b>	0	1	2	3	4	5				
<b>(%)</b>	3.09	20.62	12.37	9.28	17.53	37.11	63.9			
								3.29	4.0	

\*correctly answered = scored 5, 6, 7 on the Likert scale

**Appendix M**  
**Distribution of nurses' familiarity with labour support guidelines**

<b>How familiar are you with the AWHONN guidelines on labour support</b>								<b>Mean Score</b>	<b>Median Score</b>
<b>Score</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>		
	<b>not at all familiar</b>						<b>very familiar</b>		
(%)	14.4	16.5	12.4	13.4	17.5	15.5	10.3	3.91	4.00
<b>How familiar are you with the SOGC guidelines on labour support</b>									
<b>Score</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>		
	<b>not at all familiar</b>						<b>very familiar</b>		
(%)	1.0	5.2	5.2	13.4	16.5	39.2	19.6	5.35	6.00

**Appendix N**  
**Pearson Correlation Coefficients among variables - no epidural scenario (n=97)**

	intention	yrsexp	work	position	educ	extra edu	year grad	lscourse	know	AWHONN	SOGC	past beh.	sub norms	attitudes	per beh control
yrsexp	-0.04														
work	-0.17**	-0.07													
position	0.08	0.19*	-0.09												
educ	-0.03	-0.34***	0.20*	-0.05											
extra ed	0.05	0.05	-0.22**	-0.12*	-0.23**										
year gra	0.07	-0.90***	0.12*	-0.14*	0.46***	-0.10									
lscourse	0.23**	0.18*	-0.18*	0.10	-0.09	-0.07	-0.14*								
know	0.14*	-0.02	0.04	-0.0005	-0.009	-0.01	0.10	0.13*							
AWHONN	0.20**	0.31***	0.12*	0.14*	-0.09	0.007	-0.23**	0.36***	0.13*						
SOGC	0.11	0.30***	0.003	0.10	-0.10	-0.13*	-0.24**	0.07	0.12*	0.44***					
past beh	0.19*	0.24**	-0.02	-0.04	-0.11	0.11	-0.23**	0.17*	-0.05	0.25**	0.13*				
subj norm	0.69***	0.02	-0.14*	-0.03	-0.11	0.07	-0.006	0.09	0.02	0.22**	0.02	0.13*			
attitudes	0.41***	0.07	-0.10	0.08	0.03	0.01	-0.002	0.10	0.23**	0.15*	0.06	-0.014	0.35***		
Per Beh Con	0.55***	0.25**	-0.14*	0.15*	-0.06	0.09	-0.21**	0.11	0.03	0.22**	0.23**	0.26***	0.54***	0.42***	
barriers	-0.12	-0.07	0.12*	-0.03	0.16*	-0.04	0.11	-0.09	-0.008	0.03	-0.11	-0.09	-0.18*	-0.10	-0.26***

\* .05 ≤ p < .25  
 \*\* .01 ≤ p < .05  
 \*\*\* .0001 ≤ p < .01

**Appendix O**  
**Pearson Correlation Coefficients among variables - epidural scenario (n=97)**

	intention	yrsexp	work	position	educ	extra edu	year grad	lscourse	know	AWHONN	SOGC	past beh.	sub norms	attitudes	per beh	control
yrsexp	-0.002															
work	-0.05	-0.07														
position	0.14*	0.19*	-0.09													
educ	0.04	-0.34***	0.20**	-0.05												
extra ed	0.07	0.05	-0.22**	-0.12*	-0.23**											
year gra	0.05	-0.90***	0.12*	-0.14*	0.46***	-0.10										
lscourse	0.28***	0.18	-0.18*	0.10	-0.09	-0.07	-0.14*									
know	0.04	-0.03	0.04	-0.0005	-0.009	-0.01	0.10	0.13*								
AWHONN	0.36***	0.31***	-0.12*	0.14*	-0.09	0.007	-0.23**	0.36***	0.13*							
SOGC	0.05	0.30***	0.003	0.10	-0.10	-0.13*	-0.24**	0.077	0.12*	0.44***						
past beh	0.72***	0.15*	-0.04	0.02	-0.08	0.13*	-0.11	0.21**	0.04	0.32***	0.11					
subj norm	0.89***	-0.02	-0.08	0.04	-0.02	0.08	0.02	0.19*	-0.02	0.30***	0.02	0.74***				
attitudes	0.87***	0.02	-0.02	0.12*	0.15	0.06	0.06	0.24**	0.08	0.43***	0.08	0.60***	0.76***			
Per Beh Con	0.49***	0.18*	-0.14*	0.13*	0.11	0.07	-0.08	0.25**	0.02	0.30***	0.19*	0.50***	0.50***	0.48***		
barriers	0.11	-0.13*	0.16*	0.01	0.25**	-0.02	0.15*	0.01	0.08	-0.04	-0.04	-0.16*	-0.04	0.11	-0.10	

\* .05 ≤ p < .25

\*\* .01 ≤ p < .05

\*\*\* .0001 ≤ p < .01

**Appendix P  
Pre-Notice**

Factors related to childbirth nurses' intentions to provide continuous labour support to women and their families at childbirth

## **Attention All Nurses**

You are being invited to participate in a study on continuous labour support of patients in active labour

Volunteers are needed to complete a questionnaire on labour support

The Researcher for this study will be distributing the questionnaires in the next few weeks

Your help with this study is greatly appreciated

Thank you,

Laura Payant  
(email address)  
(phone number)

*This study has been approved by the [Name of Hospital] Research Ethics Board*

**Appendix Q**  
**French Pre-Notice**

**Facteurs reliés aux intentions des infirmières spécialisées à la salle d'accouchement qui portent un support continu aux clientes et à leur famille lors de leur travail et de l'accouchement**

## **Attention à toutes les infirmières**

**Vous êtes invitées à participer à une étude ayant comme but d'examiner le support continu que les infirmières portent à leurs clientes en travail.**

**Nous recherchons des bénévoles pour nous aider à compléter un questionnaire au sujet du support continu des patientes en travail.**

**Ces questionnaires seront distribués dans les prochaines semaines**

**Votre aide et support sont grandement appréciés!**

**Merci,**

**Laura Payant**

**Cette étude est une composante clé de la thèse de Maîtrise de Laura Payant I.A. de l'Université d'Ottawa, École des Sciences Infirmières**

**Si vous avez des questions n'hésitez pas à rejoindre Laura à l'adresse électronique suivante  
(courriel)**

**Ou par téléphone : (no. de téléphone)**

**Directrice de thèse de Laura Payant : Dr. Barbara Davies de l'Université d'Ottawa,  
(no. de téléphone)**

*Cette étude a été approuvée par le Conseil d'éthique en recherches de [Nom de l'Hôpital]*

**Appendix R  
Study Poster**

Factors related to childbirth nurses' intentions to provide continuous labour support to women and their families at childbirth

## **Attention All Nurses**

A questionnaire has been distributed to each nurse on this unit

Your opinion on continuous labour support of patients in active labour is very important

I would like to remind you to complete the questionnaire and return it the box provided

Your participation in this study is sincerely appreciated

Thank you,  
Laura Payant  
(email address)  
(phone number)

*This study has been approved by the [Name of Hospital] Research Ethics Board*

**Appendix S  
French Study Poster**

**Facteurs reliés aux intentions des infirmières spécialisées à la salle  
d'accouchement qui portent un support continu aux clientes et à  
leur famille lors de leur travail et de l'accouchement**

## **Attention à toutes les infirmières**

Un questionnaire a été distribué à chaque infirmière  
de cette unité

Votre opinion au sujet du support continu des clientes en travail  
est très important

Si vous êtes intéressé à participer à cette étude,  
Veuillez compléter le questionnaire et le placer à l'endroit désigner à cette fin.

Votre aide et support sont grandement appréciés!

Merci,  
Laura Payant

**Cette étude est une composante clé de la thèse de Maîtrise de Laura Payant I.A. de l'Université  
d'Ottawa, École des Sciences Infirmières**

**Si vous avez des questions n'hésitez pas à rejoindre Laura à l'adresse électronique suivante  
(courriel)  
Ou par téléphone : (no. de téléphone)**

**Directrice de thèse de Laura Payant : Dr. Barbara Davies de l'Université d'Ottawa,  
(no. de téléphone)**

*Cette étude a été approuvée par le Conseil d'éthique en recherches de [Nom de l'Hôpital]*