Pre-University Students' Attitudes and Beliefs about Childbirth: Implications for Reproductive Health and Maternity Care

Attitudes et opinions des étudiants préuniversitaires en ce qui concerne l'accouchement : Implications en matière de santé génésique et de soins de maternité

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ABSTRACT

Objectives: To determine pre-university students' attitudes and beliefs about childbirth and identify key sources of information and knowledge.

Methods: A survey of 359 Quebec pre-university students (215 female, 144 male) was undertaken to identify sources of beliefs about birth and opinions about types of maternity care providers and place/method of delivery.

Results: Prime sources for birth beliefs were family (50.7% female, 39.9% male) and media (21.9% female, 33.6% male). The dominant preferred birth model was hospital vaginal delivery attended by an obstetrician. The students' birth preferences reflected strong support for professional supervision/intervention and skepticism about the safety of home birth and out-of-hospital birth centres. Although 9.3% of female students and no males would choose elective cesarean section (CS) for themselves or partner, 71.2% of female students and 42.4% of male students agreed that CS is "just another way of having a baby." Most female students believed "it is a woman's right to choose CS for herself" and had a higher preference/acceptance of CS, compared with male students. Students characterized birth as "painful" and "miraculous" and agreed on its relative safety. Female students were more fearful and more stressed about the prospect of birth, compared with male students. Over 75% of female students were aware of the benefits of breastfeeding and planned to breastfeed.

Conclusions: Most students supported in-hospital maternity care and perceived CS as normal but did not express a preference for CS for themselves or their partners. Students were unaware of the risks/benefits of CS, epidurals, and out-of-hospital birth. These findings highlight the need for health care professionals to engage young adults and to provide them with evidence-based information about maternity care options.

KEYWORDS

birth, adolescents, students, attitudes, knowledge, health education

RÉSUMÉ

Objectif : Nous avons cherché à déterminer les attitudes et les opinions des étudiants préuniversitaires en ce qui concerne l'accouchement, ainsi qu'à identifier les sources clés de renseignements et de connaissances.

Méthodes : Nous avons mené une étude auprès de 359 étudiants préuniversitaires québécois (215 femmes, 144

hommes) en vue d'identifier les sources de leurs opinions quant à l'accouchement, aux types de fournisseurs de soins de maternité et au lieu/mode d'accouchement.
Résultats : Les principales sources des opinions quant à l'accouchement étaient les suivantes : la famille (50,7 % des femmes, 39,9 % des hommes) et les médias (21,9 %, 33,6 %). Le mode d'accouchement privilégié dominant était l'accouchement vaginal à l'hôpital sous la supervision d'un obstétricien. Les préférences des étudiants quant à l'accouchement reflétaient un fort soutien de la supervision/intervention professionnelle, ainsi qu'un certain scepticisme quant à la sûreté de l'accouchement à domicile et des centres de naissance non hospitaliers. Bien que 9,3 % des étudiantes (et aucun des étudiants) aient indiqué qu'elles choisiraient une césarienne de convenance pour elles-mêmes/leur partenaire, 71,2 % des étudiantes et 42,4 % des étudiants s'entendaient pour affirmer que la césarienne « ne constituait qu'une autre façon d'accoucher ». La plupart des étudiantes estimaient que « la décision quant à l'accouchement par césarienne revenait à la femme » et présentaient une préférence/acceptation accrue envers la césarienne, par comparaison avec les étudiants. Les étudiants (femmes et hommes) ont qualifié l'accouchement comme étant « douloureux » et « miraculeux », et s'entendaient quant à sa sûreté relative. Les étudiantes étaient plus craintives et plus stressées au moment d'envisager l'accouchement, par comparaison avec les étudiants. Plus de 75 % des étudiantes étaient au courant des avantages de l'allaitement et planifiaient allaiter.
Conclusions : La plupart des étudiants (femmes et hommes) soutenaient les soins de maternité en milieu hospitalier et percevaient la césarienne comme étant normale, sans pour autant exprimer une préférence envers la césarienne pour eux-mêmes ou leur partenaire. Ils ne connaissaient pas les risques/avantages de la césarienne, de la péridurale et de l'accouchement en milieu non hospitalier. Ces constatations soulignent la nécessité de voir les professionnels de la santé communiquer avec les jeunes adultes et leur fournir des renseignements factuels sur les options en matière de soins de maternité.

MOTS-CLÉS :
Accouchement, adolescents, étudiants, attitudes, connaissances, éducation en santé

INTRODUCTION

Technology-dependent care for uncomplicated childbirth and non-evidence-based interventions are becoming increasingly prevalent in maternity care in Canada.[1] The national cesarean section (CS) rate is climbing, reaching 30% or more in some jurisdictions.[1] Although regional CS rates in Quebec are among the lowest in the country (22.9%), they are well above the upper limit recommended by the World Health Organization (15%).[1] The use of epidural analgesia is also increasing. Nearly half of all Canadian women and 60.9% of women in Quebec who labour receive an epidural.[1]

The debate about CS on demand is thought to be fuelled in part by the flattering portrayal of elective CS featured in the popular press and entertainment media.[2–4] Adolescents and young adults might be particularly vulnerable to these messages, given the minimal education received in school or from physicians about childbirth. Fear of vaginal birth has been documented among providers and adult childbearing women[5–7] and might also be common among young people.

Little is known about birth attitudes held by college-aged women and men, the next generation of parents. A recent study was conducted on British Columbia university students' preference for CS rather than vaginal birth and on the reasons underlying their preferences for a particular mode of birth.[8] Other studies, aimed at a more wide-ranging assessment of students' opinions and knowledge of birth, were based on small or exclusively female samples.[9–11] An Australian study found that only 2% of students' answers on a survey of attitudes and beliefs about pregnancy, childbirth, and parenthood were influenced by school input.[12] This finding was attributed to the focus on sex education in programs on contraception and the biological aspects of conception and reproduction rather than on childbirth. The situation in Australia is largely reflective of that found in Canada, where

formal education about birth is absent from the health education curriculum. This educational gap is particularly problematic, considering that students rank conception, pregnancy, and birth as important topics of sexual health education.[13] Cleeton's videotaped intervention among college women further validates that population's interest in (and desire to learn more about) childbirth.[10] It also demonstrated the potential success of such initiatives to raising awareness about different concepts in maternity care and promoting positive attitudes towards the physiological process of birth. It remains to be seen, however, how attitudes held in adolescence and early adulthood translate into the adoption of different behaviours later in life.[14] Using an exploratory questionnaire of attitudes and beliefs, we asked a group of Quebec pre-university students the following questions:

(a) What do pre-university students believe about childbirth?
(b) How are these beliefs acquired?
(c) Do male and female students differ in their attitudes and beliefs?

METHOD

Sample :

The participants were 359 pre-university students (215 female and 144 male) attending Marianopolis College, an English-language centre d'education generale et professionnelle (CEGEP) in Montreal, Quebec. CEGEP consists of two years of study between high school and university and is equivalent to grade 12 and the first year of university in other jurisdictions. Between March and May 2008, we conducted a classroom-based survey of students' opinions about birth. Teachers from the departments of psychology, sociology, biology, history, English, economics, and physical education presented the survey to their students. Students were asked to complete the questionnaire during class and return it to their teachers. Teachers' and students' participation was voluntary. Signed informed consent was obtained from all participants, who were assured of the confidentiality and anonymity of their responses. The response rate was 71.19% for females and 68.25% for males. The study was approved by the ethics boards of Marianopolis College and the University of British Columbia.

Design

This study was adapted from a Canadian Institutes of Health Research (CIHR) funded National Maternity Care Attitudes and Beliefs Study survey of women expecting their first child. The survey was developed and tested for internal validity and comprehensibility over seven years and was used in a series of published studies.[15–19] (A full description of the survey's design, methodology, and choice of variables and measures has been published elsewhere.)[18] The questionnaire was tailored to the female and male student populations. We conducted a pilot study (N = 19) to test the face validity of our survey, and the questionnaires were revised on the basis of participants' comments.

Data Analysis

Data from the paper surveys were entered into a Snap 9 Professional (2006) web-based system (Snap Surveys, London, United Kingdom). Data were subjected to descriptive analyses with SPSS version 16.0 software (SPSS Inc., Chicago, IL). The six-point "strongly agree"–to–"strongly disagree" Likert scale for attitudinal questions was condensed to four points for ease of reporting. The 10-point Likert scale questions were designed with all 10 points defined, as opposed to a visual analog scale with anchor points only. Women's and men's results were considered separately. To quantify the significance of differences in response by gender, a Pearson chi-square test was run on selected multiple-choice questions, e.g. preferred method of delivery. An independent Student's t-test was performed on the 10-point Likert questions pertaining to students' expectations of childbirth, to determine whether ratings differed by gender. A p value of $<.05$ was deemed statistically significant in all analyses.

RESULTS

Sample characteristics

Participants' ages ranged from 16 to 22 years; the median age was 18 years. There was a wide distribution of ethnicities among respondents, reflecting the multicultural nature of the school. Most participants (43.7%) self-identified as being of Canadian origin.

Table 1. *Sample characteristics (n = 359)*

Characteristics	No. (%)
Age (yrs)	
Mean (range): 17.97 (16–22)	
Median: 18	
Ethnicity	
Canadian	156 (43.7)
Italian	57 (16)
Chinese	53 (14.8)
Other	91 (25.5)
Religion*	
Catholic	128 (36)
No religious affiliation	80 (22.5)
Christian Orthodox	34 (9.6)
Jewish	34 (9.6)
Other	80 (22.5)
Relationship status	
Single with partner	109 (30.7)
Single without partner	246 (69.3)
Current program of study	
Health Science	119 (33.3)
Pure and Applied Science	27 (7.6)
Social Science	201 (56.3)
Liberal Arts	10 (2.8)
Highest education degree planned	
Master's degree	172 (47.9)
Doctorate	95 (27.1)
Bachelor's degree	39 (11.1)
Health care–related professional degree	40 (11.4)
Children planned	
None	11 (3.1)
One	11 (3.1)
Two	135 (37.6)
Three	105 (29.2)
Four or more	28 (7.8)
Don't know	69 (19.2)
Ever present at a birth	
Yes	42 (11.8)
No	315 (88.2)
Participant's place of birth	
Home	4 (1.1)
Hospital	347 (97.2)
In a birthing centre	5 (1.4)
Other	1 (0.3)
Participant's mode of delivery	
Vaginal birth without help of instruments	174 (48.6)
Instrumental vaginal birth	32 (8.9)
Cesarean section	76 (21.2)
Not known	76 (21.2)

**Percentages may not add up to 100% on account of rounded and/or missing data.*

Italian and Chinese ethnic groups were also highly represented; approximately 15% of students belonged to each of these communities. Participants had high academic aspirations: more than three-quarters of students anticipated completing a master's or doctoral degree. Most respondents anticipated becoming parents with approximately 40% planning to have one or two children, and 37% planning three or more. Approximately 12% of students reported having been present at a birth. Almost all respondents were born in hospital. Approximately one-fifth of the sample reported being delivered by CS (see Table 1).

Birth Preferences and Attitudes

Over two-thirds of students agreed that childbirth is a process requiring professional intervention. Approximately two-thirds agreed that all deliveries should be under the supervision of an obstetrician. Table 2 details students' attitudes and beliefs towards maternity care providers, birth setting, method of delivery, and the experience of childbirth.

Nearly all students would choose an obstetrician to deliver their baby, whereas less than 3% would choose a midwife. Almost all students also indicated that they would choose a hospital as their place of delivery. Less than 5% would choose a birth centre, and about 1% expressed a preference for home birth. Over two-thirds agreed that giving birth at home is more dangerous than giving birth in hospital. There

Table 2: *Attitudes and Beliefs towards Maternity Care Providers, Birth Setting, Method of Delivery, and the Experience of Childbirth*

Attitude or Belief	Agree* (%)		Neutral (%)		Disagree† (%)		Don't Know (%)	
	Female	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*
Obstetricians (doctors who specialize in pregnancy and childbirth) should be involved only if the pregnancy is not healthy (i.e, in high-risk and complicated pregnancies).	6.1	11.8	6.1	10.4	81.3	60.4	6.5	17.4
All deliveries should be under the supervision of obstetricians.	74.4	67.4	13.5	12.5	9.3	12.5	2.8	7.6
Childbirth is a natural process that, in most cases, doesn't require professionals to intervene.	7.5	9.7	8.8	15.3	76.3	69.4	7.9	5.6
Giving birth at home is more dangerous than giving birth in hospital—even in healthy pregnancies.	67.6	70.8	13.1	11.1	11.7	5.6	7.5	12.5
For low-risk pregnancies, out of hospital birth centres can provide safe maternity care.	31.2	22.4	29.8	33.6	21.4	22.4	17.7	21.7
A cesarean section is just another way of having a baby.	71.2	42.4	18.1	27.1	7	20.1	3.7	10.4
Cesarean section is safer than vaginal birth.	10.7	7.7	20.1	22.4	31.8	31.5	37.4	38.5
Cesarean section is a less painful method of delivery for the mother than vaginal birth.	44.9	33.3	16.8	17.4	9.3	16	29	33.3
A woman's body recovers faster from a vaginal birth than from a cesarean birth.	37.4	34	7.5	11.8	7.5	6.9	47.7	47.2
Cesarean section is more convenient for mothers than vaginal birth, since it allows them to plan and schedule the birth in advance.	27	15.3	26	23.6	28.8	36.1	18.1	25
Cesarean section prevents sexual problems, compared with vaginal birth.	19.1	22.2	20.5	24.3	19.5	18.1	40.9	35.4
Cesarean section helps a mother regain her pre-pregnancy figure.	17.2	16.7	16.7	20.1	30.7	23.6	35.3	39.6
Cesarean section empowers expecting parents by allowing them to be more in control of the birth process than they would be in a vaginal birth.	20.1	20.8	29	25	27.1	22.9	23.8	31.2
Childbirth is a disgusting event.	9.3	11.1	16.7	28.5	71.6	56.2	2.3	4.2
Childbirth is a normal fact-of-life experience.	83	85.2	9.9	7	5.7	6.3	1.4	1.4
Childbirth is an amazing event.	82.6	72.3	12.2	24.3	1.9	2.1	3.3	1.4

NS = not statistically significant.
**"Strongly agree" and "agree" are reported as "agree."*
†"Strongly disagree" and "disagree" are reported as "disagree."

Table 3. *Birth Preferences*

Question	Females (n=215)		Males (n=144)	
	No.	%	No.	%
Who would you select as the one who would deliver your baby?				
An obstetrician	189	87.9	113	79.0
A family physician	8	3.7	11	7.7
A midwife	5	2.3	2	1.4
Other	1	0.5	5	3.5
Don't know	12	5.6	12	8.4
Where would you prefer to give birth (or have your partner give birth)				
At home	1	0.5	2	1.4
In hospital	195	91.1	115	80.4
At a birth centre	11	5.1	5	3.5
Other	2	0.9	2	1.4
No preference†	5	2.3	19	13.3
How would you want to give birth (or have your partner give birth)?				
Vaginal birth	130	60.7	76	53.9
Cesarean section	20	9.3	0	0.0
No preference†	64	29.9	67	46.9
To get relief from pain during labour, which method would you first choose?				
Natural methods	59	27.4		
Epidural	65	30.2		
Narcotics	14	6.5		
Follow my maternity care	56			
provider's advice	26.0			
Other	2	0.9		
Don't know	19	8.8		
Would you plan to breastfeed your newborn?				
Yes	167	77.7		
No	20	9.3		
Don't know	28	13.0		

NS = not statistically significant

** Percentages may not add up to 100% on account of rounded and/or missing data.*

† "No preference" equates to "I don't know" for female students and to the combination of "I don't know" and "whichever place/method my partner's maternity care provider recommends" for male students.

was a lack of agreement on the safety of out of hospital birth centres.

There was a significant difference between male and female students' preferred method of delivery ($p < .001$). Whereas over 50% of respondents would want themselves or their partner to give birth vaginally, 47% of male students and 30% of female students reported not having a preferred method of delivery. Few students indicated that they would choose CS for themselves or their partner, but more female students would elect CS than would male students (9.3% versus 0.0%). Despite few students' preferring CS, 71.2% of female students and 42.4% of male students viewed CS as "just another way of having a baby" ($p < .001$). See Table 3 for a summary of birth preferences.

In contrast to students' view of the acceptability of CS, there was considerable uncertainty about the risks and benefits of CS. Students had mixed feelings about whether, compared to vaginal birth, CS prevents sexual problems, is more convenient, or empowers expecting parents. Although we found high levels of "I don't know" responses to these items, a minority of students favoured one mode of delivery over the other when asked to consider factors such as pain, safety, and the mother's physical recovery. More than one-third of students responded that CS is a less painful method of delivery than vaginal birth, whereas 31% disagreed that surgical birth was safer than vaginal delivery, and about 35% felt that women would recover faster from vaginal birth.

Attitudes towards the Experience of Childbirth

Over 80% of students agreed that childbirth is a normal life experience, "painful," "scary," "stressful," "miraculous," and "awe-inspiring" were the most common responses of students describing the experience of childbirth

Table 4. *Descriptions of the Childbirth Experience*

"All outcomes considered, childbirth is an experience you would best describe as…"	**Female % ***	**Male % ***
Scary	45.3	19.4
Dangerous	10.3	6.2
Painful	48.1	35.4
Disgusting	7.5	2.8
Stressful	43.0	34.0
Normal	29.4	16.7
Overrated	1.4	6.9
Easy	0.5	2.1
Miraculous	43.9	31.2

**Percentages do not add up to 100% because respondents were able to choose more than one answer.*

(see Table 4). Mean responses to how dangerous childbirth is for mother and child fell below five on a 10-point scale (i.e., slightly toward "less dangerous") (see Table 5). The majority of students agreed that childbirth is an amazing event and disagreed that it is disgusting. We found significant differences by gender on these points: more female students viewed birth as amazing and rejected the characterization of birth as "disgusting" when compared with male students ($p = .02$), and female students rated stress and fear associated with birth significantly higher than did male students ($p = .003$ and $p < .001$, respectively). Students of both genders were nevertheless confident in their ability to cope with a birth experience, but male students expressed significantly more confidence than did female students ($p = .007$).

Female Students' Attitudes towards Pain Relief, CS, and Breastfeeding

The majority of female students agreed that it is a woman's right to choose CS for herself, even in the absence of a medical indication, and disagreed that having a CS means missing out on an important life experience. Female students attributed the rising CS rate mainly to women's desire to avoid pain during labour. Female students had mixed feelings about pain relief during childbirth. Approximately 40% agreed that labour pain was a necessary part of the process of childbirth, yet an equal proportion disagreed that women should try to avoid pain-relieving drugs during labour. Approximately half did not know if epidural analgesia interfered with the normal progress of labour or increased the probability of receiving interventions during labour. Their responses were split between whether they would prefer an epidural or natural methods for relief from pain during labour.

Female students had clear and positive beliefs about breastfeeding, in contrast to their beliefs about birth. Over 75% of females indicated that they would breastfeed their newborn. While a minority agreed that breastfeeding is inconvenient for the mother or makes the mother's breasts less attractive, more than 70% of respondents agreed that breastfeeding strengthens the bond between mother and child in an important way and that breast milk is beneficial to a baby's health and development (Table 6).

DISCUSSION

We found that students overwhelmingly preferred birth to be managed by an obstetrician in a hospital setting, which reflects the current Quebec norm of primary care by obstetricians. The results of our study and those of a recent survey of slightly older students at the University of British Columbia8 clearly indicate that the majority of students would choose vaginal birth as their mode of delivery.

In 1997, Lampman and Phelps found that only about a third of college students of both genders viewed CS as a normal way of giving birth,[9] compared with 60% of our sample (71.2% of females, 42.4% of males). Keeping in mind the somewhat different ages and locations of the different study samples, the status of CS birth among young people as an "atypical" mode of delivery has shifted: CS has been increasingly legitimized and normalized over the past decade, especially among young women. This change in attitude parallels the increasing prevalence of CS births in the past 15 years. Respondents in our survey held similar perceptions of the birth experience (as translated by their choice

Table 5. *Expectations of the Childbirth Experience as Rated on a 10-Point Likert Scale*

Item	Scale	Mean (SD)		Difference (SE)	*t* Value	*p* Value
		Females	Males			
What is your overall opinion about the safety of childbirth for the mother?	Safe = 1 Dangerous = 10	4.45 (2.17)	4.62 (2.17)	−0.17 (0.23)	−0.71	.48
What is your overall opinion about the safety of childbirth for the baby?	Safe = 1 Dangerous = 10	4.67 (2.14)	4.71 (1.98)	−0.04 (0.22)	−0.19	.85
How would you rate the pain giving birth might cause you/a woman?	No pain = 1 Much pain = 10	8.48 (1.65)	8.64 (1.45)	−0.16 (0.17)	−0.92	.36
How would you rate your fear about giving birth/a birth experience?	No fear = 1 Much fear = 10	7.44 (2.15)	6.15 (2.42)	1.30 (0.24)	5.33	< .001
How would you rate your self-confidence about giving birth/a birth experience?	Not confident = 1 Extremely confident = 10	6.01 (2.22)	6.67 (2.34)	−0.66 (0.24)	−2.70	.007
How would you rate the stress giving birth/a birth experience might cause you?	No stress = 1 Much stress = 10	7.67 (1.97)	6.99 (2.25)	0.68 (0.23)	3.02	.003

SD = standard deviation; SE = standard error.

of positive and negative adjectives to describe birth) when compared with respondents in earlier studies,[10,11] in spite of the dramatically increased rates of intervention in normal childbirth that have occurred in the past two decades. Our results indicate that while clear views on some aspects of maternity care are already well established at the pre-university level, some important concepts are poorly understood. The proportion of "I don't know" responses reached nearly 55% on some items; the highest rates were associated with questions pertaining to CS and pain relief. This result parallels the responses in a national survey of women approaching their first childbirth.[19] This high measure of uncertainty contrasts with students' strong opinions about the place of delivery and the involvement of their preferred maternity care providers in childbirth. We found that students' beliefs about out of hospital birth settings and their safety reflect the society's general lack of knowledge about the safety of planned home births with registered midwives.[20,21]

While it would be expected that a population of pre-university students who have received little (if any) education about childbirth would be uninformed about the specific benefits or risks of CS or epidural analgesia, we are concerned that a proportion of female students (9.3% for CS and 30.2% for epidural analgesia, respectively) would elect these interventions in spite of their lack of awareness of the implications of their choice in terms of maternal and fetal morbidity. In contrast, a high proportion of female students (75.8%) demonstrated knowledge of the benefits of breastfeeding, and a similarly high proportion (77.7%) planned to breastfeed, which suggests that awareness through education can affect these choices.

Accurate childbirth information can affect young people approaching their childbearing years. However, we found that only 10%–15% of students cited doctors or school as the source of their beliefs about childbirth, while 20%–30% cited the media as a source of information about childbirth. In a national study of women approaching the birth of their first child,[19] only 30% had had prenatal education, and most cited the Internet as their main source of information. It is on this basis that we advocate for the inclusion of evidence-based education about birth in health care professionals' interactions with young adults, as well as the incorporation of accurate birth information into

Table 6. *Female Students' Attitudes and Beliefs towards Maternal Involvement, Cesarean Section, Pain Relief, and Breastfeeding*

Attitute or Belief	Agree (%)	Neutral (%)	Disagree (%)	Don't Know (%)
The most important thing in having a successful birth is the woman's own confidence in her ability to give birth.	39.5	32.6	20.9	7.0
For a woman, having a vaginal birth makes her feel better about herself (a more satisfying and empowering experience) than delivering by cesarean section.	34.0	23.3	30.2	12.6
It's a woman's right to choose a cesarean section for herself—even if there is no medical reason for it.	68.7	15.0	14.5	1.9
Women who deliver their babies by cesarean section are missing out on an important life experience.	13.0	18.1	60.5	8.4
I believe important reasons for the rising cesarean section rate in Canada include women's belief that a cesarean section by choice is safer than a planned vaginal birth.	45.1	20.7	9.9	24.4
I believe important reasons for the rising cesarean section rate in Canada include women's belief that cesarean section is less painful than vaginal birth.	67.9	9.4	5.2	17.5
I believe important reasons for the rising cesarean section rate in Canada include changing maternal characteristics (such as increases in maternal age and weight, the rising importance of scheduling the childbearing process to make it fit into career life, etc.).	51.4	19.3	3.8	25.5
I believe important reasons for the rising cesarean section rate in Canada include unnecessary interference by professionals during labour.	17.8	21.6	30.3	30.3
As much as possible, women should try to avoid pain-relieving drugs during their labour.	30.8	22.9	39.3	7.0
Labour pain is a necessary part of the process of childbirth.	40.9	20.0	30.7	8.4
An epidural increases the risk of complications in labour.	13.5	18.1	13.5	54.9
Epidurals interfere with the normal progress of labour.	14.9	15.3	21.9	47.9
Breastfeeding is inconvenient for the mother.	12.1	14.4	64.2	9.3
Breastfeeding strengthens the bond between mother and child in early life in an important way.	70.1	13.1	5.6	11.2
Breast milk is more beneficial to a baby's health and development than bottle feeding.	75.8	10.2	3.7	10.2
Breastfeeding makes a woman's breasts less attractive.	19.2	21.0	37.9	22.0

existing health and sexual education curricula aimed at students at the secondary and post-secondary levels.

Health professionals are routinely called upon to provide information about contraception and family planning. We urge that the topic of childbirth also be addressed—at an early stage long before the first prenatal visit—to positively influence young people's attitudes and beliefs. Working to reframe the portrayal of childbirth in the media and newer forms of communication (such as Internet social media) will play a role in engaging and educating young people. Public health initiatives can promote positive attitudes towards birth and the use of evidence-based practices. For example, the significant increase in breastfeeding rates in Quebec during the past few years may be attributed to the Quebec government's initiatives in promoting breastfeeding.[22]The success of these policies provides a model on which to base strategies that address the benefits of planned vaginal birth versus CS, epidural analgesia, and out of hospital birth settings.

Given the increasing CS rate in North America,[3] we maintain that early exposure to childbirth information as young people approach their childbearing years and within the context of prenatal care and society in general will fill knowledge gaps and inform public opinion about the benefits of physiological birth and the appropriate and judicious use of technology during birth.

Limitations

Voluntary participation in the study inevitably resulted in a degree of self-selection. The fact that nearly all respondents planned to have children in the future, along with the surprising proportion of respondents who reported having witnessed a birth, may indicate a greater interest in (or experience with) childbirth among the participants as compared with nonparticipants.

CONCLUSIONS

For the participants in this study, hospital vaginal delivery attended by an obstetrician remains the dominant model. While the rise in the CS rate correlates with the increasing perception of CS delivery as normal, it does not seem to have translated into a higher preference among students for this mode of birth over vaginal delivery. In the eyes of these pre-university students, childbirth remains a painful but miraculous event. There were some significant differences between male and female students to the sources of their beliefs, their perceptions of birth, and their preference for (and acceptance of) CS. Students were least aware of the risks and benefits of CS, epidural analgesia, and out of hospital birth settings.

We suggest health professionals provide evidence-based information about childbirth to young adults in order to promote informed decisions and to enhance the birth experiences of future parents.

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