INEQUITIES AND POLICY DILEMMAS IN THE COURSE OF AN UNREGULATED, SPONTANEOUS FERTILITY TRANSITION: THE CASE OF BRAZIL

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Abstract

Fertility has declined in Brazil without large-scale organized family planning programs. During the last three decades, Brazilians have relied on two contraceptive methods, the pill and female sterilization, with sterilization increasing over time. Until a new law was passed in 1997, sterilization was virtually illegal and not covered by either public or private health insurance. It was, however, frequently provided in public and private hospitals in conjunction with a cesarean section. The new law regulating sterilization provided for reimbursement by public health insurance, but placed restrictions on availability intended to reduce the use of cesareans.

This paper focuses on women's sterilization intentions during pregnancy and their experiences postpartum. In a prospective study of 1612 pregnant women carried out in four Brazilian cities, there was substantial demand for postpartum sterilization in both the private and public sectors among women who wanted no more children. However, public patients were much less likely to be sterilized than private patients. Thus, the new law may not have reduced inequities in access or, paradoxically, the incentive for unnecessary cesarean sections.

INTRODUCTION

Brazil stands out as a country that has experienced a rapid decline in fertility without what the organizer of this session referred to as "large and costly public programmes .... fostering and sustaining reproductive change". While this case certainly supports the notion that large resource intense programs are not needed to either initiate or sustain a rapid fertility transition, it nonetheless calls attention to the problems and inequities that may arise during the course of an unregulated, spontaneous transition.[1] Moreover, it serves to highlight the difficulties and dilemmas that may arise when a government undertakes to increase access to contraception and regulate its use once a transition is well underway.

During the last three decades, Brazilian couples have relied almost exclusively on just two contraceptive methods, the pill and female sterilization, with sterilization accounting for an increasing share over time. Until 1997, however, sterilization was virtually illegal and not covered by either public or private health insurance. It was, nevertheless, frequently provided in both public and private hospitals, usually in conjunction with another surgical procedure, most often a cesarean section.[2-7] This way of justifying and covering the costs of the sterilization led to marked inequality in access to sterilization between public and private patients as well as large numbers of unnecessary cesareans.[8,9] In addition to the concerns regarding unequal access and excessive cesareans, there were worries regarding other aspects of the ways that sterilization was being used and abused including its use for electoral purposes, the lack of alternative methods of contraception, the growing number of patients at fertility clinics seeking to reverse the procedure, the prevalence of side payments to doctors practicing in public hospitals, coercion, and demands by employers for certificates of sterilization.[10-16]

Beginning in the mid 1980s, in the context of re-democratization and the adoption and implementation of a new constitution, sterilization and family planning became the subject of open political debate. There were federal and state level congressional inquiries regarding sterilization, and various proposals for federal, state, and municipal laws related to family planning and sterilization were put forward. It was not until August 1997, though, that binding federal legislation regarding family planning and sterilization was finally enacted. This law (9.263/96) is the enabling legislation for Article 226, Paragraph 7 of the Constitution, which guarantees the right to family planning. It permits men and women to undergo voluntary sterilization as long as the individual is competent, is either at least age 25 or has two children, and, if married, has spousal consent. However, the law also specifies that sterilization may not be performed at the time of delivery and that there has to be a sixty-day waiting period from the time the procedure is first requested. The law authorizes the public health insurance system to reimburse clinics for sterilizations performed when these conditions are met, but only if they provide counseling on other methods of contraception beforehand. It also provides penalties for performing a sterilization that does not meet these conditions, failing to report sterilizations performed, and for a series of possible abuses, such as requiring certification of sterilization.

One of the more controversial elements of the law is the prohibition against performing a sterilization at the time of delivery. Just what this provision means has been subject to varying interpretations. The administrative guidelines (Portaria 144) issued by the Ministry of Health specified that sterilizations could not be performed until 42 days after the delivery, except in cases of medical necessity (most likely

occasioned by multiple cesarean births). However, medical practice in Brazil is regulated by a series of state level medical councils that may, in turn, refer cases to a national medical council. At the present time, at least one state medical council (Sao Paulo) has issued an opinion stating that doctors are in compliance with the law if they perform a sterilization immediately following either a vaginal or a cesarean birth as long as the patient requested the procedure sixty days in advance.[17]

There are two aspects of this legislation that are relevant to the impact it might be expected to have on reproductive behavior. The first is that it was seemingly designed with three different goals in mind. These are to: (1) reduce the differential access to sterilization between rich (private) and poor (public) patients; (2) ensure that individuals opting for sterilization had made an informed choice; and (3) reduce the number of unnecessary cesareans. It may be the case that actions or stipulations designed to advance the second and third goals may serve to impede progress on the first. The other aspect is that the implementation of such a law in the Brazilian legal and governmental system is a complex and somewhat tenuous process. The health system is now extremely decentralized, funding is scarce, and lines of authority are blurred. It would be unrealistic to expect that, within a short time after its enactment, the law would have had a large impact on medical practice. Moreover, while the law sets an ethical standard to which all doctors are subject, it has a more direct impact on the public sector since it directly affects the reimbursement by public, but not private insurance.

In this paper we report on the results of a prospective survey undertaken in 1998 and 1999 that sought to measure both the demand for, and the availability of postpartum sterilization. While the 1997 law ostensibly prohibited postpartum sterilization, this procedure had been widely practiced in the population. This raises the question as to whether the new law is in conflict with women's preferences. We will address this question, and also evaluate how successful women in the public and private sectors were in realizing their intentions to get a postpartum sterilization. Finally, we consider the implications of our results for policy, and suggest how the current guidelines for implementing the law might be modified so as to better achieve all three of the goals it was intended to meet.

METHODS

Participants and Procedures

To assess demand for sterilization among women in Brazil's private and public health care sectors, as well as the degree to which this demand is being met under the provisions of the new family planning law, we undertook a prospective study of women giving birth in four cities in Brazil--the metropolitan areas of Porto Alegre, Belo Horizonte and Natal, and the municipality of Sao Paulo. These sites are representative of the different situations existing in Brazil regarding sterilization and its relation to cesarean deliveries. We recruited 1,612 women aged 18 to 40 with a confirmed pregnancy who intended to deliver in either a public or a private hospital in one of the four cities. All women signed informed consent forms. We excluded specialized populations, such as high risk, assisted reproduction, and HIV-positive patients. Women had to be fewer than five months or 22 weeks pregnant and have had no more than two prenatal visits before the first interview.

The sample was stratified both by sector of care and birth order. It favored by 2:1 women who delivered in public hospitals. In the public sector, we recruited more multiparas than in the private sector due to the difference in fertility between the two populations. In each city, we selected a representative list of ten hospitals with maternity services that served either public or private patients, and recruited women who planned to deliver in these hospitals. The initial interviews took place between April1998 and June 1999.

We interviewed each subject face-to-face three times: at the time of recruitment, one month prior to her due date, and one month after the due date. We usually conducted the first interview in a health care facility while the second prenatal interview and the postpartum interview were usually in the woman's home. Reasons for loss of subjects to follow-up included women not at address given, delivery before the second interview, lost pregnancies, and neonatal death.

In the two interviews that took place during pregnancy, we asked subjects about their future childbearing and contraceptive intentions. In the postpartum interview, we asked women whether they were sterilized and, if not, whether they would like to obtain a sterilization in the future. We also asked those women who expressed a desire to be sterilized, but who had not yet done so, if they would like to have been sterilized before they were released from the hospital following delivery. Women who responded positively to this question were asked whether they had made arrangements to be sterilized at the time of delivery, and if so, what had gone wrong. We also asked if she had made any prior attempt to obtain a sterilization. Finally, for those women who had been sterilized, we asked a series of questions to measure their satisfaction or regret regarding the procedure.

Data analysis

We classified subjects who completed all three interviews as public or private patients depending on how their delivery was paid for. If the government health insurance program (SUS) paid for the delivery, subjects were considered public patients. All others, the vast majority of whom used private insurance to pay for their delivery, were classified as private patients. For subjects lost to follow-up, we based the classification on the clinic where the individual received prenatal care (94% correspondence in completed sample). After looking at intentions regarding future childbearing in the first two interviews, we restrict much of the remaining analysis to women who declared in both antenatal interviews that they did not wish to have any more children, and who met the age/parity criteria for eligibility for sterilization under the new law. In the results regarding satisfaction and regret, however, we examine the responses for all respondents who were sterilized. In the analysis, Pearson Chi Squared and t tests along with logistic regression were used to assess statistical significance, and we used both SPSS and STATA.

RESULTS

Of the 1,612 women we recruited into the study (519 private patients and 1093 public patients), 1,136 women completed all three interviews. Of the 476 women lost to follow-up, 100 were private patients and 376 were public patients, therefore 80.5% of private patients completed all three interviews while 66.2% of public patients did. Most of the loss to follow-up (405 cases) occurred between the first and second interviews.

Comparing the final sample and those lost to follow-up for each of the sectors shows some differences among the public sector respondents but none among those from the private sector. The final sample of public sector respondents was, on average, more educated and had fewer previous births (Table 1). There was no statistically significant difference between the two, however, with respect to age, the proportion in a marital union, desire for additional children or intent to be sterilized. There were no important differences in baseline characteristics between the private patients in the final sample and those lost to follow-up. Compared to the final sample public patients, the private patients are older, of lower parity, far more educated, more likely to be in union, more likely to want more children, and less likely to intend to be sterilized. Note, however, that by design, the private sample included a larger proportion of primiparas than did the public sector sample (54% versus 42%).

According to the two interviews done during pregnancy, the proportion of women who wish to limit their future childbearing is high among both private and public patients, and exhibits similar variation by parity. Table 2 shows the proportion of respondents who said they wanted no more children in both interviews, as well as the proportion who said they wanted no more in one but not both of the antenatal interviews. The former increases from a low figure for women expecting their first child, to much higher proportions among women expecting their second child, and to a very high proportion among women expecting a third or higher order birth. The pattern is almost identical in the two sectors. The proportion of women who declared they wanted no more children in one interview but who were unsure or wanted to have another child in the other interview was higher among lower parity respondents in the private sector, but virtually the same among mothers expecting a third or higher-order child.

Table 3 shows the distribution of contraceptive methods that women said they intended to use to prevent a future pregnancy. The respondents included in this tabulation (and in Figures 1 and 2 and Table 4 below) are only those who twice declared that they wanted no more children and who met the age and parity restrictions for sterilization. We show the distributions from both the first and second antenatal interviews by sector of care. The most prominent method in both sectors and in both interviews is female sterilization which accounts for slightly less than half of all responses in the private sector, and slightly more than half in the public sector. The other more frequently mentioned methods are the pill, the IUD, and vasectomy. The distributions are quite consistent between the two interviews, although there is an increase in the proportion of public sector respondents who said that they were intending to use the IUD that offsets a decline in the proportion intending to be sterilized.

Figure 1 is a more detailed representation of the demand for sterilization. It shows the proportion of women who at each antenatal interview intended to be sterilized at the time of delivery as well as the

proportion who intended to be sterilized later, according to parity. As parity increases, greater proportions of women intend to be sterilized; the jumps are steep and the proportions are very similar in both sectors. Moreover, the large majority of respondents in both sectors intended to have a postpartum rather than an interval sterilization, at both antenatal interviews. The only noticeable shift between the two interviews is in the proportion of higher parity women who intended to have a postpartum sterilization, which declines between the first and second interview, especially in the public sector.

Figure 2 shows the very large difference between the two sectors in the proportion of women seeking sterilization who had actually been sterilized by the time of the postpartum interview. The proportion obtaining a sterilization among women who stated that they intended to have a postpartum procedure in the second interview was 69% in the private sector but only 33% in the public sector. This gap was due in part to the differing cesarean rate, but the proportion sterilized also varies between the private and public sectors among women having a cesarean delivery (72% versus 56%). Almost all sterilized women had the procedure performed during a cesarean (73 out of 80). A logistic regression that adjusted for type of delivery, parity, and previous cesarean births confirmed the statistical significance of the difference in the probability of obtaining a sterilization between the private and public sectors (odds ratio: 0.3625776; 95% confidence interval: 0.1584939 to 0.8294487). Six of the seven postpartum sterilizations that followed a vaginal delivery were performed in the Northeast (Natal).

Among women who had twice declared that they wanted no more children and who met the legal age and parity requirements for sterilization, but who were still fertile at the time of the postpartum interview, a large proportion said that they would like to be sterilized in the future. Moreover, most of these respondents declared that they would like to have been sterilized before leaving the hospital after their last delivery. Table 4 shows the distribution of private and public sector respondents according to their status and preferences with respect to sterilization, distinguishing between respondents who had three or more children and those who had two or fewer. In both parity groups, the proportion of respondents already sterilized is much greater in the private sector, and the proportion that would have preferred a postpartum sterilization is much higher in the public sector. Indeed, more than half the higher parity public sector respondents said that they would liked to have been sterilized while in the hospital for the last delivery. Among these respondents, 22% (19 of 86) had made arrangements for a postpartum sterilization that fell through, and 31% (27 of 86) had tried to obtain a sterilization before becoming pregnant with their last child.

By the time of the postpartum interview, most respondents who said in the antenatal interviews that they intended to be sterilized were either already sterilized, or still wanted a sterilization. Some, however, appear to have changed their minds. Among the private patients who said they intended to be sterilized in the second antenatal interview, 16% (13 of 80) did not express a desire to be sterilized in the postpartum interview. This proportion was 11% (20 of 175) among public patients. The women who were already sterilized, for the most part, did not express reservations in the postpartum interview about having undergone the procedure. Two (of 59) sterilized private patients expressed regret about the procedure, while 57 said, if given the chance, they would again choose to be sterilized. None of the sterilized public patients agreed that they regretted the operation, 36 of 39 said they would again choose

sterilization, and two said they would preferred to have had the operation at a later time. On the other hand, nine private patients and 12 public patients declared that they would have preferred to have had the operation earlier, before becoming pregnant with their last child.

DISCUSSION

Since the follow-up period in this study only extended one month past delivery, our results do not provide a definitive answer with respect to the proportion of women wanting a sterilization who will eventually obtain one. Nor do they provide an adequate basis for assessing eventual regret, or evaluating the new arrangements for contraceptive counseling and the reimbursement of interval sterilizations in public sector installations. However, the results do provide an assessment of the demand for postpartum sterilization among private and public patients, and the degree to which this demand was being met during late 1998 and 1999. These issues have a bearing on the new family planning law and its implementation since one of the central provisions of the law was to make postpartum sterilization illegal except in cases of medical emergency.

The first finding of this study is that there is substantial demand for female sterilization in general and for postpartum sterilization in particular among both private and public patients. While some women who said that they were intending to be sterilized in the antenatal interviews said they were intending to be operated on some time after the delivery, the large majority said they intended to be sterilized during or immediately following their delivery. The second source of information on this point comes from the question that was asked in the postpartum interview of women who had not yet been sterilized but who wanted to be sterilized in the future. Here too, in both sectors, the large majority of respondents who wanted to be sterilized said they would have liked to have been sterilized while they were still in the hospital for their last delivery. Indeed, at one month postpartum, the demand for postpartum sterilization as assessed through this question seems to be even larger than it was in the second antenatal interview. This finding suggests that responses to the antenatal interviews (particularly the second interview) regarding intentions may have been tempered by expectations as to what was possible.

There are other indications in the data regarding the stability of the demand for sterilization. One month following delivery, only a small percentage of women who said they intended to be sterilized in the antenatal interviews had changed their mind. Of those who were not sterilized, most still wanted to be. Of those who had been sterilized, the vast majority expressed satisfaction with their decision.

The second main finding concerns the proportion of women who intended to have a postpartum sterilization who were actually able to obtain one, and the large differential that exists between private and public patients in this regard. Not all private patients who intended to be sterilized postpartum actually had the procedure, but the percentage succeeding, 69%, was more than twice as large as it was in the public sector. The difficulty that public patients had in obtaining a sterilization led to a striking difference in the status of public and private patients one month after delivery. Whereas most of the private patients who wanted no more children had either been sterilized or did not want to be sterilized, nearly half of all public patients were frustrated in their desire to be sterilized, and wished they had had a postpartum procedure.

At the time this study was conducted, a little less than two years after the new law had been passed and well before it had been fully implemented, the situation with respect to postpartum sterilization could be summarized as follows. There was substantial demand for the procedure. With the partial exception of Natal, the only way to obtain one was by way of a cesarean delivery; and a woman was far more likely to be sterilized in the private sector than she was in the public sector. It is difficult to assess the degree to which this situation was influenced by the law, and how it may have differed, if at all, from the situation that existed throughout the bulk of the preceding decade. While the law enhanced the status of interval sterilization, it provided sanctions against postpartum sterilization that may have made doctors in both sectors reluctant to perform these procedures. On the other hand, in 1999, the law may not yet have had much effect on procedures and practices, and there are a number of earlier studies indicating the difficulties that Brazilian women have faced obtaining sterilizations in the public sector.[16,18]

Regardless of the influence of the new law in producing the inequities in access to postpartum sterilization revealed in this study, our results point to some of the difficulties or dilemmas inherent in this legislation. To begin with, it restricts access to a contraceptive or reproductive option that woman say they want to avail themselves of. The reasons for prohibiting postpartum procedures except in cases of medical necessity were to guarantee informed choice, as well as to reduce the number of unnecessary cesarean sections. However, until there is easy, widespread access to interval sterilization in the public sector, there remains a strong incentive for women desiring a sterilization to deliver by cesarean, and if need be, in the private sector. Secondly, the expectation that women have difficulty making good decisions about future childbearing during pregnancy, and may later come to regret a decision to be sterilized taken during pregnancy appears to be exaggerated. In our sample, although the questions were asked only a short time after delivery, there is little regret, and most sterilized respondents appear to be satisfied with their decision to be sterilized. Moreover, while there was some variation in respondents' intentions regarding sterilization across the three interviews, at least some of that variation appears to have resulted from increasing pessimism regarding their prospects of actually obtaining the procedure.

Given the evident demand for postpartum sterilization, the stark contrast in access revealed by this study, and the accumulating evidence pointing to persisting limitations on the availability of interval sterilization in the public sector,[19] we suggest that arrangements for implementing the new law be modified. There should be allowance for postpartum procedures while retaining the stipulations that the request be made sixty days in advance, and that there be counseling regarding alternative methods of

contraception. Even if this suggestion were adopted, it is likely that public patients would still have some difficulty obtaining the procedures they had planned on just as they do in many other settings.[20] Permitting postpartum procedures would, however, constitute an important step toward reducing the difference in access between the two sectors, and would diminish an important incentive for having a cesarean delivery.

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

	Sector					
	Private			Public		
	Final sample (n=419)	**Lost to follow-up** (n=100)	**p**[1]	**Final sample** (n=717)	**Lost to follow-up** (n=376)	**p**[1]
Age (years)	28.7	28.3	0.569	25.3	25.4	0.919
Number of previous deliveries	0.60	0.56	0.630	0.95	1.14	0.016
Education (years)	11.0	11.1	0.730	7.62	6.64	0.000
Married/in union (%)	89.2	88.0	0.771	83.1	85.6	0.272
Wants no more children (%)	49.2	48.0	.834	61.6	66.2	0.136
Expressed intention to be sterilized at first antenatal interview (%)	20.5	21.0	.916	29.4	31.6	0.447

[1] Based on independent-samples t test (2-tailed, equal variances not assumed) and Pearson chi-squared.

Table 2. Proportion of respondents who intend to limit future childbearing, by parity and sector **(%)**

	Sector					
	First birth		**Second birth**		**Third or higher order birth**	
	Private (n=226)	Public (n=310)	**Private** (n=149)	Public (n=232)	Private (n=44)	**Public** (n=175)
Expressed intention for no more children in both antenatal interviews	20.3	18.1	71.8	67.7	93.2	92.0
Wanted no more children in at least one antenatal interview	22.6	11.9	12.1	19.0	4.5	4.6

Table 3. Distribution of respondents according to the contraceptive method they intend to use to limit childbearing, by interview and sector[1] (%)

	Sector			
	First antenatal interview		Second antenatal interview	
	Private (n=178)	**Public** (n=337)	**Private** (n=178)	**Public** (n=336)
Sterilization	46.1	58.2	44.9	52.1
Pill	16.3	14.0	13.5	16.7
IUD	7.9	7.4	10.1	10.1
Rhythm	1.7	0.6	1.1	0.3
Injectables	1.1	3.9	1.7	4.5
Condom	1.7	2.4	3.9	2.7
Vasectomy	11.8	3.3	11.2	5.4
Other	4.5	5.3	7.3	3.9
Nothing/doesn't know	9.0	5.0	6.2	4.5

[1] Includes only those women who twice declared twice declared that they wanted no more children and who met the age and parity requirements for sterilization.

Table 4. Distribution of respondents according to status and preferences regarding sterilization at the postpartum interview, by parity and sector[1] (%)

	Sector					
	Low parity[2]		High parity[3]		Total	
	Private (n=137)	Public (n=176)	Private (n=41)	Public (n=161)	Private (n=178)	Public (n=337)
Sterilized postpartum	25.6	8.0	56.1	16.8	32.6	12.2
Wanted to be sterilized before leaving hospital	14.6	42.1	14.6	53.4	14.6	47.5
Wants to be sterilized in the future[4]	9.5	9.7	4.9	12.4	8.4	11.0
Does not want to be sterilized	50.4	40.3	24.4	17.4	44.4	29.4

[1] Includes only those women who twice declared twice declared that they wanted no more children and who met the age and parity requirements for sterilization.
[2] Low parity=first or second birth
[3] High parity=third or higher-order birth.
[4] And did not wish to be sterilized before leaving hospital.

Figure 1. Proportion of women who intended to be sterilized, according to antenatal interview, parity and sector

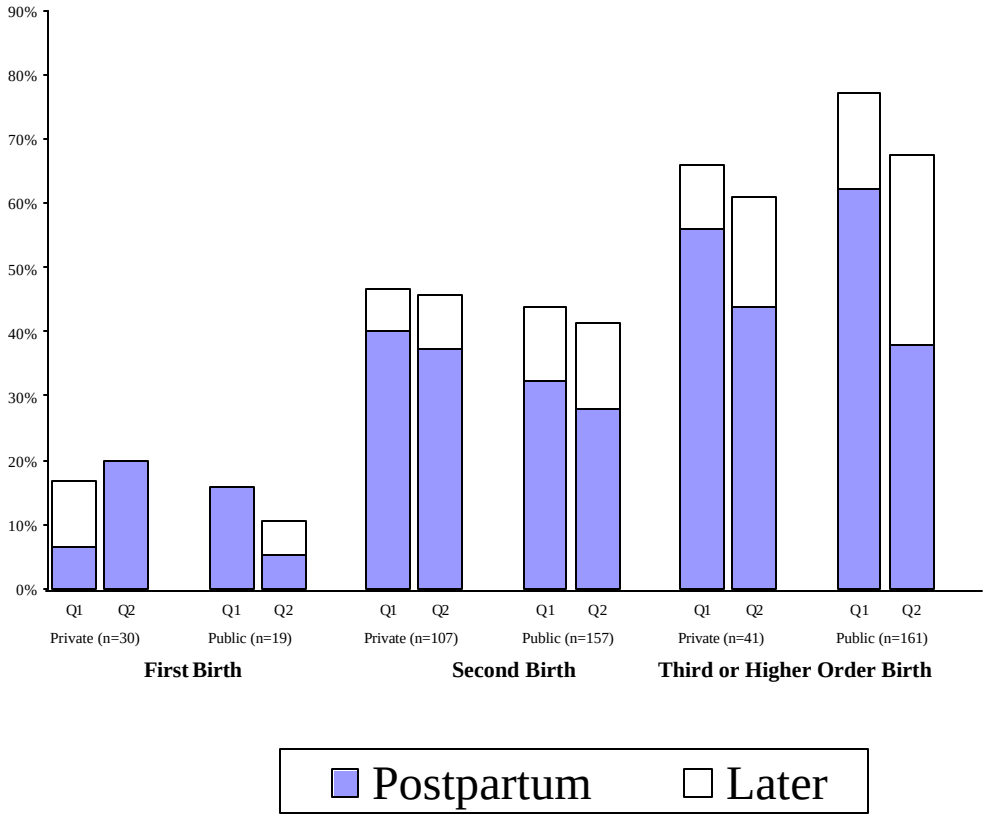

Figure 2. Proportion of women sterilized at time of postpartum interview among those who had intended to be sterilized postpartum, by sector