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**A comparison between Swedish midwives and obstetricians & gynecologists opinions on
cesarean section**

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Abstract

Objective: To compare Swedish obstetricians/gynecologists and midwives' attitudes and opinions on different aspects of cesarean section (CS).

Method: In total 330 midwives from the south east of Sweden and 1280 Swedish obstetricians/gynecologists were asked to answer a study-specific questionnaire anonymously about their opinions on different issues concerning CS.

Results: The majority of obstetricians/gynecologists and midwives had more than 10 years of experience in their professions (75.2% vs. 73.6%). The midwives thought that a reasonable CS rate would be 11.5% whereas the corresponding figures for the obstetricians/gynecologists was 13.8% ($p < 0.001$). There are differences in opinions and attitudes concerning both CS rates and other aspects in connection with CS.

Conclusion: There are evident differences in attitudes towards CS and mode of delivery between midwives and obstetricians/gynecologists. These need to be explored and discussed in relation to state-of-the-art knowledge and should become a part of the curriculum for both groups of professionals both in training as well as on a regular clinical basis.

Keywords: cesarean, maternal request, attitudes, mode of delivery

Introduction

The cesarean section (CS) rate has been the subject of debate during the past few years with most of the attention focused on the steep increase. The reasons for this increase are also matters of concern and are under analysis both from a medical and a public perspective since the “women’s own choice” or cesarean on “maternal request” is thought to be the major reasons for the increase (1-3). Among the general public there is an agreement that women have the right to choose both on the basis of concern with bodily integrity and because of fear of childbirth (4). However, among professionals there are contradictory opinions (5,6).

For a woman who is to give birth, her health, wellbeing and delivery are managed by different professions at both the antenatal care clinic (ACC) and the hospital. During pregnancy the pregnant woman should be given adequate and balanced information on issues concerning mode of delivery and other health matters related to the delivery. Some studies have shown that there are differences in maternal caregivers opinions’ on how they think one should deal with the woman’s wishes and also on what might be an acceptable rate of cesarean section (5,6).

In Sweden the ACC’s have their own organization with midwives usually not involved in the delivery process. A pregnant woman visits the ACC’s midwives for routine checkups 8-10 times during her pregnancy. The midwives in the delivery wards handle the normal delivery on their own but if there are medical complications an obstetrician takes over the responsibility. The obstetricians/gynecologists who work in hospitals are often dealing with both obstetrics and gynecology but characterize themselves mostly as obstetricians or gynecologists depending on their main working field.

In two recent studies we have investigated midwives and obstetricians/gynecologists attitudes on the subject of CS rates, women’s own choice of mode of delivery and on the caregivers personal delivery experiences (7,8). The aim of this study was to explore the differences and

similarities between these two professions' concerning opinions on CS rates, attitudes toward different modes of delivery and attitudes toward providing CS on demand. In addition we wanted to explore if gender, age and experience influence the attitudes held.

Material and methods

Obstetricians & Gynecologists

A register of all obstetricians/gynecologists working in Sweden was used to identify potential participants for the study. In total, this list included 1346 names and addresses. Sixty-six of the letters were returned because the obstetrician/gynecologist had moved abroad, had retired, did not work as an obstetrician/gynecologist or was deceased. In all 1280 obstetricians/gynecologists received a study specific questionnaire together with a cover letter stating the purpose of the study and a guarantee of confidentiality together with a pre-stamped envelope. After two reminders, a total of 845 obstetricians/ gynecologists (66 %), 517 females and 328 men, returned a completed questionnaire. Of these 332 (45%) stated that their main professional field was gynecology and 185 (25%) stated obstetrics' as their main professional work area and 228 (30%) were working equal proportions in both fields.

For more background data on the participants see Gunnervik et al 2008 (7).

The study was performed during late 2005.

Midwives

All midwives in two Swedish counties in the southeast region of Sweden were asked to participate in a study about attitudes and opinions towards mode of delivery. In total, 330 midwives registered as working within these counties at the time of the investigation were invited and received a postal questionnaire. Included with each questionnaire was a cover letter stating the purpose of the study, with a guarantee of confidentiality and a stamped envelop. Two reminders were sent. Two hundred and seventy-eight (84 %) midwives answered and returned the questionnaire. There were 152 (54.9%) midwives that were working mainly at the delivery ward and consequently 125 midwives who stated that they

worked at the ACC. For more background data on the participants see Gunnervik et al. 2008 (8). The study was performed in the spring of 2006

Instrument

The items were drawn from the literature and from clinical experience and formed three subscales. In the first subscale the participants were asked to provide both personal and professional background data. In the following two subscales the participants were asked to answer questions on personal attitudes towards cesarean section related to professional experience, different aspects on mode of delivery in general and hypothetical questions on the mode of delivery they would prefer themselves/or for their partner and finally a hypothetical question on the mode of delivery they would prefer for their own daughter.

We assessed attitudes by asking the respondents to indicate their agreement with items on a 4-point Likert scale. Tables 2 and 3 present data for the collapsed categories “Agree” (Strongly agree & Agree somewhat), and “Disagree” (Disagree strongly & Disagree somewhat).

Ethics

The study was approved by the Human Research Ethics Committee, Faculty of Health Sciences, Linköping University.

Statistics

All analyses were done using the SPSS program 16.0 (SPSS Inc., Chicago, US).

The χ^2 –test and the Student’s t-test was used to compare differences between midwives and obstetricians/gynecologists. Statistical significance was defined as (two-sided) p-values \leq 0.05. In order to test if the results concerning the attitudes towards CS were affected by the participants’ age or working experience we performed multiple logistic regression analyses. In these analyses we included profession/working area (i.e. obstetricians/gynecologists and midwives), age (< 50 years and \geq 50 years), working experience (\leq 10 years and > 10 years) and if the caretaker had children of their own (yes, no) as independent categorical variables.

The dependent variables were all variables included in Table 1 and the results are presented in Table 2.

Results

Of the 846 obstetricians/gynecologists 75.2% had worked for more than 10 years in the profession. The corresponding number of midwives who had been in the profession > 10 years was 73.6% ($p=0.596$). Of the obstetricians/gynecologists, 43.9% were younger than 50 years, and of the midwives 47.5% ($p=0.330$) were younger than 50 years. All midwives were women and among the obstetricians/and gynecologists 61.1% were women.

Swedish midwives thought that a reasonable CS rate would be 11.5% (SD 3.09); the corresponding figure for the obstetricians/gynecologists was 13.8% (SD 3.14) ($p<0.001$). In a comparison between female obstetricians/gynecologists and midwives, the female doctors accepted a higher CS rate than midwives 13.9% (SD 3.00) compared to 11.5% (SD 3.09) ($p=0.000$). Male obstetricians/gynecologists accepted a higher level of CS than their female colleagues i.e. both midwives and physicians'; 13.7% (SD=3.36) vs. 13.1% (SD=3.22) ($p=0.028$). Having children of their own did not influence the opinion on an appropriate level of CS ($p=0.469$).

Midwives and obstetricians/gynecologists differed in all personal attitudes regarding CS except for the two statements "*A normal vaginal delivery is preferable compared with a CS*" and "*I think that all breech presentation should go through an external cephalic version*", Table 1.

Working experience, working area (midwife or primarily as an obstetrician) experience of having their own children and age do have some influence on midwives' and physicians' attitudes, depending on the statement (Table 2).

In a comparison of physicians and midwives attitudes on the two statements "*One should agree to a woman's right to have an elective CS*" and "*Elective CS is the safest mode of delivery for both mother and the baby*", it was found that obstetricians/gynecologists are more likely than midwives to agree with both of these statements (Table 2).

The only statement where the presence of own children had an effect was *"I think that all breech-presentations should go through an external cephalic version"* (OR=0.428 p=0.008).

On the hypothetical questions concerning preferred mode of delivery there is a difference on how to manage different scenarios, where obstetricians have a much more permissive attitude towards CS than midwives on all questions except "normal pregnancy at term" (Table 3).

Comment

We found that midwives and obstetricians/gynecologists differ in their attitudes and opinions on the preferred CS rate and also on all other different aspects on CS except for the two statements: *“A normal vaginal delivery is preferable compared with a CS”* and *“I think that all breech presentations should go through an external cephalic version.”*

A difference was also found in responses to the hypothetical question on a baby's weight and preferred mode of delivery concerning themselves, a partner or a daughter. There are reasons for concern with the findings from this study in that a pregnant woman might become confused if she receives contradictory information. This may in turn lead to insecurity and even to anxiety and fear about the upcoming childbirth. The consequences for the parents-to-be and or the pregnant woman can be a feeling of conflict about whom to trust and also an insecurity about the competence of the medical staff.

Differences in attitudes among caregivers can be one of the reasons for the steep rise in the rate of CS and may also be an explanation for different CS rates in different hospitals within regions or countries depending on policies and on the level of collaboration between the professions and the pregnant woman.

The reason midwives think that the rates are too high could be explained by the fact that they are neither involved with the decisions for a CS nor the surgical procedure itself. There is evidence that obstetricians/gynecologists are more likely to perform a CS in order to eliminate the risk for malpractice litigation or complaints but also because of their medical knowledge and experience on the status of the mother and child that they believe will help them to see to it that delivery will be as safe as possible (9).

Pregnant women in general agree that the woman herself should be the one to decide about the mode of delivery. The majority of pregnant women would at present choose a vaginal delivery (10). In a study which explored women's experiences of decision making about mode

of delivery after previous CS the results show that the women wanted control over the decision about planned mode of delivery. However, the women were often making the decision without being provided with comprehensive and specific information about possible health risks and benefits (11). Pregnant women and their partners need to be secure in knowing that there is a working alliance between their midwife and obstetrician based on available scientific evidence and that both professions will work together to give each woman a safe and good delivery experience. Differences in attitudes towards mode of delivery need to be explored and discussed in relation to state-of-the-art knowledge and should become a part of the curriculum for both groups of professionals both in training as well as on a regular clinical basis.

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Opinions on cesarean section

Table 1. A comparison of personal attitudes regarding cesarean section among midwives and obstetricians/gynecologists.

		Midwives n (%)	Obstetricians/gynecologists n (%)	p*
A normal vaginal delivery is preferable compared with an elective CS	Agree	275 (99.3)	829 (99.4)	0.823
	Disagree	2 (0.7)	5 (0.6)	
One should agree to a woman's right to have an elective CS	Agree	61 (22.3)	238 (28.8)	0.037
	Disagree	212 (77.7)	588 (71.2)	
Elective CS is the best choice for a woman with fear of delivery	Agree	17 (6.2)	102 (12.3)	0.004
	Disagree	258 (93.8)	726 (87.7)	
I consider myself more restrictive to CS than my colleagues	Agree	23 (8.8)	251 (31.3)	< 0.001
	Disagree	238 (91.2)	551 (68.7)	
Elective CS is as safe as a vaginal delivery for the mother	Agree	65 (23.6)	303 (36.8)	< 0.001
	Disagree	211 (76.4)	523 (63.2)	
Elective CS is as safe as a vaginal delivery for the baby	Agree	88 (31.8)	440 (53.1)	< 0.001
	Disagree	189 (68.2)	389 (46.9)	
Elective CS is the safest mode of delivery for both mother and baby	Agree	7 (2.5)	44 (5.3)	0.057
	Disagree	269 (97.5)	784 (94.7)	
A vaginal delivery increases the risk for incontinence	Agree	7 (2.5)	105 (12.6)	< 0.001
	Disagree	268 (97.5)	728 (87.4)	
A vaginal delivery increases the risk for prolapse	Agree	10 (3.6)	104 (12.5)	< 0.001
	Disagree	266 (96.4)	729 (87.5)	
A vaginal delivery increases the risk for pelvic floor insufficiency	Agree	13 (4.7)	77 (9.2)	0.018
	Disagree	261 (95.3)	756 (90.8)	
Women's concern about perineal injury has increased the CS rate	Agree	54 (19.9)	226 (27.9)	0.009
	Disagree	217 (80.1)	584 (72.1)	
I think that an epidural anesthesia increases the risk for fetal malrotation	Agree	31 (11.9)	51 (6.3)	0.003
	Disagree	230 (88.1)	764 (93.7)	
I think that all breech-presentations should be delivered with a CS	Agree	130 (47.8)	551 (66.6)	< 0.001
	Disagree	142 (52.2)	277 (33.4)	
I think that all breech-presentations should go through an external cephalic version	Agree	263 (95.3)	769 (92.7)	0.128
	Disagree	13 (4.7)	61 (7.3)	

* p-value for χ^2 -test.

Table 2. Odds ratios from multivariate logistic regressions with personal attitudes regarding cesarean section as dependent variables and age, working experience, working area and child indicator as independent variables.

	Experience ¹		Age ²		Midwives/ Obstetricians/ gynecologists ³		Have children ⁴	
	Odds ratio (CI odds ratio)	p	Odds ratio (CI odds ratio)	p	Odds ratio (CI odds ratio)	p	Odds ratio (CI odds ratio)	p
A normal vaginal delivery is preferable compared with an elective CS	0.453 (0.043 – 4.781)	0.510	1.297 (0.244 – 6.894)	0.760	1.226 (0.236 – 6.378)	0.809	1.073E7 (0.000 - .)	0.996
One should agree to a woman's right to have an elective CS	1.133 (0.764 – 1.681)	0.535	1.252 (0.896 – 1.749)	0.188	1.421 (1.027 – 1.967)	0.034	1.049 (0.687 – 1.603)	0.824
Elective CS is the best choice for a woman with fear of delivery	0.671 (0.364 – 1.236)	0.201	2.047 (1.193 – 3.510)	0.009	2.063 (1.208 – 3.524)	0.008	0.810 (0.419 – 1.565)	0.531
I consider myself more restrictive to CS than my colleagues	1.989 (1.288 – 3.071)	0.002	1.084 (0.766 – 1.533)	0.649	4.959 (3.111 – 7.886)	<0.001	1.063 (0.669 – 1.690)	0.795
Elective CS is as safe as a vaginal delivery for the mother	1.147 (0.782 – 1.680)	0.483	1.591 (1.152 – 2.197)	0.005	1.908 (1.389 – 2.622)	<0.001	1.210 (0.808 – 1.811)	0.356
Elective CS is as safe as a vaginal delivery for the baby	0.754 (0.532 – 1.070)	0.113	1.705 (1.257 – 2.312)	0.001	2.483 (1.855 – 3.323)	<0.001	1.102 (0.748 – 1.624)	0.624
Elective CS is the safest mode of delivery for both mother and baby	0.704 (0.259 – 1.915)	0.492	2.833 (1.182 – 6.790)	0.020	2.419 (1.016 – 5.760)	0.046	0.978 (0.376 – 2.546)	0.964
A vaginal delivery increases the risk for incontinence	0.631 (0.364 – 1.093)	0.100	0.847 (0.505 – 1.421)	0.530	6.481 (2.808 – 14.959)	<0.001	1.382 (0.778 – 2.454)	0.270
A vaginal delivery increases the risk for prolapse	0.595 (0.349 – 1.014)	0.056	0.786 (0.472 – 1.308)	0.354	4.321 (2.151 - 8.683)	<0.001	1.094 (0.602 – 1.988)	0.767
A vaginal delivery increases the risk for pelvic floor insufficiency	0.772 (0.427 – 1.394)	0.390	0.795 (0.459 - 1.378)	0.413	2.226 (1.191 – 4.163)	0.012	1.176 (0.614 – 2.253)	0.625
Women's concern about perineal injury has increased the CS rate	1.049 (0.714 – 1.541)	0.807	0.826 (0.589 – 1.158)	0.267	1.649 (1.174 – 2.317)	0.004	1.243 (0.815 – 1.897)	0.312
I think that an epidural anesthesia increases the risk for fetal malrotation	2.165 (1.022 – 4.584)	0.044	1.164 (0.675 – 2.005)	0.585	0.498 (0.309 – 0.804)	0.004	1.094 (0.526 – 2.273)	0.810
I think that all breech-presentations should be delivered with a CS	0.723 (0.509 – 1.027)	0.070	1.500 (1.106 – 2.034)	0.009	2.184 (1.649 – 2.893)	<0.001	1.003 (0.673 – 1.493)	0.989
I think that all breech-presentations should go through an external cephalic version	0.436 (0.196 – 0.970)	0.042	0.921 (0.517 – 1.643)	0.781	0.574 (0.303 – 1.089)	0.089	0.428 (0.228 – 0.803)	0.008

1 Reference level= over 10 years

2 Reference level= older than or equal to 50 years of age

Opinions on cesarean section

3. Reference level=obstetricians/gyneacologists

4. Reference level = no children

Table 3. Hypothetical questions on preferred mode of delivery due to different scenarios.

I would prefer my self or my partner to be deliver in the following manner due to the conditions described:		Obstetricians	Gynecologists	Midwives at delivery	Midwives at ACC	P*
Normal pregnancy at term	Vaginal delivery	98.5	99.3	100.0	99.1	0.426
	CS	1.5	0.7	0.0	0.7	
Baby's weight estimated to 4.0 – 4.4 kg	Vaginal delivery	93.9	96.8	100.0	99.3	0.002
	CS	6.1	3.2	0.0	0.7	
Baby's weight estimated to 4.5 – 4.9 kg	Vaginal delivery	56.7	70.8	82.5	76.6	<0.001
	CS	43.3	29.2	17.5	23.4	
Baby's weight estimated to ≥ 5 kg	Vaginal delivery	15.7	16.9	30.9	27.0	0.001
	CS	84.3	83.1	69.1	73.0	
If you have a daughter with a normal pregnancy at term	Vaginal delivery	99.1	99.8	100.0	100.0	0.311
	CS	0.9	0.2	0.0	0.0	
I would prefer an elective CS with all breech presentation.	Yes	69.6	64.1	42.9	52.1	<0.001
	No	30.4	35.9	57.1	47.9	

* p-value for χ^2 -test.