The Attitudes of Canadian Maternity Care Practitioners Towards Labour and Birth: Many Differences but Important Similarities

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Abstract

Objective: Collaborative, interdisciplinary care models have the potential to improve maternity care. Differing attitudes of maternity care providers may impede this process. We sought to examine the attitudes of Canadian maternity care practitioners towards labour and birth.

Methods: We performed a cross-sectional web- and paper-based survey of 549 obstetricians, 897 family physicians (400 antepartum only, 497 intrapartum), 545 nurses, 400 midwives, and 192 doulas.

Results: Participants responded to 43 Likert-type attitudinal questions. Nine themes were identified: electronic fetal monitoring, epidural analgesia, episiotomy, doula roles, Caesarean section benefits, factors decreasing Caesarean section rates, maternal choice, fear of vaginal birth, and safety of birth mode and place. Obstetrician scores reflected positive attitudes towards use of technology, in contrast to midwives' and doulas' scores. Family physicians providing only antenatal care had attitudinal scores similar to obstetricians; family physicians practising intrapartum care and nurses had intermediate scores on technology. Obstetricians' scores indicated that they had the least positive attitudes towards home birth, women's roles in their own births, and doula care, and they were the most concerned about the consequences of vaginal birth. Midwives' and doulas' scores reflected opposing views on these issues. Although 71% of obstetricians supported regulated midwifery, 88.9% were against home birth. Substantial numbers of each group held attitudes similar to dominant attitudes from other disciplines.

Conclusion: To develop effective team practice, efforts to reconcile differing attitudes towards labour and birth are needed. However, the overlap in attitudes between disciplines holds promise for a basis upon which to begin shared problem solving and collaboration.

Key Words: Labour, natural childbirth, attitudes of health personnel, Caesarean section, evidence-based medicine, epidural, midwifery, home birth, episiotomy

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Résumé

Objectif : Les modèles de soins interdisciplinaires concertés ont le potentiel d'améliorer les soins de maternité. Les diverses attitudes adoptées par les fournisseurs de soins de maternité peuvent nuire à ce processus. Nous avons cherché à examiner les attitudes des praticiens de soins de maternité canadiens envers le travail et l'accouchement.

Méthodes : Nous avons mené un sondage transversal (sur le Web et en format papier) auprès de 549 obstétriciens, de 897 médecins de famille (400 antepartum seulement, 497 intrapartum), de 545 infirmières, de 400 sages-femmes et de 192 doulas.

Résultats : Les participants ont répondu à 43 questions attitudinales de type Likert. Neuf thèmes ont été identifiés : monitorage fœtal électronique, analgésie péridurale, épisiotomie, rôles de la doula, avantages de la césarienne, facteurs entraînant la baisse des taux de césarienne, choix maternel, peur de l'accouchement vaginal et innocuité de l'endroit et du mode de l'accouchement. Les scores des obstétriciens indiquaient des attitudes positives envers le recours à la technologie, contrairement aux scores des sages-femmes et des doulas. Les médecins de famille n'offrant que des soins prénatals ont obtenu des scores attitudinaux semblables à ceux des obstétriciens; les médecins de famille offrant des soins intrapartum et les infirmières ont obtenu des scores intermédiaires en ce qui concerne la technologie. Les scores des obstétriciens indiquaient qu'ils présentaient les attitudes les moins positives envers l'accouchement à la maison, les rôles des femmes quant à leurs accouchements et les soins offerts par les doulas; leurs scores indiquaient également qu'ils étaient les professionnels les plus préoccupés par les conséquences de l'accouchement vaginal. Les scores des sages-femmes et des doulas indiquaient des opinions opposées quant à ces questions. Bien que 71 % des obstétriciens aient soutenu la pratique réglementée de la profession de sage-femme, 88,9 % d'entre eux s'opposaient à l'accouchement à la maison. Un nombre substantiel de membres issus de chacun des groupes présentaient des attitudes semblables aux attitudes dominantes adoptées par les autres disciplines.

Conclusion : Pour favoriser l'efficacité du travail d'équipe, des efforts visant à harmoniser les différentes attitudes envers le travail et l'accouchement s'avèrent requis. Cependant, le chevauchement des attitudes d'une discipline à l'autre s'avère prometteur à titre de fondement pour la mise en place d'un processus concerté de résolution des problèmes et d'une collaboration.

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INTRODUCTION

Childbirth is undergoing dramatic change throughout the world. Rates of Caesarean section are continuing to increase in Canada and are reaching or exceeding 30% in some jurisdictions. While indicated Caesarean section can reduce morbidity and be life-saving for both mother and fetus, primary elective Caesarean section on maternal request is also becoming more accepted.[2] "Fear of vaginal childbirth" has affected many care providers but has been documented most extensively for obstetricians.[3–7] Professionals and women are confronted with conflicting opinions about potential negative consequences of vaginal birth on the pelvic floor (urinary incontinence, fecal incontinence, and sexual problems), compared with those following elective Caesarean section.[8–16] A rigorous study concluded that it is mainly pregnancy itself that increases the risk of urinary and fecal incontinence, and that Caesarean section decreases the risk only slightly compared with vaginal birth and mainly in the short term.[17]

There are multiple reports on the adverse effects of Caesarean section on maternal morbidity and mortality,[17–19] newborn morbidity,[20–25] and maternal complications in a subsequent pregnancy.[26–29] Well-designed Canadian studies have also demonstrated that elective Caesarean section is associated with more maternal[30,31] and newborn[32] morbidity than planned vaginal birth. A comprehensive systematic review concluded that, overall, vaginal birth is safer than Caesarean section for both mother and baby in the first and subsequent pregnancies.[33]

While it is rare to find published studies showing adverse maternal psychosocial outcomes associated with Caesarean section compared with vaginal birth in mainstream medical journals,[34–38] it is also rare to find published information on the benefits of vaginal birth. The conventional medical literature tends to focus on biophysical and anatomic problems,[9,12,14,39–43] to the exclusion of psychosocial issues. Much of this difference may be due to the fact that biophysical outcomes, such as urinary incontinence, are more amenable to capture by chart review and standard clinical assessments than are psychosocial outcomes, which are more complex and more difficult to measure.

While the Society of Obstetricians and Gynaecologists of Canada has taken a position that vaginal childbirth is the safest route for the fetus and newborn in the first and subsequent pregnancies,[44,45] and recently confirmed this in a SOGC Joint Policy Statement on Normal Childbirth,[46] professional groups and the public are likely to be influenced by the emerging literature on the presumed benefits of elective Caesarean section and by official statements from professional bodies in the United States and some North American opinion leaders.[47–52] The popular press and women's magazines regularly feature articles about celebrities glorifying the "virtues" of their elective Caesarean sections.[53–55] In spite of evidence to the contrary, we appear to be witnessing an emerging consensus among many obstetricians that mothers and babies have lower morbidity and mortality associated with Caesarean section compared with vaginal birth.[56–58]

Against this background, fewer family physicians are providing full-scope maternity care, and only specific forms of practice organization and attitudes seem to promote or encourage family physicians to continue providing maternity care.[59] In the short to medium term, the low output of the schools of midwifery in Canada cannot replace diminishing family physicians' involvement in maternity care. Moreover, retention of nurses in maternity care is

challenging, as nursing graduates are too few to replace retiring experienced maternity nurses. The doula role is relatively new to Canada, and despite evidence of benefits associated with doula support,[60–62] doulas are viewed negatively by some maternity care professionals.[63]

Induction of labour at approximately 41+3 weeks is becoming routine yet still controversial.[64–67] Low-risk labouring women are routinely exposed to continuous electronic fetal monitoring, despite the lack of evidence supporting its benefits.[68] Epidural analgesia is offered in most urban settings. It is efficacious for pain relief in labour, but if used routinely and early in labour it increases length of labour, likelihood of instrumental delivery, and perineal trauma.[69–71] Some studies suggest that epidural analgesia also increases the rate of Caesarean section.[72–74] Most women and some care providers are unaware of the unintended consequences of routine use of these technologies, which can lead to a cascade of interventions.[71] This technological transformation of birth is resulting in reduced access to care and restricted choice of care provider and birthplace for many Canadian women, especially those in rural and remote settings.[75–77] Because some technologies are unavailable in rural settings and may be considered essential for providing safe care, their unavailability may contribute to decisions to close some small maternity facilities. In the absence of local rural resources, women are transported to large urban centres for delivery, often without their families, and are attended by care providers who rely on technology for assisting labour and birth.[76]

Change in maternity care patterns for women can be appreciated through better understanding of Canadian maternity care providers' attitudes towards birth. Only when these attitudes are understood can appropriate policy interventions take place. With this information in hand, undergraduate and postgraduate education, continuing professional education, and provincial and federal policies can be developed and implemented so that care providers can develop and sustain positive attitudes towards birth and appreciate the full range of birth options available for low-risk women. Our study is complementary to recent national studies of hospital maternity care practices and the birth experiences of Canadian women.[78,79]

This four-year study of Canadian maternity care providers, and a linked study of nulliparous women, was built on our previous BC pilot studies.[80] In this report we have limited the description of results to quantitative findings that reflect providers' attitudes.

The University of British Columbia Behavioural Research Ethics Board approved the study.

METHODS

We conducted a cross-sectional exploratory survey of maternity care providers' attitudes in large urban tertiary level hospitals, small urban (secondary level) hospitals, and rural (primary and secondary level) hospitals, representing six regions of Canada: British Columbia/Alberta, Saskatchewan/Manitoba, Ontario, Quebec, Atlantic Provinces, and Yukon/Northwest Territories/Nunavut. The survey was both web- and paper-based.

Major national provider organizations facilitated access to their membership databases. The SOGC, the Canadian Association of Midwives, and DONA International (formerly Doulas of North America) provided us with a national email or mailing list for their members; in some cases, for confidentiality reasons, organizations conducted the mailing on our behalf. We attempted to survey all of the 747 midwives and 655 doulas in Canada. The SOGC sent out a mailing on our behalf only to those members practising intrapartum care, 800 of their 1400 members. The 800 is a point estimate provided by the SOGC. To reach family physicians in Canada, we used relevant purchased sections of the Canadian Medical Directory (Southam Information Products, Ltd., 2002) complemented by lists from the membership of the College of Family Physicians of Canada (CFPC) and The Quebec Association of General Practitioners in Maternity Care. We approached only those family physicians self-identified as having an interest in maternity care on College databases. These three sources provided us with a total of 3300 family physicians, whom we attempted to contact by these three methods. The figure of 3300 is based on a point estimate provided by the CFPC plus precise information provided by the other two sources. Guenter et al. used similar methodology successfully for surveying Ontario family physicians involved in maternity care.[81]

All questionnaires were available in English or French on the website or in paper format. Our survey instrument distinguished between family physicians providing intrapartum care and those providing only antepartum care. Both groups were surveyed, because those who provide only antepartum care have the opportunity to influence their patients' decisions about choice of birth provider and approaches to labour and birth.

Using membership lists, we surveyed Canadian urban and rural nurses who were members of the Association of Women's Health, Obstetric and Neonatal Nurses (AWHONN), as well as maternity nurses attending a national meeting of this organization. We complemented the membership list with names of maternity nurses who had taken the ALSO or ALARM course, as supplied by the CFPC and SOGC. Despite our discussions with all

provincial nursing licensing organizations, we were not able to determine the number of nurses in Canada who work in maternity care. In small rural hospitals, nurses almost always function as generalists, but this information is not captured at the national level. We turned to AWHONN, the CFPC, and SOGC for their lists to make up for this lack of information. We recognize that this method may bias our sampling of nurses by providing a more knowledgeable and committed sample of nurses than the norm, as well as by under-representing nurses in rural areas. Due to the complexity of rural definitions, we considered the level I hospital to be a proxy for a rural setting, and used standard definitions for level II and III settings. Through answers to specific demographic questions, we identified providers working in hospitals according to their level of surgical support and type of surgical provider (GP/FP or specialist). We sampled providers using our survey instrument for six months or until the needed numbers of questionnaires from each provider group in each regional, urban versus rural, and linguistic category were received.

The target sample sizes of 1000 physicians, 1000 nurses, 300 midwives, 400 obstetricians, and 250 doulas were chosen to provide a minimum of 80% power to detect differences in means for each group of 0.25 of a standard deviation and differences in proportions of 12% or more. After initial comparisons of mean scores by analysis of variance and of proportions by chi-square tests, we applied multivariate linear and logistic regression models to examine the simultaneous contributions of provider category, gender, age, geographic region, and urban versus rural status. To facilitate visual comparison of attitudinal scores between and within provider groups, we elected to use box plots.[82] To create box plots, we used R version 2.7.0. (R Foundation for Statistical Computing, Vienna, Austria). A box plot is a graphic method for displaying the 10th, 25th, 50th, 75th, and 90th percentiles of a variable. The box plot represents the inter-quartile range. Within the box, the median is marked with a line. Lines from the ends of the box ("whiskers") extend as far as the most extreme values not considered outliers. Points below the 10th percentile and above the 90th percentile from the ends of the box are labelled as outliers. The number of respondents represented by one outlier point varies according to the sample size for each discipline.

Working with participating organizations, who usually did the mailing for us, we sent two emails to each person on email lists of obstetricians and family physicians, nurses, midwives, and doulas. Participants were directed to an online questionnaire or, at their request, were provided with a paper version of the questionnaire in a stamped self-addressed envelope. We supplemented the emails with paper mailings for members of the Quebec Association of General Practitioners in Maternity Care. A 10% email "bounce-back" was experienced, and certain university servers blocked our mail-outs completely. We did not follow up on these difficulties. We used Snap 9.0 Professional (SnapSurveys, London, 2006) survey management software to collect responses to paper and online questionnaires via our dedicated web-based system. Paper surveys were entered manually into the survey website, and all survey data were exported and analyzed using SPSS version 16 (SPSS Inc., Chicago IL).

The basic questionnaire comprised 25 demographic questions and 96 content questions (79 Likert 5-point attitudinal questions [1 = strongly disagree, 2 = disagree, 3 = neutral, 4 = agree, 5 = strongly agree], 7 multiple choice, and 8 open-ended questions). There were minor variations in numbers of questions based on intrinsic differences between care providers. We analyzed responses to 43 attitudinal questions consisting of nine themes.

A three-stage approach was employed to examine the psychometric properties of the questionnaire. First, four content experts (two physicians, a nurse, and an epidemiologist) reviewed the questions to determine themes from clustering scores. After an in-depth review, the content experts reached consensus and identified nine main themes. Second, an item analysis guided by the same content experts was conducted to examine the psychometric properties of the nine themes. This resulted in further refinement of the themes. Finally, the construct validity of these themes was examined with exploratory factor analyses. Four main exploratory factor analyses that regrouped similar constructs were conducted. The maximum likelihood method of estimation with oblimin was used for extraction in all the analyses. The number of factors extracted was based on the a priori assumptions provided by the content experts' suggestions. Findings from the exploratory factor analysis suggested minor modifications (deleting two questions and moving one item to another theme). After these modifications were made, the exploratory factor analysis results confirmed the factor structure of nine themes. These were attitudes towards

1. electronic fetal monitoring (Cronbach alpha [α] = 0.704)
2. epidural analgesia (α = 0.823)
3. utility of episiotomy (α = 0.737)
4. doulas (α = 0.823)
5. factors that increase Caesarean section rates (α = 0.810)
6. factors that decrease Caesarean section rates (α = 0.819)
7. safety by mode or place of birth (α = 0.748)

8. fears of birth mode by respondents or their partners/spouses ($\alpha = 0.929$)

9. maternal choice and mothers' roles in birth ($\alpha = 0.646$)

This last theme had a weaker factor structure than the others, but was nevertheless retained because of its importance for content and face validity, as suggested by the content experts. The amount of total variance explained by each theme using exploratory factor analysis ranged from 38% to 69%.

RESULTS

We exceeded our target sample of physicians, almost met our target sample for nurses, exceeded our midwife sample size and fell slightly short for of our doula sample size. Sixty-nine percent of the respondents replied via our web-based survey, and 31% completed our paper-based surveys. We obtained usable responses from 549 of 800 obstetricians (response rate 68.6%), 897 of 3300 family physicians, 497 providing intrapartum care and 400 providing only antepartum care, (response rate 27.2%), 545 nurses of 886 (response rate 61.5%), 400 midwives of 747 (response rate 53.6%), and 192 of 655 doulas (response rate 29.3%). Given a bounce-back rate of 10% and blockage of our emails by a number of servers, these rates can easily be increased by 10% to 15%. We have identified urban, rural, regional, gender, and language distributions that, with the exception of nurses, doulas, and midwives from Quebec (who are under-represented), reflected the distribution of care providers by region and category according to The Canadian National Physician Survey and membership lists of the national midwife and doula organizations (Table). Because of the nature of our nursing sample strategy, nursing respondents are considered a "convenience sample." The nursing sample was derived from the AWHONN membership list of Canadian nurses involved in maternity care (551), supplemented by nurses who took the ALARM or ALSO course (335), for a total of 886, of whom 545 responded (61.5%). We cannot know what proportion of our electronic mailings were actually received.

In the boxplot figures (Figures 1–9) we elaborate on the nine themes identified as central issues in maternity care.

Attitudes Towards Routine Electronic Fetal Monitoring ($\alpha = 0.704$) (Figure 1)

All disciplines held negative attitudes towards this technology, meaning that all disciplines had median scores below 3 in the range of "disagree" and "strongly disagree." Family physicians providing only antepartum care were the least negative (i.e., most favourable). However, there was considerable overlap between the attitudes of all disciplines, with the exception of midwives whose scores most consistently indicated their lack of support for routine use of this technology. Seventy-eight obstetricians were considered outliers, indicating high levels of support for this technology.

Attitudes Towards Epidural Analgesia ($\alpha = 0.823$) (Figure 2)

Of the different professional groups, obstetricians were the most comfortable with this technology. Most obstetricians agreed that epidural analgesia interfered with the progress of labour, but a similar proportion agreed that it ought to be routinely offered to all women. All other disciplines' scores indicated that they disagreed with routine offering of epidural analgesia, apart from family physicians practising only antepartum care, whose scores were similar to those of obstetricians. For the overall theme, intrapartum family physicians' and nurses' scores indicated disagreement, while midwives and doulas disagreed most strongly with statements in favour of epidural analgesia. The overlapping quartiles show that significant numbers of all disciplines' scores were similar. Thirteen midwives were outliers, indicating their relative support for this method of pain relief.

Attitudes Towards Routine Episiotomy ($\alpha = 0.737$) (Figure 3)

Scores from all respondents indicated negative attitudes towards routine episiotomy, although a few outliers from all groups except doulas had favourable attitudes. The most negative were midwives and doulas, followed by intrapartum family physicians and nurses. Family physicians practising only antepartum maternity care were most likely to hold favourable attitudes towards this procedure, with scores even more favourable than those of obstetricians. There was considerable overlapping of scores between disciplines.

Attitudes Towards Doulas ($\alpha = 0.823$) (Figure 4)

Midwives agreed most strongly with the provision of labour support by doulas, although 12 midwife outliers were not supportive. Obstetricians were neutral, with one half favourable towards doulas and one half not. Overall, the other disciplines held attitudes that were positive towards doulas, but about 25% of nurses' and family physicians' scores indicated unfavourable attitudes towards doulas; 33 family physicians providing antepartum care only were outliers strongly opposed to doulas.

Attitudes Towards the Pelvic Floor Benefits of Caesarean Section ($\alpha = 0.810$) (Figure 5)

All disciplines, especially midwives and doulas, had scores indicating disagreement that Caesarean section preserved pelvic floor integrity, although family physicians practising only antepartum care were more inclined to agree than obstetricians. We found that the scores of 25% of

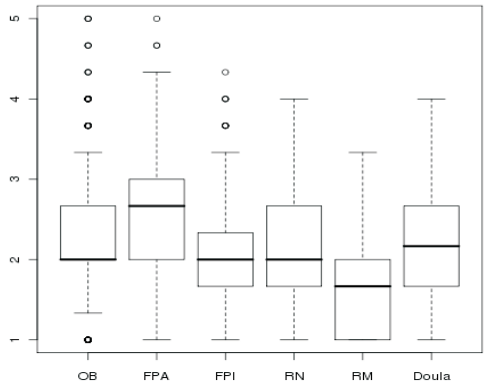
Characteristics by selected demographics and location

Demographic		OB	FPA	FPI	RN	RM	Doula
Number of providers who completed the survey		549	401	496	545	400	192
Language							1
English		384 (69.9)	376 (94)	423(85.1)	512 (93.9)	346 (86.5)	89 (98.4)
French		165 (30.1)	24 (6.0)	74 (14.9)	33 (6.1)	54 (13.5)	3 (1.6)
Total		549 (100)	400 (100)	497 (100)	545(100)	400 (100)	192 (100)
Gender							
Female		290 (52.9)	273 (68.6)	338 (68.0)	542 (99.6)	400 (100)	192 (100)
Male		258 (47.1)	125 (31.4)	159 (32.0)	2 (0.4)	0 (0)	0 (0)
Total		548 (100)	398 (100)	497 (100)	544 (100)	400 (100)	192 (100)
Age							
< 35		73 (13.4)	65 (16.3)	97 (19.7)	89 (16.8)	102 (27.1)	73 (56.6)
35–44		169 (31.1)	132 (33.2)	169 (34.3)	141 (26.6)	112 (29.8)	35 (27.1)
45–54		144 (26.5)	121 (30.4)	167 (33.9)	222 (41.8)	107 (28.5)	21 (16.3)
≥ 55		158 (29.0)	80 (20.1)	59 (12.0)	79 (14.9)	55 (14.6)	0 (0)
Total		544 (100)	398 (100)	492 (100)	531 (100)	376 (100)	129 (100)
*Rural/ Urban practice							
Rural		46 (9.0)	17 (44.7)	139 (28.3)	83 (22.0)	66 (19.0)	6 (5.2)
Urban		435 (91.0)	21 (55.3)	351 (71.7)	283 (78.0)	275 (81.0)	108 (94.8)
Total		481 (100)	38 (100)	490 (100)	366 (100)	341 (100)	114 (100)
Region	Province/ Territory	OB	FPA	FPI	RN	RM	Doula
1	British Columbia	59 (10.9)	60 (15.3)	92 (18.6)	79 (14.6)	75 (18.8)	73 (38.4)
1	Alberta	35 (6.5)	56 (14.3)	72 (14.6)	52 (9.6)	22 (5.5)	38 (20.0)
2	Saskatchewan	15 (2.8)	13 (3.3)	30 (6.1)	36 (6.7)	5 (1.3)	5 (2.6)
2	Manitoba	13 (2.4)	28 (7.1)	31 (6.3)	43 (8.0)	8 (2.0)	14 (7.4)
3	Ontario	156 (28.8)	159 (40.6)	115 (23.3)	137 (25.4)	217 (54.3)	48 (25.3)
4	Quebec	209 (38.6)	37 (9.4)	88 (17.8)	48 (8.9)	55 (13.8)	6 (3.2)
5	Prince Edward Island	5 (0.9)	2 (0.5)	0 (0)	3 (0.6)	0 (0)	1 (0.5)
5	New Brunswick	10 (1.8)	9 (2.3)	14 (2.8)	20 (3.7)	1 (0.3)	1 (0.5)
5	Nova Scotia	23 (4.3)	16 (4.1)	21 (4.3)	87 (16.1)	7 (1.8)	4 (2.1)
5	Newfoundland & Labrador	8 (1.5)	7 (1.8)	8 (1.6)	15 (2.8)	1 (0.3)	0 (0)
6	Yukon	2 (0.4)	1 (0.3)	4 (0.8)	12 (2.2)	2 (0.5)	0 (0)
6	Northwest Territories	6 (1.1)	1 (0.3)	16 (3.2)	6 (1.1)	3 (0.8)	0 (0)
6	Nunavut	0 (0.0)	3 (0.8)	3 (0.6)	2 (0.4)	4 (1.0)	0 (0)
	Total	541 (100)	392 (100)	494 (100)	540 (100)	371 (100)	190 (100)

OB: obstetricians; FPI: family physicians providing intrapartum care; FPA: family physicians providing only antepartum care; RM: midwives; RN: nurses.

*Rural: intrapartum services in level I hospitals. Urban: most intrapartum services provided in level II or III hospitals. Non-intrapartum and non-response not included.

Figure 1. Attitudes towards electronic fetal monitoring (Cronbach alpha: 0.704)



Scale 1: Survey statements

1. Electronic fetal monitoring provides important benefits for the fetus.
2. Electronic fetal monitoring reduces the chance of litigation.
3. Electronic fetal monitoring is a good strategy for reducing maternity care provider groups' workload.

obstetricians, family physicians, and nurses indicated that they believed that urinary incontinence could be prevented by delivery by Caesarean section.

Attitudes Towards Approaches to Reducing the Caesarean Section Rate (α = 0.799) (Figure 6)

There was overall agreement between all disciplines about these approaches to reducing the rate of Caesarean section. Doulas and midwives had the most positive attitudes towards these methods of reduction and obstetricians the least. Forty-two percent of obstetricians were in favour of a woman's right to choose Caesarean section without medical indications, compared with 19% of family physicians, 25% of nurses, 19% of midwives, and 29% of doulas.

Attitudes Towards Maternal Choice and Mothers' Roles in Birth (α = 0.646) (Figure 7)

Overall, obstetricians' scores indicated that they were the least positive about maternal roles and beliefs in the birth process. Family physicians practising only antepartum maternity care were largely neutral, while the other disciplines strongly agreed with these concepts, with midwives and doulas the most positive. Only 35% of obstetricians were in favour of birth plans, compared with 59%, 54%, 68%, 63%, and 83% of antepartum and intrapartum family physicians, nurses, midwives, and doulas, respectively.

Attitudes Towards Care Providers' Fears of Vaginal Birth for Themselves or Their Partners (α = 0.929) (Figure 8)

Obstetricians and family doctors practising only antepartum maternity care had scores indicating that they were the least comfortable with vaginal birth, with midwives and doulas the most comfortable. The scores of intrapartum family physicians and nurses fell between the two groups. Overlap between disciplines was evident, and the large number of outliers indicated the controversial nature of the questions. Midwives and doulas generally showed strong agreement on this issue, but 84 midwives and 31 doulas were outliers, indicating their lack of agreement with the majority views of their discipline.

Attitudes Towards Safety by Mode or Place of Birth (α = 0.748) (Figure 9)

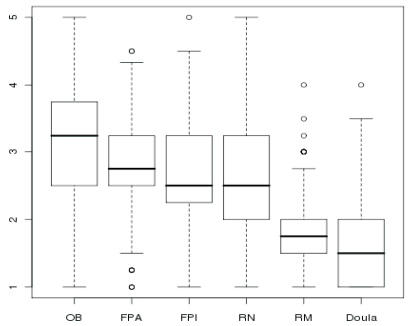
Overall, obstetricians had neutral attitudes towards these issues, while family physicians, nurses, midwives, and doulas had unfavourable attitudes towards these questions, reflecting more positive views about birth at home or in a birthing centre, and vaginal birth compared with Caesarean section.

Up to 51% of the variance in these nine attitudinal scales was accounted for by membership in a particular discipline. After adjustment for age, gender, hospital level, and region, the results remained largely unchanged. While virtually all differences between different care provider groups meet conventional levels of statistical significance, we have not reported them here. This is because three of the groups included in our study (midwives, doulas, and obstetricians) represent almost an entire population (census) rather than a sample, and because our primary goal was to highlight similarities and differences and to show the level of agreement or disagreement both within and between the groups. Instead, we used boxplots to depict the data visually. In addition, we believed that a large number of statistical comparisons would detract from, rather than enhance, the conclusions of our study.

DISCUSSION

We have examined attitudes towards important elements in contemporary maternity care from a large sample of maternity care providers across Canada. Although our sample

Figure 2. Attitudes regarding epidural analgesia
(Cronbach alpha: 0.823)

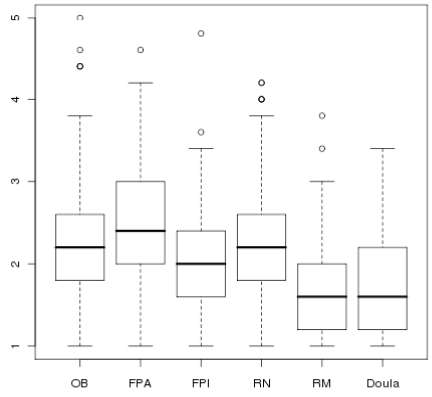


Scale 2: Survey statements

1. Epidural analgesia should be routinely offered to all women in labour.
2. *Epidural analgesia increases **[does not increase]** the frequency of instrumental birth (forceps and vacuum).
2. *Epidural analgesia interferes **[does not interfere]** with the normal progress of labour.
3. *Epidural analgesia when used early in labour (less than 4 cm of cervical dilatation) is **[not]** associated with an increase in fetal malpositions.

*indicates reverse coding

Figure 3. Attitudes regarding episiotomy
(Cronbach alpha: 0.737)



Scale 3: Survey statements

1. Episiotomy, if done routinely, can prevent pelvic floor relaxation.
2. Episiotomy should be used for all instrumental vaginal births.
3. Episiotomy, if done routinely, can prevent 3rd/4th degree tears.
4. Episiotomy is easier to repair than lacerations.
5. *Episiotomy, if done routinely, leads to more harm than good.

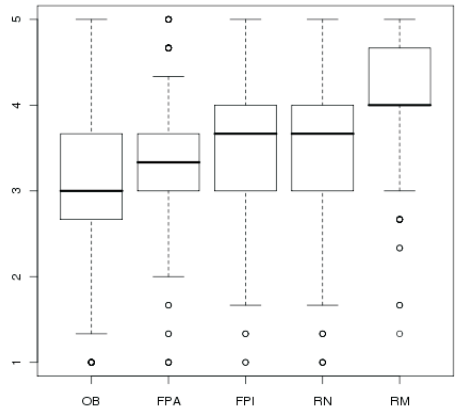
*indicates reverse coding

covers all regions and is well-distributed in maternity care settings, it is not fully representative of all maternity care providers. Midwives, doulas, and nurses from Quebec are under-represented. For maternity care to be successful in an era of reduced resources, closing maternity units, an aging workforce (especially obstetricians and nurses), fewer family physicians attending births, and insufficient numbers of midwives, new collaborative maternity care models will need to be developed. Driven in part by these changes, important efforts have been made towards developing new collaborative maternity care models.[83]

We found that, for many issues, obstetricians as a group were more in favour of technological approaches than other maternity care providers. They tended to favour epidural analgesia on demand, repeat Caesarean sections for women with a uterine scar, and the active management of labour, and they were the most likely to favour elective Caesarean section on maternal request.

Despite their majority support for regulated midwifery, we found that obstetricians strongly oppose home birth and care in out-of-hospital birth centres. Opposition to home birth, however, is not supported by Canadian evidence, which supports safe outcomes for mothers and infants when autonomous regulated midwives carry out home birth as part of a well-developed and supported system.[84,85] The lack of consensus on the safety of home birth between disciplines should be addressed, because these disciplines need to cooperate in order to support what is an important part of midwifery practice. Women and infants should not be caught in interprofessional conflicts.

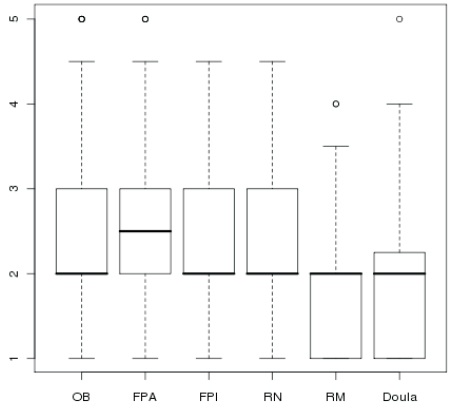
Figure 4. Positive attitudes towards doulas (Cronbach alpha: 0.823)



Scale 4: Survey statements

1. In my practice, doulas are welcome.
2. There is a need for doula services in maternity care.
3. Doulas improve birth outcomes.

Figure 5. Attitudes towards pelvic floor benefits of Caesarean section (Cronbach alpha: 0.810)



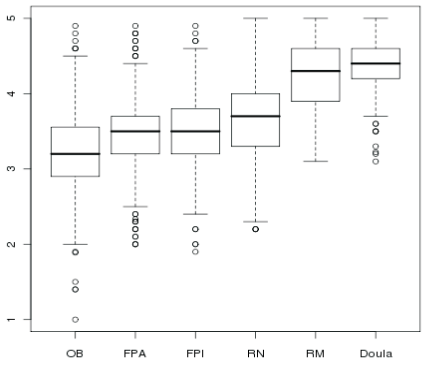
Scale 5: Survey statements

1. Caesarean section prevents urinary incontinence.
2. Caesarean section prevents sexual dysfunction.

We found that, in contrast to other reports showing up to 40% of obstetricians planning elective Caesarean sections for themselves or their partners, only 8% of Canadian obstetricians would choose Caesarean section over vaginal delivery for themselves or their partners (compared with 0–3% in the other disciplines). We have demonstrated that obstetricians are more concerned about the consequences of vaginal birth than other groups, particularly midwives and doulas; this concern is grounded in their fears about sexual health, about fecal and urinary incontinence, and about pelvic floor functioning in general. Their concerns may be based on their personal experiences and on repeated exposure to the adverse consequences of birth that they see in their roles as specialists and consultants. Because nurses also frequently work with high-risk women in labour, it is surprising that their attitudes do not more closely mirror those of obstetricians. Perhaps this finding reflects the selected nature of our nursing sample. The other maternity care team members would be expected to see a more normal population and therefore have a more positive view of vaginal childbirth. These opposing attitudes are indeed based on different practice realities. An appreciation of these different realities is needed in order to avoid conflict and to stimulate cooperation and team building.

It is important to note that family physicians providing only antepartum maternity care held attitudes and beliefs that were more similar to those of obstetricians than those held by family doctors providing intrapartum care. Family physicians not practising intrapartum maternity care may choose to practise this way because they have been influenced by obstetrician teachers and colleagues towards a view of birth as associated with significant risk. These family physicians are in a position to influence their patients towards technological approaches and Caesarean section. Moreover, they

Figure 6. Attitudes towards factors that decrease the Caesarean section rate (Cronbach alpha: 0.799)

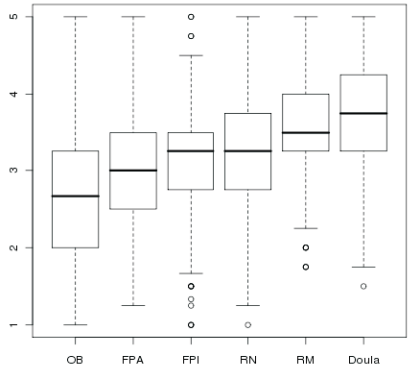


Scale 6: Survey statements

1. Changing medical and nursing education to encourage more positive attitudes towards vaginal birth.
2. Organized pre-Caesarean section peer review of all elective Caesarean sections.
3. Organized "after the fact" formal peer review of all Caesarean sections.
4. Providing more midwifery services.
5. Providing more doula services.
6. Eliminating routine electronic fetal monitoring.
7. Encouraging more family physicians to provide intrapartum maternity care.
8. Reducing the number of inductions of labour for non-compelling reasons.
9. Active management of labour improves **[does not improve]** birth outcomes.
10. *It is a woman's right to choose a Caesarean section for herself, even in the absence of medical indication.

*indicates reverse coding

Figure 7. Attitudes towards the importance of maternal choices and the role played by the mother in her own delivery (Cronbach alpha: 0.646)



Scale 7: Survey statements

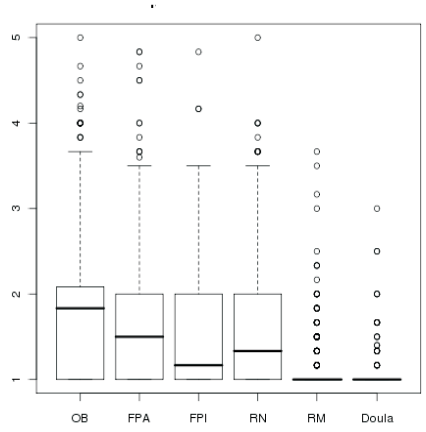
1. Having a vaginal birth is a more empowering experience than delivering by Caesarean section.
2. Women should be encouraged to develop a birth plan.
3. Women who deliver their baby by Caesarean section miss an important life experience.
4. The most important determinant of a successful birth is the woman's own confidence in her ability to give birth.

decide when and to whom to refer their patients, and their perspectives may be transmitted to their patients even before referral. This may influence their patients to hold views that are negative towards normal or natural vaginal childbirth and positive towards technological birth.

Nurses' scores on attitudes usually fell between those of other maternity care providers. Their attitudes may reflect the reality that in their work lives they have to balance the contrasting views of the other care providers with whom they work. As well, their scope of practice limits their ability to initiate decisions about interventions, although they can influence the decision-making processes.

Our findings have shown that doulas are accepted by most midwives, while obstetricians are ambivalent and other providers are generally, though not strongly, positive in their support. We previously found that there can be conflict between doulas and maternity care providers,[57] but this issue does not seem to affect midwives to the same degree. We have also found that in some cases doulas have gone beyond their defined scope of practice into the role of advocate.[63] This phenomenon, while rare, may contribute to negative views of doulas by some maternity care providers. Given the similarity of their attitudes to those of midwives, doulas may also be less likely to exceed their scope of practice in low-risk situations when they are supporting women in midwifery practice. The issue of doulas exceeding their scope of practice by taking on the role of advocate suggests a need for clarification of the doula's role, as a support person rather than an advocate. The DONA International code of ethics and DONA International standards of practice must be followed.[86,87] Because doulas are relatively new to the Canadian maternity care system (DONA International was established in 1992 and became active in Canada when the first doula courses were offered in 1993), it is not surprising that their role is not yet always clear. As current

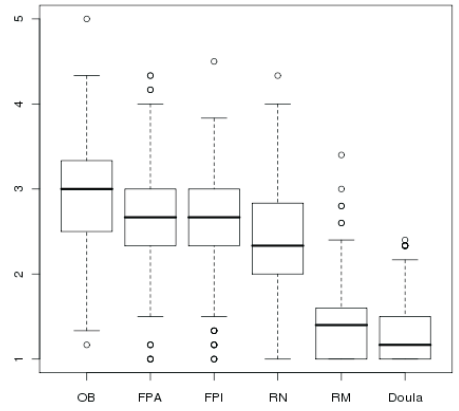
Figure 8. Attitudes toward provider/spouse fears about birth mode (Cronbach alpha: 0.929)



Scale 8: Survey statement

1. If my partner or I were pregnant, with an apparently normal pregnancy, I would prefer an elective Caesarean section instead of a vaginal birth.
2. I fear vaginal birth for myself or my partner as it may compromise sexual functioning.
3. I fear vaginal birth for myself or my partner as it may lead to urinary incontinence.
4. I fear vaginal birth for myself or my partner as it may lead to fecal incontinence or involuntary passage of gas.
5. Because of the unpredictability of vaginal birth, I would prefer a scheduled Caesarean section for myself or my partner.
6. I fear vaginal birth for myself or my partner as it could lead to perineal and/or pelvic floor damage.

Figure 9. Attitudes toward safety by mode or place of birth (Cronbach alpha: 0.748)



Scale 9: Survey statements

1. If a woman has had a previous Caesarean section, a scheduled repeat Caesarean section can improve newborn outcome.
2. Home birth is more dangerous than hospital birth, even in an uncomplicated pregnancy.
3. If available, for women at no apparent risk, I believe out-of-hospital birth centres can **[not]** provide safe maternity care.
4. Caesarean section is safer for the baby than vaginal birth.
5. Caesarean section is as safe as vaginal birth for women.
6. *I **[do not]** support licensed/regulated midwifery services.

*indicates reverse coding

research shows the benefit of doula care,[61,62] more education for care providers about the role of doulas in the maternity care system is required.

Our finding that 25% of obstetricians, family physicians, and nurses believed that urinary incontinence and sexual problems could be prevented by use of Caesarean section for delivery suggests that these care providers have concerns about how vaginal delivery is conducted. Many, even most, women delivering vaginally are coached by their care provider to push with a closed glottis in the second stage of labour. A randomized controlled trial found that women coached to push in this way were negatively affected in terms of first urge to void, bladder capacity, and pelvic organ prolapse at three months postpartum, compared with women who pushed spontaneously. It is important to recognize that most of the studies of pelvic floor function that influence the attitudes of care providers are based on labour and birth conducted with many non-evidence-based interventions.[89,90] Such interventions include routine EFM, high rates of epidural analgesia (associated with intravenous infusions, EFM, and immobilization), use of the lithotomy position (often with use of stirrups) for giving birth, prolonged pushing with a closed glottis, and routine episiotomy—all of which have the potential to result in unfavourable pelvic floor outcomes when compared with outcomes after Caesarean section. In studies of urinary incontinence, long-term follow-up and population-based studies show little difference by mode of birth, and virtually all differences disappear by age 50. Under controlled conditions, severe urinary incontinence is equally prevalent after each mode of birth by three months postpartum.[90,91] By six months postpartum there are no differences in sexual functioning between women who have had a vaginal birth and those who have had a Caesarean section.[91,92] The belief held by some care providers that negative pelvic floor outcomes

can be prevented by Caesarean section needs further exploration.

We have demonstrated that key maternity care providers have differing views on encouraging birth plans and the role of women in directing their own care. Many obstetricians seemed to think that women's beliefs and their role in influencing their own birth outcomes did not affect those outcomes, while others, especially midwives and doulas, strongly agreed that women's attitudes towards birth influenced their birth outcomes. However, there appears to be a growing agreement, mainly among obstetricians, that elective Caesarean section is as safe as vaginal birth and is consequently a reasonable maternal choice that can be supported.

Notwithstanding our finding that many obstetricians appear to hold attitudes that support the wide use of technology in labour and delivery, this is not the case for a significant minority of obstetricians. There are, in fact, important attitudinal differences among obstetricians on most issues; on the other hand, there are also significant numbers of members of all disciplines who hold similar views on most issues. The zones where the members of the maternity care disciplines have comparable attitudes could form the starting point for dialogue across disciplines.

Unless practitioners in the maternity care disciplines have opportunities to reach across differences in attitudes and practice styles, they will be unable to forge the collaborations necessary to provide excellent interprofessional maternity care. In the absence of attitudinal consensus on many birth issues, and because of a lack of appreciation of the ways in which attitudes affect care, interprofessional team practice faces challenges. Nonetheless, interprofessional collaboration and attention to women's beliefs and values are necessary, because when women and families are at the centre of the team, maternity and newborn outcomes will be improved. Additionally, interprofessional practice will permit maternity care providers to continue longer in practice and to optimize existing resources. The new SOGC Joint Policy Statement on Normal Birth supports care providers' efforts to work collaboratively.[46] In order to help maternity care providers work together in harmony, leaders in education, policy, and professional organizations will need to plan together carefully and consider how to redesign the maternity care system to accommodate differing attitudes towards childbirth.

CONCLUSION

We found that obstetricians, midwives, and doulas differed substantially in their attitudes towards birth, with obstetricians favouring technological approaches and midwives and doulas favouring approaches that relied less on technology. The attitudinal scores of family physicians practising intrapartum care and of nurses fell between those of obstetricians and midwives, while family physicians practising only antepartum maternity care had attitudinal scores that were similar to those of obstetricians. Family doctors who practise only antepartum care are in a position to influence their patients towards viewing birth as a technological event. We have determined that, despite overall differences between the attitudes of members of the maternity care disciplines, there are also substantial areas of agreement. For example, at least 15% of obstetricians have attitudes towards maternity care that are similar to those of the majority of midwives, even for contentious issues. This similarity of views offers a starting point for mutual understanding and for team practice to develop. Reconciliation of differing views about normal childbirth among the maternity care disciplines is essential for the benefit of women and their families.

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