



Unwanted caesarean sections among public and private patients in Brazil: prospective study

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BMJ 2001;323:1155-1158
doi:10.1136/bmj.323.7322.1155

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(Accepted 23 July 2001)

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Abstract

Objective To assess and compare the preferences of pregnant women in the public and private sector regarding delivery in Brazil.

Design Face to face structured interviews with women who were interviewed early in pregnancy, about one month before the due date, and about one month post partum.

Setting Four cities in Brazil.

Participants 1612 pregnant women: 1093 public patients and 519 private patients.

Main outcome measures Rates of delivery by caesarean section in public and private institutions; women's preferences for delivery; timing of decision to perform caesarean section.

Results 1136 women completed all three interviews; 476 women were lost to follow up (376 public patients and 100 private patients). Despite large differences in the rates of caesarean section in the two sectors (222/717 (31%) among public patients and 302/419 (72%) among private patients) there were no significant differences in preferences between the two groups. In both antenatal interviews, 70-80% in both sectors said they would prefer to deliver vaginally. In a large proportion of cases (237/502) caesarean delivery was decided on before admission: 48/207 (23%) in women in the public sector and 189/295 (64%) in women in the private sector.

Conclusions The large difference in the rates of caesarean sections in women in the public and private sectors is due to more unwanted caesarean sections among private patients rather than to a difference in preferences for delivery. High or rising rates of

caesarean sections do not necessarily reflect demand for surgical delivery.

Introduction

Different rates of caesarean section in public and private patients suggest that non-medical factors, such as economic gain and pressures of private practice, may motivate doctors to perform surgical deliveries. Alternatively, these differences may reflect patients' preferences and result from informed choices about type of delivery.¹⁻⁶ In Brazil, choosing between these interpretations is contentious as the rate of caesarean sections among private patients is extremely high and more than twice the rate in the public sector. About one quarter of all deliveries take place in the private sector, and more than 70% of those are by caesarean section.⁷⁻⁸ Such a rate cannot be attributed to the actions of a fraction of the obstetricians with private practice⁹⁻¹⁰ or the prevalence in the population of the usual medical indications for caesarean delivery.¹¹ The most doctor friendly, but still problematic, explanation is a strong preference for surgical deliveries among the upper and middle class women who are most likely to have private medical insurance.¹²

Brazil is often portrayed as a country where there is an unusually large demand for caesarean sections, especially among more affluent women.¹³ The alleged motivations for the choice include fear of vaginal birth, preservation of coital function, relief from the pain of labour, and to obtain a tubal ligation.¹⁴⁻¹⁵ Often the evidence put forward comes from physicians' accounts of women's preferences rather than directly from women themselves.¹⁶⁻¹⁸ In two recent postpartum studies conducted in Brazil among both private and public

See also editorial by Johanson and Newburn

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BMJ 2001;323:1155-8

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Table 1 Baseline characteristics of respondents in final sample and of those lost to follow up, by sector

	Public			Private		
	Final sample	Lost to follow up	P value*	Final sample	Lost to follow up	P value*
No of women	717	376		419	100	
Age (years)	25.3	25.4	0.919	28.7	28.3	0.569
No of previous deliveries	0.95	1.14	0.016	0.60	0.56	0.630
Education (years)	7.62	6.64	<0.001	11.0	11.1	0.730
No of antenatal visits	1.26	1.11	0.003	1.97	1.96	0.898
Married/cohabiting (%)	596 (83.1)	322 (85.6)	0.272	374 (89.2)	88 (88.0)	0.771
Preferred vaginal delivery (%)	571 (79.6)	281 (74.7)	0.070	303 (72.3)	70 (70.0)	0.644

*Based on independent samples *t* test (two tailed, equal variances not assumed) and Pearson χ^2 .

patients in three metropolitan areas, little evidence of such beliefs was found, and many of the women who had a caesarean delivery declared that they had wanted to deliver vaginally.^{19 20}

To gain a more complete assessment of the evolution of women's preferences regarding type of delivery among both public and private patients, we carried out a prospective study to assess these preferences early and late in pregnancy and then compared preferences with outcomes.

Methods

Participants

We recruited pregnant women aged 18 to 40 years in four cities (Porto Alegre, Belo Horizonte, and Natal, and the municipality of Sao Paulo) in four Brazilian states between April 1998 and June 1999. All women signed informed consent forms. We excluded women who received their antenatal care in specialised clinics (such as clinics for women at high risk, those whose pregnancy was a result of assisted reproduction, and any who were infected with HIV). The women were up to 22 weeks pregnant and had had no more than two antenatal visits before the first study interview. We stratified the sample by sector of care and birth order. In each city we selected a representative list of about 10 hospitals with maternity services in both the public and private sector and recruited women who planned to deliver in these hospitals.

Procedures

Each woman was interviewed three times: at the time of recruitment; a month before the expected due date; and a month after the expected due date. We typically conducted the first interview in a healthcare facility and the second antenatal interview and the postpartum interview in the woman's home. Reasons for loss to follow up included women not being at the address given, delivery before the second interview, miscarriage, and neonatal death.

We used a standardised questionnaire for each interview. The two antenatal interviews included the question "What type of delivery would you like to have?" for which the precoded responses were vaginal (normal), caesarean, depends on the doctor's decision, and don't know or undecided. To the open question about her reasons for preferring this type of delivery, we precoded up to two responses in order of importance. We asked if the doctor had already talked to her regarding type of delivery and, if so, what was suggested and why. The first questionnaire also determined type of delivery of any previous births.

In the second interview we requested more detail regarding conversations the woman had with her

doctor about the type of delivery. If the doctor had recommended a caesarean, in addition to the reasons given, we asked the respondent if the surgery was already scheduled.

The third interview covered what happened during delivery, who attended and in which hospital, whether the delivery was paid for by the public health insurance system, date and time of admission, whether the labour was spontaneous or induced, and whether any anaesthesia was administered. If the delivery was by caesarean we asked if it was scheduled and, if so, when and for what reason. If the caesarean was not scheduled we asked about the timing of the decision to operate and any reasons for the decision. We also included questions regarding satisfaction with care.

Data analysis

We classified all women who completed all three interviews as public or private patients according to method of payment. For women lost to follow up we based the classification on the clinic where they had received antenatal care. We consider caesarean deliveries to be unwanted if the woman had declared a preference for vaginal birth in both antenatal interviews. We used Pearson χ^2 and *t* tests to assess significance and both SPSS and Stata (StataCorp, College Station, TX).

Results

We recruited 1612 women, 1093 public patients and 519 private patients. There were 1136 women in the final sample as 476 women were lost to follow up. Of these, 376 were public patients and 100 were private patients. All three interviews were completed by 717 (66%) women in the public sector and 419 (81%) women in the private sector. Most of the loss to follow up (405 women) occurred between the first and second interviews. Table 1 shows details of the groups and differences between the final sample and those lost to follow up.

In the final sample, 90% (377) of private patients were attended at delivery by a private doctor and 9% (38) by a staff physician. The corresponding figures for the public patients were 12% (86) and 85% (609), with 5% (36) being attended by midwives or nurses. The rates of caesarean delivery were 31% (222/707) in the public sector and 72% (302/419) in the private sector. In both groups about 3% of deliveries were forceps deliveries, and 66% in the public sector and 25% in the private sector were spontaneous vaginal deliveries.

Among primiparous women in the final sample 90% (280) in the public sector and 84% (189) in the private sector declared a preference for a vaginal delivery in the first interview (fig 1). Among multiparous women with no previous caesarean delivery, the preference for a vaginal delivery was over 80% in the

first interview in both sectors. Finally, among women with a previous caesarean delivery, over 42% in both sectors stated a preference for vaginal delivery. There was no significant difference in preferences between the two sectors for any of the three categories.

Table 2 shows that most of the women preferred a vaginal delivery either because recovery is faster or because it is the natural way to deliver. The reasons the respondents who wanted a caesarean gave for their preferences, however, were more diverse. Avoidance of pain and concurrent tubal ligation were often mentioned, and women in the private sector often cited a positive experience with a previous caesarean section. Concern for preservation of coital function was hardly mentioned as a reason for preferring caesarean delivery.

In both sectors stated preferences regarding type of delivery were mostly consistent between the first and the second interview (table 3). A large proportion of women consistently declared preferences for a vaginal delivery. The next largest category comprised women who consistently expressed a preference for a caesarean. Only a small proportion of women changed their preference between the two interviews.

Figure 2 shows how women who had twice declared their preference for a vaginal delivery actually delivered. Compared with women in the public sector,

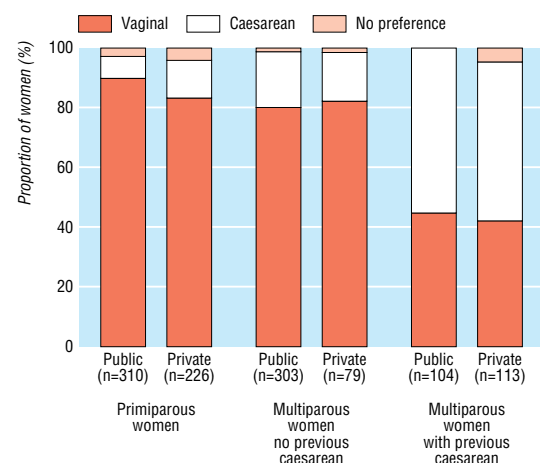


Fig 1 Preference for type of delivery at first interview, according to parity and previous delivery, by sector

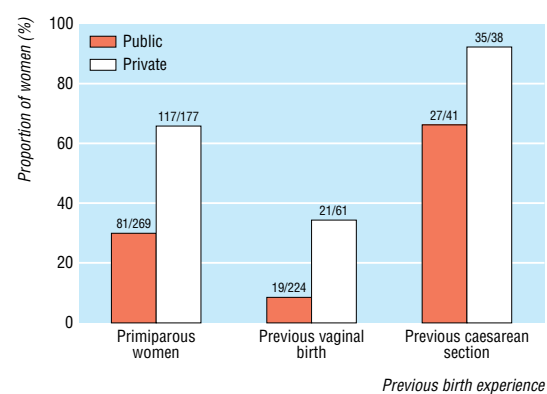


Fig 2 Caesarean section rates for women who preferred vaginal delivery in first and second interviews, by sector, parity, and previous birth experience

Table 2 Reasons given by women for preferring vaginal birth, by sector. Figures are number (percentage) of women

Reason for preference	Public (n=559)	Private (n=295)
Faster recovery	231 (41.3)	127 (42.9)
It is natural	159 (28.4)	109 (37.0)
Better for baby	25 (4.4)	32 (10.9)
Positive experience with previous vaginal delivery	38 (6.8)	6 (2.0)
Other reasons	107 (19.2)	21 (7.2)

Table 3 Women's preferences for method of delivery in first and second interview, by sector. Figures are number (percentage) of women

Preferences (first/second interview)*	Public (n=697)	Private (n=392)
Vaginal/vaginal	534 (76.6)	276 (70.4)
Caesarean/caesarean	92 (13.2)	75 (19.1)
Vaginal/caesarean	32 (4.6)	19 (4.8)
Caesarean/vaginal	39 (5.6)	22 (5.6)

*Excludes 47 women who did not know or had no preference for type of delivery (2.8% of public sector sample and 6.4% of private sector sample).

Table 4 Timing of decision to perform caesarean delivery, by sector. Figures are number (percentage) of women*

Timing of decision	Public (n=207)	Private (n=295)
Scheduled before admission:		
>24 hours	38 (18.4)	120 (40.7)
≤24 hours	10 (4.8)	69 (23.4)
Decision taken after admission:		
≤6 hours	93 (44.9)	89 (30.2)
≥7 hours	66 (31.9)	17 (5.8)

*Excludes 22 missing cases: seven from private sector and 15 from public sector.

a much larger proportion of women in the private sector subsequently had a caesarean section. All differences between sectors according to parity and previous birth experience were significant ($P < 0.00$).

Most of the women who consistently expressed a preference for vaginal delivery but actually had a caesarean delivery, over 83% in both sectors, agreed with the statement that they would have liked to have had a vaginal delivery, but many also agreed with the statement that they were happy to have had a caesarean (60% among public patients and 70% among private patients).

Among the private patients who eventually underwent an unwanted caesarean, 73% had talked to their doctor about type of delivery by the time of the second interview, but most frequently at their own rather than the doctor's initiative. Only 16% reported that the doctor had recommended a caesarean section in this conversation. Among the public patients with unwanted caesareans, only 37% reported a conversation with their doctor regarding type of delivery.

The timing of the decision to have a caesarean delivery differed between public and private patients. Table 4 shows that a much higher proportion of caesarean deliveries were decided on in advance among private than among public patients, and among scheduled caesarean sections more were decided on more than one day in advance among private patients. Similarly, among caesareans that were decided on after admission, the proportion of decisions taken less than six hours after admission was much greater among private patients than it was among public patients.

Discussion

Although the rates of caesarean section in Brazil are high, especially in the private sector, this is not a reflection of women's preferences for this type of delivery.

What is already known on this topic

In Brazil, one quarter of all women deliver in the private sector

The rate of caesarean deliveries in the private sector is extremely high (70%) and more than twice that in the public sector, where rates have recently fallen due to a new policy

Previous studies in which women were interviewed after birth showed that a substantial proportion of private patients who have caesarean sections would have preferred normal delivery

What this study adds

In two antenatal interviews, preferences regarding type of delivery were nearly identical among public and private patients and strongly favoured vaginal births

Contrary to popular belief, middle and upper class women in Brazil do not want to deliver by caesarean section

The main limitation of this study is that, to determine preferences, we had to rely on the answer to a single question (asked twice) regarding the kind of delivery a woman would like to have. Also, there is some inconsistency between preferences expressed in the antenatal interviews and satisfaction with the type of delivery the women actually had. In our view, however, satisfaction after having had a caesarean should not be regarded as an indication of preference for this type of delivery as much as a sign of acceptance of the reasons for the procedure given by the physician.²¹

The large difference in the rates of caesarean section between public and private patients was due to the greater prevalence of unwanted caesarean sections among private patients rather than to a difference in preferences regarding type of delivery. After we accounted for whether the woman had had a previous caesarean section, there was almost no difference in expressed preferences regarding type of delivery between women who received care in the private compared with the public sector. This finding contradicts the assumed belief that middle and upper class Brazilian women prefer caesarean deliveries.^{13 14}

There are at least three possible interpretations of the large discrepancy between preferences and outcomes among the private patients in this study. Firstly, many Brazilian obstetricians may believe that a caesarean section is actually safer for the newborn and more comfortable than a vaginal delivery for most women.²² Secondly, doctors may not have the opportunities or skills needed to elicit their patients' preferences and simply assume that their private patients would prefer a caesarean section.^{2 23 24} Thirdly, scheduled deliveries may be more convenient or the savings in time gained by cutting labour short may motivate obstetricians to choose a caesarean delivery for their private patients.^{1 19}

While we do not have evidence to support any of these interpretations, we are concerned that the rates of caesarean section in the private sector are above any accepted standard and are inconsistent with women's preferences. We hope that our results will encourage change in Brazil and counteract the inclination to interpret high or rising rates of caesarean section

elsewhere as evidence of demand for surgical delivery. We have shown that when women's preferences are assessed directly, demand for caesarean sections may be less than expected.

Anibal Faundes (professor of obstetrics, University of Campinas), Carolyn Westhoff (professor of obstetrics/gynaecology and public health, Columbia University), Beverly Winikoff (programme director, Reproductive Health, Population Council), and Marsden Wagner (MD, Washington, DC) read a draft of the paper and made editorial and substantive comments. Susan Rosenthal (professor of psychology and behavioural paediatrics, University of Texas Medical Branch, Galveston) helped with the interpretation.

Contributors: EB, OFL, IHOP, KH, and JEP participated in the conception and design of the study; all authors contributed to drafting the survey questionnaires; JEP wrote the protocol for the National Institute of Health; IHOP wrote the protocol for the United Nations Population Fund. IHOP, MRS, MCdeCF, and OFL supervised data collection in the respective sites (Belo Horizonte, Sao Paulo, Natal, and Porto Alegre). EB, MCdeCF, MRS, IHOP, KH, and JEP participated in the analysis and interpretation of the data. JEP took the lead role in writing the paper. IHOP and KH contributed to writing and revising the paper. EB, IHOP, and JEP are guarantors.

Funding: The study was supported by grants from the US National Institutes of Health (R01-HD33761) and the United Nations Population Fund, Brazil Office (BRA98/01).

Competing interests: None declared.

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(Accepted 13 September 2001)