Family physicians who provide intrapartum care and those who do not

Very different ways of viewing childbirth

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Abstract

Objective To examine FPs' attitudes toward birth for those providing intrapartum care (IPC) and those providing only antepartum care (APC).

Design National, cross-sectional Web- and paper-based survey.

Setting Canada.

Participants A total of 897 Canadian FPs: 503 providing both IPC and APC (FPIs), 252 providing only APC but who previously provided IPC (FPPs), and 142 providing only APC who never provided IPC (FPNs).

Main outcome measures Respondents' views (measured on a 5-point Likert scale) on routine electronic fetal monitoring, epidural analgesia, routine episiotomy, doulas, pelvic floor benefits of cesarean section, approaches to reducing cesarean section rates, maternal choice and the mother's role in her own child's birth, care providers' fears of vaginal birth for themselves or their partners, and safety by mode or place of birth.

Results Results showed that FPIs and FPPs were more likely than FPNs were to take additional training or advanced life support courses. The FPIs consistently demonstrated more positive attitudes toward vaginal birth than did the other 2 groups. The FPPs and FPNs showed significantly more agreement with use of routine electronic fetal monitoring and routine epidural analgesia ($P<.001$). The FPIs displayed significantly more acceptance of doulas ($P<.001$) and more disagreement with the pelvic floor benefits of cesarean section than other FPs did ($P<.001$). The FPIs were significantly less fearful of vaginal birth for themselves or their partners than were FPPs and FPNs ($P<.001$). All FP groups agreed on rejection of elective cesarean section, in the absence of indications, for themselves or their partners and on support for vaginal birth in the presence of uterine scar. While all FP groups supported licensed midwifery, three-quarters thought home birth was more dangerous than hospital birth and showed ambivalence toward birth plans. Only 7.8% of FPIs would choose obstetricians for their own or their partners' maternity care.

Conclusion The FPIs had a more positive, evidence-based view of birth. It is likely that FPs providing only APC are influencing women in their practices toward a relatively negative view of birth before referral to obstetricians, FPIs, or midwives for the actual birth. The relatively negative views of birth held by FPs providing only APC need to be addressed in family practice education and in continuing education.

EDITOR'S KEY POINTS

- In Canada, cesarean section rates are reaching or exceeding 30% in most jurisdictions. Interactions with health care providers during preconception and pregnancy can influence women's perceptions and expectations about birth. In both Canada and United States, excessively high cesarean section rates are associated with adverse outcomes for mothers and babies and with deteriorating perinatal indices. Most antenatal care in Canada is provided by FPs who do not provide intrapartum care.

- Results of this study demonstrate that FPs providing only antenatal care are more likely to hold views of birth that are more interventionist and more concerned about potential negative effects of vaginal birth, and they are in a position to influence their patients toward such views.

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Les médecins de famille qui donnent des soins pernatals et ceux qui n'en donnent pas

Des façons très différentes de voir les naissances

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Résumé

Objectif Examiner l'idée que se font les MF de l'accouchement, chez ceux qui fournissent des soins pernatals (SPN) par rapport à ceux qui offrent uniquement des soins ante partum (SAP).

Type d'étude Enquête nationale transversale à l'aide du Web et de formulaires.

Contexte Le Canada.

Participants Un total de 897 MF Canadiens : 503 dispensant des SPN et des SAP (MFP), 252 fournissant seulement des SAP mais qui avaient auparavant fourni des SPN (MFAP) et 142 prodiguant uniquement des SAP et n'ayant jamais donné des SPN (MFA).

Principaux paramètres à l'étude Opinion des répondants (mesurée sur une échelle de Likert à 5 points) sur la surveillance électronique fœtale de routine, l'analgésie épidurale, l'épisiotomie de routine, les doulas, les avantages de la césarienne pour le plancher pelvien, les façons de réduire le taux de césariennes, les choix maternels et le rôle de la mère dans la mise au monde de son enfant, les craintes du personnel soignant vis-à-vis un accouchement vaginal pour elles-mêmes ou pour leurs partenaires et la sécurité en fonction des méthodes ou lieux d'accouchement.

Résultats Les résultats montrent que les MFP et les MFAP étaient plus susceptibles que les MFA de suivre des formations additionnelles ou des cours avancés de maintien des fonctions vitales. Les MFP avaient généralement des attitudes plus positives que les 2 autres groupes vis-à-vis l'accouchement vaginal. Les MFAP et les MFA étaient significativement plus en faveur de l'utilisation routinière du monitorage électronique du fœtus et de l'analgésie par épidurale ($P<,001$). Par rapport aux autres MF, les MFP démontraient une acceptation significativement meilleure à l'égard des doulas ($P<,001$) et plus de désaccord concernant les avantages de la césarienne pour le plancher pelvien ($P<,001$). Les MFP exprimaient significativement moins de craintes que les MFA et les MFAP en cas d'accouchement vaginal pour elles-mêmes ou leur partenaires ($P<,001$). Tous les groupes de MF étaient d'accord pour refuser une césarienne élective pour elles-mêmes ou leur partenaires en absence d'indications et pour encourager un accouchement vaginal en présence d'une cicatrice utérine. Alors que tous les groupes de MF acceptaient les sages-femmes diplômées, les trois-quarts estimaient que l'accouchement était plus dangereux à la maison qu'à l'hôpital et se montraient ambivalents à l'égard des accouchements planifiés. Seulement 7,8% des MFP choisiraient un obstétricien pour les soins de maternité pour elles-mêmes ou leurs partenaires.

Conclusion Les MFP avaient une opinion de l'accouchement plus positive et qui reposait sur des données probantes. Il est probable que les MF qui donnent seulement des soins ante partum amènent leurs patientes à avoir une idée relativement négative de l'accouchement avant de les diriger vers un obstétricien, un MFP ou une sage-femme pour leur accouchement. On devra tenir compte de cette opinion plutôt négative de l'accouchement propre aux MF qui ne font que des soins ante-partum au cours de la formation en médecine familiale et de la formation médicale continue.

Cet article a fait l'objet d'une révision par des pairs.
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POINTS DE REPÈRE DU RÉDACTEUR

- Dans la plupart des territoires canadiens, le taux de césariennes atteint ou dépasse les 30%. Durant la période pré-conception et la grossesse, les interactions avec les intervenants de la santé peuvent influencer les perceptions et les attentes des femmes quant à l'accouchement. Au Canada comme aux États-Unis, les taux trop élevés de césariennes sont associés à des effets négatifs pour la mère et pour l'enfant et à des indices périnatals moins favorables. Au Canada, ce sont des MF qui ne font pas de soins pernatal qui prodiguent la majeure partie des soins ante partum.

- Cette étude montre que les MF qui se limitent aux soins ante partum sont plus susceptibles d'avoir, au sujet de l'accouchement, une attitude plus interventionniste et plus préoccupée des effets négatifs potentiels de l'accouchement vaginal, alors qu'ils sont en bonne position pour influencer l'opinion de leurs patientes à ce sujet.

The National Maternity Care Attitudes Study (NMCAS)[1] was undertaken to investigate differences of opinion and beliefs or attitudes found among those providing maternity care in a pilot study conducted in Vancouver, BC.[2] We sought to see if these variations seen in the Vancouver pilot were generalized across Canada and, if so, to understand what accounted for such variation. Recent Canadian studies have demonstrated that elective cesarean section, in the absence of indications, is associated with more maternal[3,4] and newborn[5] morbidity than planned vaginal birth is.[6] The Society of Obstetricians and Gynaecologists of Canada has taken the position that, in the absence of specific indications, vaginal childbirth is the safest route for the newborn in the first and subsequent pregnancies.[7-9]

Technological transformation

Four out of 5 Canadian women are exposed to 1 or more major interventions during labour and birth,[10,11] and women in low-risk labour are routinely exposed to continuous electronic fetal monitoring, despite an absence of evidence supporting its benefits.[12] Epidural analgesia is efficacious for pain relief in labour, but if used routinely and before active labour is established, it increases the length of labour, the likelihood of instrumental delivery and perineal trauma,[13-16] and possibly the cesarean section rate.[17-19] Most women and some providers are unaware of the collateral consequences associated with routine use of these technologies. This technological transformation of birth is inadvertently resulting in reduced access and choice of provider and birthplace for many Canadian women, especially those in rural areas. This is because, as both providers and women come to see the need for the latest technology in *all* births, this standard is increasingly difficult to maintain in small low-volume maternity units. Hence, these units are closing or transferring a high proportion of their patients to settings where the newest technology is not only available but also used in most normal births.[20-22]

This study is one of a series related to the functioning of the Canadian maternity care system.[23,24] Approximately 61% of FPs and GPs provide care for pregnant women, but only approximately 11% provide intrapartum care (IPC).[25] We estimate that approximately 15 000 (50%) FPs and GPs in Canada are providing only antepartum care (APC). Approximately 34% of women reported receiving most of their antenatal care from FPs, but only 14.6% reported that FPs delivered their babies.[23]

Comparisons between maternity care providers in our national study[1] found that FPs providing only APC had attitudes closely resembling those of obstetricians, and at times were even more interventionist or technologically inclined. Given that FPs providing only APC provide such care to a large volume of pregnant women, and given the potential effects that physicians have on the attitudes of their patients, this paper aims to assess the variation in attitudes toward childbirth among FPs who previously provided IPC (FPPs), those who never provided IPC (FPNs), and those currently providing IPC (FPIs).

METHODS

A full description of the methodology covering all the provider groups has been reported elsewhere.[1] Briefly, we conducted a cross-sectional Web- and paper-based survey of maternity care providers' attitudes in large urban tertiary hospitals, small urban hospitals, and rural primary care hospitals, representing all 6 regions of Canada: British Columbia and Alberta, Saskatchewan and Manitoba, Ontario, Quebec, the Atlantic Provinces, and the Territories. The survey instrument was extensively pilot-tested for validity and comprehensibility in several studies, and pilot results using the questionnaire have been published.[2]

This study was approved by the University of British Columbia Behavioural Research Ethics Board.

Sampling methods and inclusion criteria

To reach the approximately 30 000 FPs in Canada,[25] we consulted with the College of Family Physicians of Canada (CFPC) and then purchased relevant sections of the Canadian Medical Directory (Southam Information Products, Ltd, 2002), complemented by lists from the membership of the CFPC and the Quebec Association of General Practitioners in Maternity Care (AOPQ). We surveyed only those FPs self-identified as having an "interest in maternity care"—approximately 3300. Questionnaires were professionally translated and were made available in English and French on a study website or in paper format.

Data collection

We sent 2 e-mail messages to each FP with an available e-mail address. Participants were directed to an online questionnaire or, if they requested, were provided with the paper version and self-addressed, stamped envelopes. This was supplemented with paper mailings for members of the AOPQ. A 7% to 10% e-mail "bounce-back" rate was experienced. We did not follow up on bounce-back questionnaires. We used Snap 9.0 Professional (SnapSurveys, 2006) software to collect responses to paper and online questionnaires via our Web-based system. Analysis was conducted using SPSS, version 16. We estimate that no more than half of the 3300 potential recipients actually received the survey. We classified providers by intrapartum and antepartum type and hospitals by level of surgical support and type of surgical provider (FP and GP or specialist). We sampled FPs for 6 months in 2007.

Questionnaire structure

The questionnaire comprised 25 demographic questions and 94 content questions (79 attitudinal questions scored on a

5-point Likert scale from strongly disagree to strongly agree, 7 multiple-choice questions, and 8 open-ended questions).

Statistical considerations

For basic demographic comparisons, categorical data were analyzed using χ^2 tests and continuous data were analyzed using ANOVA (analysis of variance). We used the pre-established and reliability-tested NMCAS scales,[1] which, through factor analysis, reduced the 79 Likert items to 9 Likert scales. Differences between group mean scores were analyzed, using both nonparametric and parametric tests, which provided similar outcomes. We report ANOVA tests owing to their higher robustness. Post-hoc Bonferroni tests were used to establish differences between individual groups. In addition to testing the significance of mean differences between the 3 FP cohorts, the size of differences was quantified using Cohen f^2, a standardized measure of variability.[26] For the results in **Figures 1** to **3**, χ^2 tests of independence were used. All results were deemed significant at $\alpha = .05$. For particularly important items, we present the proportion of agreement in the figures.

RESULTS

We obtained responses from 897 family physicians (approximately 27.2% response rate): 503 FPIs, 252 FPPs, and 142 FPNs.

Demographics

As outlined in **Table 1,** the respondents' profiles varied somewhat from the ideal distribution owing to

Table 1. Demographic characteristics of survey respondents

CHARACTERISTICS	FP TYPE			*P* VALUE
	FPI (N = 503)*	FPP (N = 252)*	FPN (N = 142)*	
Sex, n (%)				<.001
• Male	158 (31.4)	103 (42.2)	23 (16.2)	
• Female	345 (68.6)	147 (58.8)	119 (83.8)	
Mean (SD) age, y	43.25 (9.43)	48.50 (9.92)	39.94 (7.88)	<.001††§
Language, n (%)				<.001
• English	429 (85.3)	243 (96.4)	127 (89.4)	
• French	74 (14.7)	9 (3.6)	15 (10.6)	
Region, n (%)				
• British Columbia or Alberta	166 (33.6)	88 (35.8)	27 (19.6)	
• Saskatchewan or Manitoba	62 (12.6)	32 (13.0)	8 (5.8)	
• Ontario	111 (22.5)	87 (35.4)	70 (50.7)	
• Quebec	88 (17.8)	16 (6.5)	18 (13.0)	
• Atlantic Provinces	45 (9.1)	17 (6.9)	15 (10.9)	
• Territories	22 (4.5)	6 (2.4)	0 (0)	
Marital status, n (%)				.119
• Married or common law	446 (88.8)	222 (88.1)	133 (94.3)	
Have ever given birth (self or partner), n (%)	408 (81.1)	215 (85.3)	112 (78.9)	.215
Mean (SD) duration of obstetric training, mo	4.62 (6.91)	4.41 (5.07)	2.54 (2.55)	.002†§
Taken ALARM or ALSO course, n (%)	437 (87.1)	137 (54.4)	28 (20.1)	<.001
Payment for clinical practice, n (%)				<.001
• Fee-for-service	385 (76.5)	187 (74.5)	85 (63.4)	
• Mixed methods	118 (23.5)	64 (25.5)	49 (36.6)	
Level of hospital where practising,‖ n (%)				
• Level 1	143 (28.7)	-	-	
• Level 2	213 (42.8)	-	-	
• Level 3 teaching	141 (28.3)	-	-	
• Other	1 (0.2)	-	-	

ALARM—Advances in Labour and Risk Management, ALSO—Advanced Life Support in Obstetrics, FPI—family physicians providing intrapartum and antenatal care, FPN—family physicians providing antenatal care who have never provided intrapartum care, FPP—family physicians providing antenatal care who previously provided intrapartum care.

*Denominators vary owing to missing data.

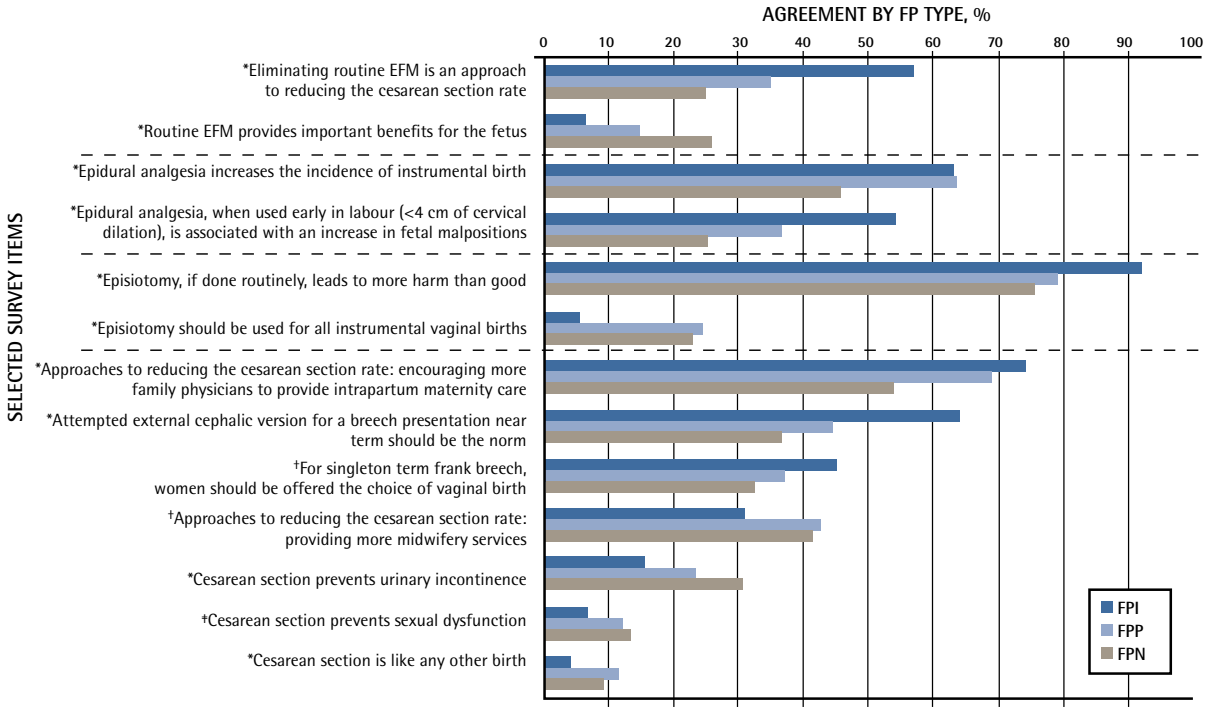
†Significant post-hoc Bonferroni, FPI and FPP.

†Significant post-hoc Bonferroni, FPI and FPN.

§Significant post-hoc Bonferroni, FPP and FPN.

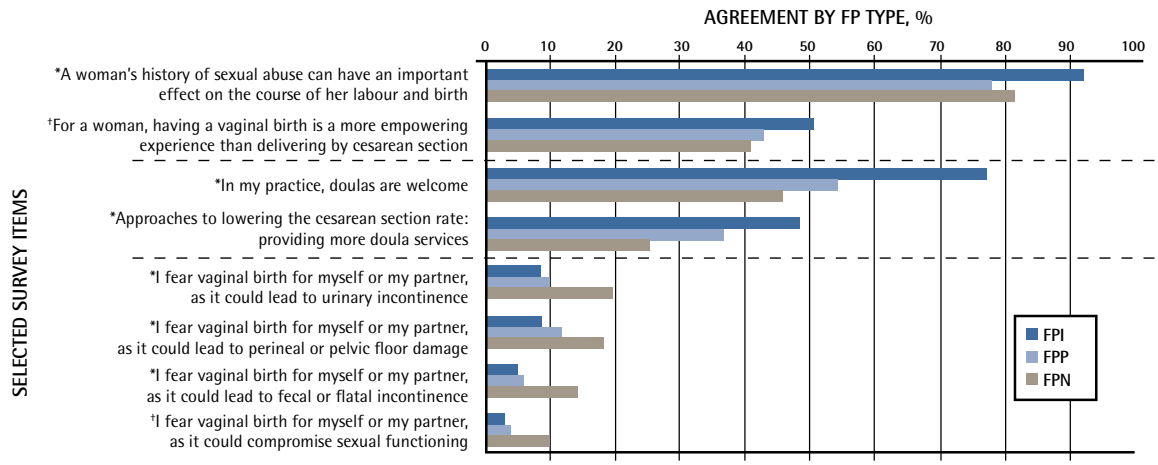
‖Cannot calculate level of hospital distribution or number of births for those not providing intrapartum care, owing to the wording of the question.

Figure 1. Proportions of agreement with selected survey items: *There was a lack of consensus among family practitioner groups regarding these interventions.*



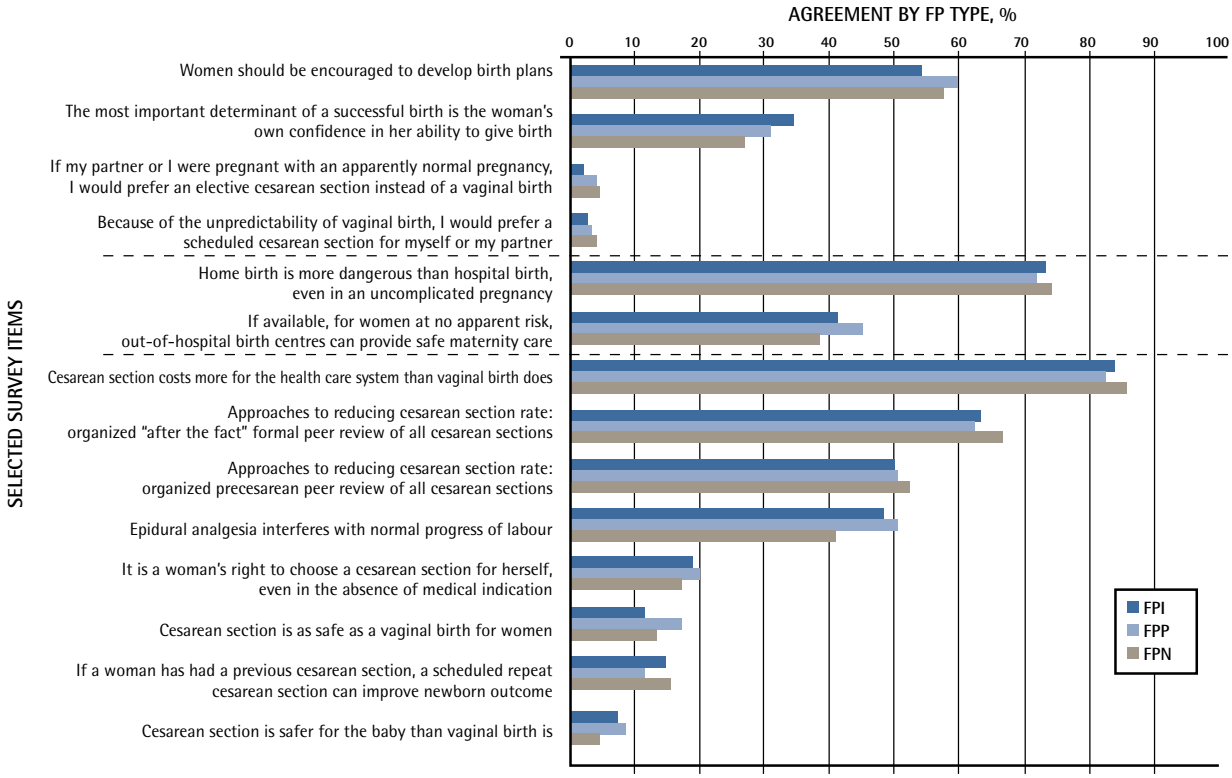
EFM–electronic fetal monitoring, FPI–family physicians providing intrapartum and antenatal care, FPN–family physicians providing antenatal care who have never provided intrapartum care, FPP–family physicians providing antenatal care who previously provided intrapartum care.
*Significant at or above $\alpha = .001$.
†Significant at or above $\alpha = .01$.
‡Significant at or above $\alpha = .05$.

Figure 2. Proportions of agreement with selected survey items: *There was a lack of consensus among family practitioner groups regarding these conceptual issues.*



FPI–family physicians providing intrapartum and antenatal care, FPN–family physicians providing antenatal care who have never provided intrapartum care, FPP–family physicians providing antenatal care who previously provided intrapartum care.
*Significant at or above $\alpha = .001$.
†Significant at or above $\alpha = .05$.

Figure 3. Selected areas of consensus among family physicians: *For all items* $\alpha > .05$.



FPI–family physicians providing intrapartum and antenatal care, FPN–family physicians providing antenatal care who have never provided intrapartum care, FPP–family physicians providing antenatal care who previously provided intrapartum care.

difficulties reaching FPs in Quebec. We have attained urban-rural and sex distributions approximately reflective of the distribution of care providers according to results of the 2007 National Physician Survey.[25] Family physicians in all 3 groups were more likely to be female, although younger women were less likely to be providing IPC. Approximately 90% of respondents completed the survey in English. The western provinces were overrepresented among FPIs, reflecting current practice realities in provinces where the consultant obstetric model is more prevalent than in other parts of Canada. The FPIs were more likely to have taken additional months of training as well as Advanced Life Support in Obstetrics courses or equivalent. Distribution of practice sites was roughly balanced between levels 1, 2, and 3. We considered level 1 hospitals a proxy for rural settings.

We found that the proportion of FPs who would select obstetricians as the maternity care provider for their own (or their partners') deliveries was significantly different between the FP groups: FPI (7.8%), FPP (26.3%), and FPN (45.3%); $P<.001$.

Table 2 provides mean scores and standard deviations for the 9, 5-point Likert scales. The mean attitudes of 3 FP groups fell generally within the same broad Likert categories (agree, neutral, disagree), but no statistically significant difference was found between groups for scales regarding maternal choice and a mother's role in her own birth, suggested approaches to reducing the cesarean section rate, and safety by mode or place of birth. However, statistically significant attitudinal differences were found between the 3 family practice groups for routine episiotomy, routine electronic fetal monitoring, and routine epidural analgesia, with FPNs showing significantly more agreement with this technology than FPPs, who in turn showed more agreement than FPIs ($P<.001$). The FPIs displayed significantly more agreement with the benefit of doula support and more disagreement with the pelvic floor benefits of cesarean section than those FPs not providing IPC ($P<.001$); and FPIs indicated significantly less fear of vaginal birth for themselves or their partners than FPPs or FPNs did ($P<.001$). The size of the FP group mean differences, as

Table 2. Analysis of variance: *Mean (SD) scores on the 9, 5-point Likert scale items assessing FPs' attitudes.*

		MEAN (SD) SCORE ON 5-POINT LIKERT SCALE			
SCALES: ATTITUDES TOWARD ...	CRONBACH α	FPI	FPP	FPN	*P* VALUE
Routine electronic fetal monitoring	0.795	1.98 (0.67)	2.46 (0.71)	2.78 (0.75)	<.001*†‡
Epidural analgesia	0.694	2.68 (0.73)	2.79 (0.67)	3.02 (0.61)	<.001†‡
Routine episiotomy	0.770	1.94 (0.59)	2.34 (0.71)	2.57 (0.64)	<.001*†‡
Doulas	0.828	3.59 (0.76)	3.34 (0.72)	3.17 (0.68)	<.001*†
Pelvic floor benefits of cesarean section	0.771	2.36 (0.70)	2.61 (0.76)	2.69 (0.81)	<.001*†
Approaches to reducing cesarean section rates	0.709	3.45 (0.46)	3.41 (0.47)	3.37 (0.47)	.150
Maternal choice and mother's role in her own child's birth	0.568	3.10 (0.68)	3.05 (0.64)	3.02 (0.63)	.358
Care providers' fears of vaginal birth for themselves or their partners	0.928	1.51 (0.66)	1.65 (0.77)	1.74 (0.85)	.001†
Safety by mode or place of birth	0.632	2.62 (0.54)	2.69 (0.57)	2.72 (0.58)	.068

FPI—family physicians providing intrapartum and antenatal care, FPN—family physicians providing antenatal care who have never provided intrapartum care, FPP—family physicians providing antenatal care who previously provided intrapartum care.
*Significant post-hoc Bonferroni, FPI and FPP.
†Significant post-hoc Bonferroni, FPI and FPN.
‡Significant post-hoc Bonferroni, FPP and FPN.

measured by Cohen f^2, ranged from 0.02 to 0.21 for the 6 out of 9 scales with significant group differences.

Figures 1 to **3** present selected questions and outcomes by proportion of agreement or disagreement. These figures demonstrate that FPIs clearly rejected routine electronic fetal monitoring, routine epidural analgesia, and routine episiotomy, compared with FPPs and FPNs. The FPIs were relatively more supportive of doulas. Two-thirds of the 3 groups supported regulated midwifery. When asked about approaches to reducing cesarean section rates, FPIs were more supportive of increasing family practice involvement, offering vaginal breech birth, and breech versions. The FPIs were more likely than other groups to reject cesarean section as a means of preventing urinary incontinence or sexual dysfunction. All groups were in disagreement with the notion that cesarean section is as safe for the mother or baby as vaginal birth is. Fear of vaginal childbirth based on pelvic floor or perineal concerns was minimal for the FPI group relative to the others, while all groups rejected elective cesarean section for themselves or their partners if it were not indicated. In terms of maternal choice and a mother's role in her own birth, FPIs were more likely to reject cesarean section as more empowering than vaginal birth and were more likely to appreciate the importance of a previous history of sexual abuse. The role of maternal confidence and maternal autonomous decision making about elective cesarean section was similar in the 3 groups. All 3 groups expressed ambivalence about birth plans, and there was equivalence among the 3 groups regarding vaginal birth following cesarean section. The 3 groups were similar in their negativity toward home birth, in contrast to relative positivity toward out-of-hospital birth centres.

DISCUSSION

We have examined attitudes toward important elements in contemporary maternity care from a sample of family physicians from across Canada. For most issues, FPs providing only APC were more in favour of technological approaches and more concerned about the assumed pelvic floor consequences of vaginal birth than those providing IPC were. This finding is in agreement with results of our NMCAS providers study, demonstrating that the attitudes of FPs providing only APC were more similar to those of obstetricians than to those of their fellow FPs,[1] leading us to speculate that FPNs or even FPPs might choose, in part, to practise this way because they have been influenced by obstetrician colleagues or teachers toward associating birth with considerable risk.

The strength of full-scope family practice maternity care in western Canada found in our study has been previously noted.[27,28] There are important differences in the care in settings where primary maternity care provided by obstetricians is the norm, such as in Ontario and Quebec. In these settings, those FPs who provide intrapartum maternity care often have very large maternity practices, especially so in Quebec.[25] A study from Ontario, where few FPs provide IPC, indicated that almost no practice arrangements or models of care would entice FPs to incorporate IPC into practice.[29] In all Canadian settings, FPs' self-assessed confidence and perceived competence, as well as balancing practice and personal life, are recurring issues.[30,31] In settings where intrapartum family practice is rare, family practice role models demonstrating confidence and competence and an integrated life are also rare.[32,33] In the absence of such models, it is easy to understand why FPs might come to feel that intrapartum maternity care is dangerous and best left to obstetricians.

Despite their withdrawal from IPC, or the decision to never incorporate it into practice, FPs practising only APC hold views that must not be neglected, as they are in a position to influence their patients toward more technological approaches to labour and birth, including greater support for cesarean section. Moreover, they decide when and to whom to refer their patients—whether to other FPs, obstetricians, or midwives. Data from the maternal portion of the NMCAS[34] indicate that 90% of nulliparous women surveyed would follow their providers' advice even if it did not fit their plans. Even though differences between the FPI group and the other FPs are small in absolute terms (although statistically significant), even slightly negative views could be powerful influencers on patients, which might also lead them toward attitudes that are more negative toward normal vaginal childbirth and more receptive of technological birth.

Support for doulas is more positive among FPIs than those not practising IPC, but their support is not strong. Our previous work[35] has identified conflict, especially over the scope of doula care, between doulas and conventional maternity care providers. This phenomenon, while rare, might contribute to negative views of doulas by some maternity care providers. As current research shows the benefit of doula care,[36,37] there needs to be more provider education about the role of doulas.

The rule of thumb for small, medium, and large effect size is based on a detailed examination of the typical differences found in psychological data. A small effect size for f^2 is 0.02; a medium effect size for f^2 is 0.15; and a large effect size for f^2 is 0.35.[26] Hence, according to this method, the differences that we report range from small to medium and would be considered substantively significant.

Limitations

The proportion of our sample who had never practised IPC is relatively small, compared with those who practise or have practised IPC. We have found statistically significant results separating the 3 study groups, but in absolute terms the differences on a 5-point Likert spectrum appear to be relatively small, although they are thematically consistent and Cohen's measurement of effect size indicates substantive differences. It is unknown if these *statistically* significant differences translate into *substantively* important differences in behaviour or advice given to patients.

The CFPC and commercial mailing list sources for our potential respondents contained only individuals with self-identified "interest in maternity care." The Quebec (AOPQ) group all practised IPC. Thus our results pertain only to those so self-identified and motivated, which accounts for the small number in the FPN category. It can be assumed, however, that most FPs *not* indicating such interest, whether providing IPC or only APC, would be expected to be *less* engaged, *less* knowledgeable, and *less* committed to the activity. Thus the differences shown in our data, if compared with a fully representative sample of all FPs providing the 2 broad types of maternity care, especially FPNs, would be expected to render our statistically significant results even more substantively significant.

We acknowledge the limitations of online surveys, but note that the distribution of respondents across the full range of known Canadian demographic groupings lends face validity to our results. For e-mail surveys of this type it is impossible to know who actually received the e-mail (denominator of response rate). A limited literature on such surveys has demonstrated (for 31 studies) a steady decline in reported response rates from 62% in 1989 to 24% in 2000, and that the only variable correlated with the rate was the year of the survey itself.[38] Commercial Web-based surveys similar to ours were associated with a mean response rate of 32.5% and a median of 26.4%.[39]

Conclusion

The FPIs in our study hold views that are consistently more positive about normal vaginal birth than those of FPPs and especially FPNs. Family doctors who practise only APC are in a position to influence their patients toward a view of birth that is more interventionist and more concerned about potentially negative effects of vaginal birth. These views might affect patients before and after referral to other intrapartum providers. Once established, these views could be difficult to change. While relevant educational courses for FPIs are available, it is unusual for those providing only APC to have continuing education programs directed specifically to their needs. Moreover, in undergraduate medical education and in postgraduate family practice programs, there is a tendency to permit those not planning to practise intrapartum maternity care to "escape" further training. Our study shows that this is a mistake. Family practitioners not offering IPC provide most of the APC in Canada, and their needs for continuing evidence-based education must not be neglected.

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Contributors

All authors contributed to the concept and design of the study; data gathering, analysis, and interpretation; and preparing the manuscript for submission.

Competing interests

None declared

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