Midwives' Belief in Normal Birth: The Canadian Survey of Maternity Care Providers' Attitudes Toward Labour and Birth

Confiance exprimée par les sages-femmes envers l'accouchement normal : Enquête canadienne sur les attitudes des fournisseurs de soins de maternité envers le travail et l'accouchement

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ABSTRACT

Background: Midwifery has been integrated into the health care systems of over half of Canadian provinces and territories. While there are differences in legislation and payment mechanisms, the model of midwifery is fairly similar across the country. This study examined the similarities and differences among midwives' attitudes toward labour and birth. In addition, we compared items which related to beliefs about normal birth between midwives and other care providers.

Methods: A national cross-sectional survey was conducted comparing maternity care providers' beliefs about childbirth and intra-professional variations in midwives' attitudes towards birth. There were 400 (54%) midwife respondents: 218 from Ontario, 75 from B.C, 53 from Quebec, 48 from the remaining regulated or pre-regulated provinces (six missed information for this field).

Results: All midwives were critical of the routine use of interventions such as episiotomy, epidural analgesia and electronic fetal monitoring (EFM). There was strong agreement about the safety of home birth, out of hospital birth centres and the importance of women's autonomy and decision-making in pregnancy and birth. However, some regional variations were identified. Quebec midwives were more opposed to epidural analgesia than BC and Ontario ($p<.001$), and were more likely to believe that cesarean birth is more costly than vaginal birth ($p=.005$). Ontario midwives were most likely to believe that cesarean birth protects against urinary incontinence ($p=.001$), and sexual dysfunction ($p=.002$). Qualitative comments of midwives indicated a strong desire to reduce unnecessary medical intervention and to lower cesarean section rates.

Conclusion: Canadian midwives share similar beliefs regarding place of birth, the routine use of episiotomy, EFM, and epidurals, but reported significant attitudinal differences for other issues. Regional differences may be related to midwives' primary practice settings, the historical development of midwifery in their region and the number of new midwives with less than 5 years of clinical experience. A set of core midwifery values was identified that demonstrate a strong belief in normal birth.

KEY WORDS

normal birth, midwifery, attitudes of health professionals, cesarean section, home birth, labour, intrapartum technology, out-of-hospital birth

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RÉSUMÉ

Contexte : La pratique de sage-femme a été intégrée aux systèmes de santé de plus de la moitié des provinces et des territoires canadiens. Malgré des différences en matière de législation et de mécanismes de paiement, le modèle de la pratique de sage-femme est plutôt semblable d'un bout à l'autre du pays. Cette étude s'est penchée sur les similarités et les différences en ce qui a trait aux attitudes des sages-femmes envers le travail et l'accouchement. De surcroît, nous nous sommes penchés sur des paramètres liés aux opinions au sujet de l'accouchement normal chez les sages-femmes et les avons comparés à ceux d'autres fournisseurs de soins de santé.

Méthodes : Une enquête transversale nationale a été menée, par Internet et sous forme papier, afin de comparer les opinions des fournisseurs de soins de maternité au sujet de l'accouchement. Nous avons mené une analyse des données associées à la pratique de sage-femme afin d'y déceler des variations. Aux fins de la comparaison, les sages-femmes ont été stratifiées en fonction de la région et de l'expérience; de plus, nous avons comparé les sages-femmes à d'autres fournisseurs de soins de maternité. Nous nous sommes assurés la participation de 400 sages-femmes (54 %) à l'étude : 218 de l'Ontario, 75 de la C.-B., 53 du Québec et 48 des autres provinces réglementées ou en voie de l'être.

Résultats : Toutes les sages-femmes ont critiqué l'utilisation régulière d'interventions telles que l'épisiotomie, l'analgésie péridurale et le monitorage fœtal électronique (MFÉ). Nous avons constaté un fort consensus quant aux centres de naissance externes, à l'innocuité de l'accouchement à domicile et à l'importance de l'autonomie des femmes en matière de prise de décision pendant la grossesse et l'accouchement. Cependant, certaines variations régionales ont été constatées. Les sages-femmes du Québec étaient plus opposées à l'analgésie péridurale que leurs consœurs de C.-B. et d'Ontario ($p < 0{,}001$), et étaient plus susceptibles de croire que la césarienne est plus coûteuse que l'accouchement vaginal ($p = 0{,}005$). Les sages-femmes d'Ontario étaient celles qui étaient les plus susceptibles de croire que la césarienne confère une protection contre l'incontinence urinaire ($p = 0{,}001$) et le dysfonctionnement sexuel ($p = 0{,}002$). Les commentaires qualitatifs des sages-femmes ont indiqué un fort souhait de procéder à la réduction du nombre d'interventions médicales inutiles et à la baisse des taux de césarienne.

Conclusion : Les sages-femmes canadiennes partagent des convictions semblables à l'égard de l'utilisation régulière de l'épisiotomie, du MFÉ et de l'analgésie péridurale, ainsi qu'à l'égard du lieu de l'accouchement; toutefois, elles ont démontré des différences d'attitude significatives à d'autres égards. Les différences régionales pourraient être liées aux principaux milieux de pratique des sages-femmes, au développement historique de la pratique de sage-femme dans leur région et au nombre de nouvelles sages-femmes comptant moins de cinq ans d'expérience clinique. Un ensemble de valeurs fondamentales de la pratique de sage-femme démontrant une forte confiance envers l'accouchement normal a été identifié.

MOTS CLÉS :

Accouchement normal, pratique de sage-femme, attitudes des professionnels de la santé, césarienne, accouchement à domicile, travail, technologie intrapartum, accouchement à l'extérieur de l'hôpital

Cet article a été évalué par des pairs.

INTRODUCTION

Midwifery has now been funded and integrated into the health care systems of more than half of Canada's provinces and territories. In 2007, when the survey was conducted, there were over 700 midwives in Canada.[1] While the model of legislated midwifery across Canada has been relatively consistent, there are some regional differences including the time in which legislation occurred, the model of payment, salary vs. fee-for-service or course of care, inter-professional working arrangements, and access to hospitals and birth centres. In addition, a large proportion of Canadian midwives currently have less than five years experience.[1]

Over the past few decades childbirth has become saturated with technology. For most maternity care providers industrialized, technological birth has become the norm.[2] Large urban tertiary care settings are replacing the smaller community hospitals. Cesarean birth rates are skyrocketing and other technologies such as epidural and electronic fetal

monitoring (EFM) have inundated childbirth in Canada.[2,3] While intrapartum technology can be useful in complicated labours, over-reliance on these technologies exacerbates the belief that childbirth is a medical emergency which cannot proceed without intervention. As midwives gain greater access to hospitals we wanted to explore their beliefs about normal birth. In 2007, we conducted a national survey of all maternity care providers which highlighted the many similarities, and some distinct differences between professions, in attitudes and beliefs toward childbirth.[4] In order to examine midwifery attitudes more closely, a secondary analysis of the 2007 survey data was done. We aimed to determine if there were regional differences in midwives' attitudes toward labour and birth throughout Canada (especially where midwifery access to hospitals is not consistent), or by years of clinical experience. We also compared midwives' beliefs to those of other health care providers, extending the analyses of previous publications.[4]

METHODS

A cross-sectional survey of maternity care providers in Canada was undertaken and included both urban and rural practice settings. The initial study included midwives, obstetricians, family physicians, nurses and doulas. All Canadian midwives (N=747) were invited to participate during the study period through the Canadian Association of Midwives (CAM). The questionnaire included 25 demographic questions, 94 content questions: 79 Likert five-point attitudinal questions [1 = strongly disagree to 5 =strongly agree], seven multiple choice and eight open-ended questions. Details of the sampling methods and psychometric properties of the questionnaire are published elsewhere.[5] All survey data were exported and analyzed using SPSS version 16 (SPSS Inc.,Chicago IL). 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.

Two separate statistical methodologies were utilized:

i) Intra-professional comparison: To examine for regional differences in midwifery beliefs, we split provinces into four different groups: BC, Ontario, Quebec and

Table 1: *Personal and Practice Demographics*

	PROVINCE				EXPERIENCE		
	BC	ON	QC	Other	< 5 years	> 5 years	Total
	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
Stratification n (%)	**75 (19.0)**	**218 (55.3)**	**53 (13.5)**	**48 (12.2)**	**165 (41.9)**	**229 (58.1)**	**394 (100.0)**
Age [*M* (*SD*)]:	43.4 (11.4)	40.7 (9.5)	45.9 (11.9)	46.4 (9.3)	34.9 (7.2)	48.2 (8.7)	42.6 (10.4)
Language:							
English	75 (100.0)	210 (96.3)	9 (17.0)	48 (100.0)	138 (83.6)	204 (89.1)	342 (86.8)
French	-	8 (3.7)	44 (83.0)	-	27 (16.4)	25 (10.9)	52 (13.2)
Married/Common law:	52 (70.3)	171 (78.8)	36 (67.9)	41 (85.4)	126 (76.8)	174 (76.3)	300 (76.5)
Ever given birth (self or partner):	49 (65.3)	149 (68.7)	45 (86.5)	44 (91.7)	92 (56.1)	195 (85.5)	287 (73.2)
Years of clinical experience [*M* (*SD*)]:	10.6 (10.5)	8.6 (7.6)	14.1 (10.7)	10.3 (7.0)	2.5 (1.6)	15.3 (8.0)	9.9 (8.8)
Births Attended during the last 12 months [*M* (*SD*)]:	38.0 (13.6)	55.1 (21.3)	37.2 (19.5)	32.4 (17.4)	47.3 (22.7)	46.6 (20.7)	46.9 (21.5)
At Hospitals:	28.6 (11.5)	40.6 (16.8)	3.6 (4.8)	17.7 (13.4)	32.9 (18.9)	29.9 (19.7)	31.2 (19.4)
At Birth Centers:	0.5 (2.4)	0.3 (1.8)	26.5 (15.8)	3.1 (3.8)	5.3 (12.7)	8.2 (14.0)	6.8 (13.4)
At Home:	9.6 (5.1)	15.2 (10.0)	7.8 (9.2)	15.3 (11.8)	12.2 (9.4)	14.0 (10.1)	13.2 (9.8)
Level of hospital where practicing:							
Level I	15 (21.1)	43 (20.3)	3 (7.0)	4 (9.3)	29 (18.4)	36 (17.1)	65 (17.6)
Level II	24 (33.8)	128 (60.4)	12 (27.9)	7 (16.3)	82 (51.9)	89 (42.2)	171 (46.3)
Level III teaching	28 (39.4)	33 (15.6)	9 (20.9)	27 (62.8)	36 (22.8)	61 (28.9)	97 (26.3)
Dont/Other	4 (5.6)	8 (3.8)	19 (44.2)	5 (11.6)	11 (7.0)	25 (11.8)	36 (9.8)

Other, which included the rest of the country. Due to very small numbers of midwives in Saskatchewan, Manitoba, Alberta, NWT and other regions of Canada in which midwifery has yet to be regulated, these regions were grouped together for analysis. We also compared midwives with five years experience or more to those with less than five years experience. Differences between group means were analyzed using parametric tests due to their higher power. We conducted analysis of variance (ANOVA) with *post-hoc* Bonferroni tests to compare midwives' attitudes from different regions and with different levels of clinical experience. Moreover, t-tests were used to compare attitudes of midwives with less than or more than five years of clinical experience.

ii) Inter-professional comparison: In addition to regional and experience comparisons, we compared the responses between maternity care providers. To highlight the frequencies of response categories among provider groups, selected five-point Likert items were reduced to three-point (agree, neutral, and disagree), and then analyzed using chi-square tests.

RESULTS

We obtained completed questionnaires from 400 of the 747 Canadian midwives (an adequate response rate of 54%). This included 75 from British Columbia, 218 from Ontario, 53 from Quebec, 48 from the rest of Canada. For the within-midwifery stratification, six cases were excluded due to missing province or years of experience values, leaving a sample size of 394. Responses were analyzed to determine factors which explain variations in attitudes within the midwifery profession, and in relation to other maternity care providers. In addition to 400 midwives, surveys were obtained from 549 obstetricians, 897 family physicians, 545 nurses, and 192 doulas. A complete overview of the demographic characteristics for all provider groups has been published in the original paper.[5]

Demographics

Table 1 summarizes the demographic data of the midwives who completed the survey. By region there were no significant demographic differences in mean age, marital status or gender. Practice and birth experience demographics of the midwife sample are also summarized. The mean number of years of experience was greater than five years in all regions; the highest was Quebec midwives at 14.1 years of clinical experience. Midwives attended an average of 46.9 births per year, with an average of 13.2 at home. All regions conducted births at home, with the highest mean in the Other Region group. However, these data included midwives who have part-time caseloads, and those who were not actively practicing. Ontario midwives reported attending the highest number of births per year at 55 compared to 38 in BC, 37 in Quebec and 32 in the Other Regions.

Table 2: *Variation Due to Years of Experience Among Midwives*

	EXPERIENCE		
	5 years	**> 5 years**	
Survey Item	*M* (*SD*)	*M* (*SD*)	*p*-value
For a woman, having a vaginal birth is a more empowering experience than delivering by cesarean section.	3.6 (1.0)	3.9 (1.0)	.017
Women who deliver their baby by cesarean section miss an important life experience.	3.0 (1.0)	3.3 (1.0)	.016
Women should be encouraged to develop a birth plan.	3.5 (0.8)	3.8 (0.8)	.001
Epidural: Should be administered whenever a patient requests it.	3.2 (1.0)	2.9 (0.9)	.006
Cesarean Section: Prevents urinary incontinence.	2.0 (0.8)	1.8 (0.7)	.031
Cesarean Section: Prevents sexual dysfunction.	1.9 (0.7)	1.8 (0.7)	.020
Organized pre-cesarean section peer review of all elective cesarean sections to reduce the C/S rate.	3.8 (0.8)	4.1 (0.7)	.001
Organized after the fact formal peer review of all cesarean sections to reduce the C/S rate	3.8 (0.8)	4.1 (0.8)	.002
Episiotomy: If done routinely, can prevent pelvic floor relaxation.	1.5 (0.9)	1.3 (0.7)	.008
Episiotomy: If done routinely, can prevent 3rd/4th degree tears	1.3 (0.6)	1.2 (0.4)	.033

**A higher mean value indicates stronger agreement with the questionnaire item*

Quebec midwives attended the highest number of births in birth centres, where until recently this was the only site permitted by their model. Forty-four percent of Quebec midwives indicated that they did not attend births in hospital.

Midwifery Beliefs by Experience

Table 2 illustrates that experienced midwives felt more strongly that vaginal birth was "more empowering" for a woman than a cesarean birth. They were also less likely to agree that cesarean birth will prevent urinary incontinence or sexual dysfunction. Midwives with less than five years' experience believed more strongly that women should receive an epidural when she requests it.

Midwifery Beliefs by Region of Canada

We found that Quebec midwives were more opposed to epidural analgesia than those in BC and Ontario; they were more likely to believe that cesarean birth is more costly than vaginal birth and less likely to believe that active management of labour improves birth outcomes. Ontario midwives were the most likely to believe that cesarean birth protects against urinary incontinence, and sexual dysfunction, as seen in Table 5.

In addition to the differences found above, we discovered that Canadian midwives answered many items very similarly, regardless of region or years of experience. This statistical cohesion indicates a strongly held set of attitudes and beliefs among midwives. We refer to these items as the Core Values of Canadian midwives (Figure 1). Midwives strongly believe that cesarean birth rates should be reduced, that technology is overused and that birth is a normal event. Additionally, they indicate a unanimous belief in the safety of out-of-hospital birth.

Midwives compared to other maternity care providers

Tables 3 and 4 present midwives' beliefs about normal birth, technology and interventions as compared to other maternity care providers. While

Table 3: *Attitudes Toward Normal birth and Place of Birth Between All Provider Types*

	PROVIDER TYPE				
	MW	**OB**	**RN**	**FP**	
	n (%)	n (%)	n (%)	n (%)	***p*-value**
Childbirth can only be considered normal in retrospect					
Disagree	361 (90.7)	169 (30.9)	353 (66.1)	490 (54.7)	<.001
Neutral	14 (3.5)	92 (16.8)	72 (13.5)	162 (18.1)	
Agree	23 (5.8)	286 (52.3)	109 (20.4)	244 (27.2)	
Childbirth usually requires medical intervention					
Disagree	385 (96.5)	390 (71.6)	435 (80.6)	674 (75.8)	<.001
Neutral	10 (2.5)	74 (13.6)	64 (11.9)	142 (16.0)	
Agree	4 (1.0)	81 (14.9)	41 (7.6)	73 (8.2)	
My preferred initial method of providing pain relief in an uncomplicated labour is:					
Natural	397 (99.7)	428 (79.4)	527 (96.9)	785 (91.9)	<.001
Epidural	1 (0.3)	86 (16.0)	10 (1.8)	45 (5.3)	
Narcotic	-	25 (4.6)	7 (1.3)	24 (2.8)	
Homebirth is more dangerous than hospital birth, even in an uncomplicated pregnancy					
Disagree	391 (97.8)	32 (5.8)	176 (32.4)	117 (13.1)	<.001
Neutral	6 (1.5)	29 (5.3)	75 (13.8)	122 (13.6)	
Agree	3 (0.8)	487 (88.9)	292 (53.8)	656 (73.3)	
If available, for women at no apparent risk, I believe out-of-hospital birth centres can provide safe maternity care.					
Disagree	4 (1.0)	308 (56.2)	96 (17.7)	287 (32.1)	<.001
Neutral	8 (2.0)	80 (14.6)	91 (16.8)	223 (24.9)	
Agree	388 (97.0)	160 (29.2)	356 (65.6)	384 (43.0)	

FIGURE 1: *List of Core Values of Canadian Midwives*

Attitudes that indicate a belief in normal birth

- Increased use of interventions (such as induction of labour, EFM etc) are causing an increase in Cesarean section rates.
- No fear of vaginal birth (as explored in several items including fear of urinary or fecal incontinence, pelvic floor damage or sexual dysfunction).
- Routine EFM leads to higher cesarean section rates and has no benefit for the fetus.
- Cesarean birth is not as safe as vaginal birth for women or their babies.
- Epidural Analgesia interferes with normal labour progress, increases the incidence of instrumental birth and when used in early labour, is associated with increased fetal malpositions.
- Routine episiotomy leads to more harm than good.

Place of Birth

- Home birth is NOT more dangerous than hospital birth.
- Out of hospital birth centres can provide safe maternity care for women with no apparent risks

Belief in Women

- The most important determinant of a successful birth is the woman's own confidence in her ability to give birth.
- A woman's history of sexual abuse can have an important impact on her labour and birth.

Approaches to reduce Cesarean section rates

- Decrease the number of inductions for non-compelling reasons.
- Change medical and nursing education to promote positive attitudes to vaginal birth.
- Conduct pre and post cesarean peer case reviews.
- Increase nursing staff to provide one-to-one care.
- Provide more doulas

over 50% of obstetricians felt that childbirth was only normal in retrospect, 91% of midwives disagreed with this statement. In addition, only 1% of midwives believed that childbirth requires medical intervention. While other care providers also disagreed with this statement, the belief among midwives was almost unanimous. Almost all midwives indicated a belief in the safety of homebirth. Less than 1% reported that homebirth is dangerous. By comparison, almost 90% of obstetricians believed homebirth is dangerous.

All of the care providers that completed the survey indicated that the cesarean birth rate in Canada is too high but midwives expressed the belief most strongly. Almost 100 percent of midwives (compared to only 65% of obstetricians) believed the cesarean rate to be too high. Midwives also unanimously agreed that increasing interventions such as induction of labour and EFM cause an increase in cesarean rates in comparison to 72 to 85% of the other health professionals. Almost 43% of obstetricians compared to only 19% of midwives believed that women should have the right to choose cesarean delivery. All care providers indicated that a cesarean section is not just like any other birth but midwives felt it the most strongly. On average, care providers disagreed that continuous EFM is beneficial. Midwives were in strong agreement that they did not believe routine EFM to be beneficial to the fetus. Only 3% of midwives agreed with routine offering of epidural analgesia in labour compared to almost 60% of

Table 4: *Attitudes Toward Cesarean Section and Technology Between All Provider Types*

	PROVIDER TYPE				
	MW	OB	RN	FP	
Survey Item	n (%)	n (%)	n (%)	n (%)	*p*-value
Overall, I think the current C/S rate in Canada is					
About right	1 (0.3)	183 (33.8)	79 (14.7)	200 (23.1)	<.001
Low	-	3 (0.6)	6 (1.1)	3 (0.3)	
High	398 (99.7)	355 (65.6)	453 (84.2)	661 (76.5)	
Early hospital admission prior to active labour increases C/S rates					
Disagree	20 (5.0)	171 (31.4)	100 (18.4)	211 (23.8)	<.001
Neutral	44 (11.1)	83 (15.2)	71 (13.1)	241 (27.2)	
Agree	333 (83.9)	291 (53.4)	373 (68.6)	433 (48.9)	
Increasing interventions by professionals (e.g. induction, continuous electronic fetal monitoring, etc) cause an increase in the C/S rates.					
Disagree	5 (1.3)	86 (15.8)	39 (7.2)	92 (10.4)	<.001
Neutral	7 (1.8)	64 (11.7)	41 (7.6)	134 (15.2)	
Agree	384 (97.0)	395 (72.5)	463 (85.3)	658 (74.4)	
It is a woman's right to choose a C/S for herself, even in the absence of medical indication.					
Disagree	234 (58.6)	233 (42.5)	325 (60.4)	542 (60.8)	<.001
Neutral	91 (22.8)	83 (15.1)	80 (14.9)	183 (20.5)	
Agree	74 (18.5)	232 (42.3)	133 (24.7)	167 (18.7)	
C/S is just like any other birth.					
Disagree	376 (94.5)	387 (71.1)	430 (79.9)	684 (76.6)	<.001
Neutral	16 (4.0)	83 (15.3)	63 (11.7)	146 (16.3)	
Agree	6 (1.5)	74 (13.6)	45 (8.4)	63 (7.1)	
Epidural Analgesia: Should be routinely offered to all women in labour.					
Disagree	361 (90.3)	156 (28.5)	309 (56.9)	336 (37.5)	<.001
Neutral	29 (7.3)	70 (12.8)	73 (13.4)	146 (16.3)	
Agree	10 (2.5)	322 (58.8)	161 (29.7)	415 (46.3)	
Epidural Analgesia: Interferes with the normal progress of labour.					
Disagree	12 (3.0)	299 (55.1)	152 (27.9)	244 (27.4)	<.001
Neutral	50 (12.6)	91 (16.8)	105 (19.3)	221 (24.8)	
Agree	335 (84.4)	153 (28.2)	287 (52.8)	425 (47.8)	
Routine use of continuous EFM: Provides important benefits for the fetus.					
Disagree	385 (96.3)	389 (71.2)	387 (71.5)	641 (71.9)	<.001
Neutral	13 (3.3)	69 (12.6)	58 (10.7)	146 (16.4)	
Agree	2 (0.5)	88 (16.1)	96 (17.7)	105 (11.8)	
Episiotomy: If done routinely, leads to more harm than good.					
Disagree	17 (4.3)	54 (9.9)	49 (9.0)	42 (4.8)	<.001
Neutral	5 (1.3)	56 (10.3)	77 (14.2)	82 (9.3)	
Agree	376 (94.5)	436 (79.9)	416 (76.8)	760 (86.0)	

Table 5: *Differences in Midwifery Beliefs Across Canada*

	PROVINCE				
	BC	ON	QC	Other	
Survey Item	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*p*-value
Epidural Analgesia: Should be routinely offered to all women in labour.	1.6 (0.8)	1.7 (0.7)	1.2 (0.4)	1.4 (0.7)	<.001[a]
Epidural Analgesia: Should be administered whenever a patient requests it.	3.1 (0.9)	3.2 (1.0)	2.5 (1.0)	2.8 (0.8)	<.001[a]
Active management of labour improves birth outcomes.	2.3 (0.9)	2.2 (0.9)	1.6 (0.6)	1.8 (0.7)	<.001[a]
C/S prevents urinary incontinence.	1.8 (0.7)	2.0 (0.7)	1.7 (0.8)	1.8 (0.7)	.001[c]
C/S prevents sexual dysfunction.	1.7 (0.7)	2.0 (0.7)	1.6 (0.6)	1.7 (0.6)	<.001[c]
C/S costs more for the health care system than vaginal birth.	4.4 (1.0)	4.4 (1.0)	4.7 (0.7)	4.7 (0.6)	.015
Changing population characteristics (such as increases in mothers age and increases in obesity) among pregnant women is a reason for the rising C/S rates.	3.7 (0.8)	3.6 (0.8)	3.3 (1.0)	3.4 (1.1)	.039
Changing medical and nursing education to encourage more positive attitudes toward vaginal birth is an approach to reducing C/S rates.	4.6 (0.6)	4.4 (0.7)	4.5 (1.0)	4.7 (0.5)	.050[c]
Increasing the use of oxytocin to augment labour dystocia is an approach to reducing C/S rates.	3.4 (1.0)	3.0 (0.9)	1.8 (1.0)	2.9 (1.0)	<.001[a,d]
In my practice, doulas are welcome.	4.5 (0.8)	4.4 (0.6)	4.1 (0.8)	4.1 (0.8)	<.001[a,e]

*A higher mean value indicates stronger agreement with the questionnaire item
[a] = Significant *post-hoc* Bonferroni, BC x ON[d] = Significant *post-hoc* Bonferroni, ON x QC
[b] = Significant *post-hoc* Bonferroni, BC x QC[e] = Significant *post-hoc* Bonferroni, ON x Other
[c] = Significant *post-hoc* Bonferroni, BC x Other[f] = Significant *post-hoc* Bonferroni, QC x Other

obstetricians, and 84% of midwives felt that epidurals interfere with normal labour compared with only 28% of obstetricians.

DISCUSSION

Midwives' beliefs about birth from a large Canadian sample were explored and compared to those of other health care providers. The questionnaire was found to be a reliable and valid measure of maternity care providers' attitudes and beliefs about labour and birth.[4] In general, midwives held very similar beliefs across the country. Midwives viewed childbirth as a normal process and had negative views toward intrapartum technology. However, some regional differences were discovered as well as differences between more experienced midwives and those with less than five years experience.

Some of the regional differences can be explained by variation in education and practice patterns. Midwives have had different structures for hospital integration in each region of Canada. In Quebec, midwives had worked primarily in birth centres and, although access to hospitals is becoming more available, they are not integrated into the health care team in the same way as midwives in other provinces. Quebec midwives were found to be more opposed to epidural analgesia than midwives in BC or Ontario where midwives work in hospitals and home and where they generally manage epidurals independently. Despite regional variations in the scope of practice, clinical competencies remain fairly constant across the country.

Midwives' scores tended to diverge where the survey item reflected a conflict between one or more philosophical principles which inform their beliefs. Such conflicting principles include: the belief in normal birth, supporting women's informed choices and evidence-based practice. In the qualitative comments midwives responded that they were sometimes unable to score in a way that accurately reflected their belief. For example, for one item the questionnaire statement was, "*women have the right to choose cesarean section*." This item was difficult for many midwives who strongly support a women's right to informed choice but also want to avoid unnecessary cesarean births.

Comfort with out-of-hospital birth was found to be a core value of Canadian midwives. Over 99% of Canadian midwives did not believe that homebirth was more dangerous than hospital birth. This study was conducted prior to the publication of two studies that showed the safety of home birth in Canada.[5-6] In comparison, Vedam et al. found that

only 5% of American Nurse-Midwives were comfortable with homebirth. Also, Vedam reported that attendance at homebirths while in training was a key factor in midwives' later confidence with homebirth.[7-8] The attitudinal differences between Canadian and American midwives are likely due to differences in the level of exposure to homebirth during training and practice. In many provinces midwifery legislation mandates competency in both home and hospital, and there is a medical community more tolerant of midwife-attended homebirths.

Another core value of Canadian midwives is a belief that the cesarean birth rate is too high. In the qualitative data midwives wrote extensively and passionately about ways to reduce the cesarean section rate. These comments revealed a strong commitment to reduce interventions for all women not just those in the care of midwives. Their comments included ideas on protocols to reduce cesarean births, as well as increasing the number of midwives and restricting obstetricians from caring for low risk pregnancies. One midwife wrote regarding hospital protocols, *"…make vaginal birth the easy choice in hospitals…"* The vast majority of comments revolved around education, both of the public and health professionals to create a change in beliefs about childbirth. One midwife commented on the need for public education because,

> *It [cesarean section] has become a socially acceptable birth option without any concern for the risks of major abdominal surgery and the implications for future births. Women can plan the baby's birth day so it fits into their social calendar and their obstetrician's work schedule.*

These comments reveal a collective concern and passionate urgency among midwives to reduce cesarean section rates and preserve normal birth.

Normal birth is a term widely used, infrequently defined and lacking consensus. Furthermore, it is a concept fraught with difficulty. The Society of Obstetricians and Gynecologists of Canada (SOGC), in their joint statement with the Canadian Association of Midwives (CAM), provide a definition which includes interventions such as augmentation and epidural anesthesia while the Royal College of Midwives in the UK rejects these interventions as a part of normal birth.[9, 10] In addition, the term *normal* tends to denote *ordinary* or *routine*. We do not wish to imply that normal birth is mundane. There are also wide discrepancies in physiological variations of normal. Despite these controversies, for the purpose of this paper we refer to normal birth as a birth in which there is a limited amount of routine intervention and technology.

It is not surprising that midwives share a common set of beliefs. Cherniak & Fisher describe how professional cultures develop and sustain shared beliefs and practices.[11] A strong belief in normal birth is beneficial in order to reduce unnecessary interventions. But midwives can also learn from their medical colleagues through collaboration. Certain attitudes and beliefs, such as those based on high quality evidence, will promote clinical excellence. Clinicians hold unconscious assumptions about women and childbirth which they develop and internalize during their training. Nelson suggests that these assumptions are reinforced in practice and are presumed to be normative.[12] Collaborative work arrangements are the fundamental vehicle to develop shared beliefs and attitudes.[13] While individual attitudes and beliefs are developed in training and reinforced in practice, they are also influenced and expanded by the information received from other perspectives.[13] Collaborative maternity care and inter-professional education that includes midwives may help to develop more positive attitudes toward normal childbirth. Moller states that learners are more able to enlarge their own beliefs when supported by a community of other learners.[13] The relative physical separation between physician and midwife training sites and lack of personal contact between the disciplines may contribute to some inter-professional differences found in our study. It is interesting to note that 30 percent of physicians who completed the survey do not support midwifery services and are therefore less likely to be interested in collaborative maternity care models.

The integration of childbirth technologies has been insidious and, for the most part, unchallenged. A conscious effort to strengthen the beliefs of health care providers about normal birth needs to be

undertaken. All technological interference in an uncomplicated labour should be carefully considered prior to implementation. It has been found that the beliefs of care providers have a strong influence on the choices of parturient women.[7] Providers influence women's choice through the subtle communication of their own beliefs. If midwives and other health care providers can strengthen their own belief in normal birth, hopefully they will pass this on to the women for whom they provide care.

Limitations

Although our sample had an excellent response rate and covers all regions of Canada it cannot be considered fully representative of all Canadian midwives. Furthermore, birth attendance numbers are not corrected for part time midwives or those not in active practice. While this survey sheds some preliminary light on the subject of midwifery beliefs a more in-depth exploration of attitudes to homebirth would be of value. At the time of the survey there were 700 midwives in Canada. We acknowledge that attitudes and beliefs change over time as new midwives enter the profession.

CONCLUSIONS

An understanding of midwives' attitudes and beliefs is important to understand practice patterns. It can also inform midwifery educators, professional associations and regulators. The survey responses indicate agreement among Canadian midwives regarding the belief in birth as a normal healthy event, homebirth and out-of-hospital birth centre safety and the importance of women's autonomy in making decisions. They were critical of the routine use of interventions such as episiotomy, epidural analgesia and EFM. As midwives increase their numbers within the health care system they may positively influence both women and other care provider's comfort with normal labour and birth, lower use of technology and out-of-hospital births. While some differences were discovered, there were also a large number of items for which midwives' scores were virtually unanimous. These core values are unique to midwives and were not shared by other maternity care providers. Few midwives (6%) agreed with the statement that *"childbirth is only normal in retrospect"* compared to 52% of obstetricians, 27% of family physicians and 20% of nurses. One obstetrician stated:

> *I don't feel the need to reduce my c/s rate. As a consultant obstetrician, all my patients are delivered by forceps or c/s. I usually have good outcomes and I don't see a problem.*

However, there were also many obstetricians who agreed with the midwives. Another obstetrician referred to the rising cesarean section rate and overuse of interventions as, *"a conspiracy of convenience"*. A midwife commented:

> *The current social construct states that women are incapable of giving birth without medical intervention, and women's own belief is that they just aren't strong enough or capable of giving birth naturally."*

We found that midwives were much more comfortable with out-of-hospital birth than other health care providers. Ninety percent of obstetricians strongly oppose home birth and out-of-hospital birth centres. In contrast, only 1% of midwives believed homebirth to be dangerous. Approximately half of the obstetricians felt that epidural analgesia should be routinely offered to all women in labour while over 90 percent of midwives indicated that it should not be routinely offered. Our study provides some insight into the beliefs of midwives about normal birth, intrapartum technologies and place of birth. The challenge will be to create learning and practice environments, both physical and attitudinal, where trainees and practitioners of all maternity care disciplines can learn together while experiencing collaborative models of care.

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