

research and studies

The Second Time Around: Parity and Birth Experience

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Both patients and professionals generally believe that the easier obstetrical experience of the multipara also characterizes her subjective experiences. Among 249 women, we found that the multiparas had more physical discomfort, but fewer worries, during pregnancy, and that they worried about labor more, but prepared for birth less, than did the primiparas. Although the multiparas had obstetrically easier labors, they received less support from their husbands during labor and there was no significant parity difference in the subjective pain or enjoyment. After birth, the multiparas generally sought less contact with their babies during the hospital stay than did the primiparas. The sample was representative of urban, middle class women. Implications regarding prepared versus nonprepared childbirth were also noted. The findings challenge the conventional emphasis on supportive care mainly for primiparas.

Both health professionals and their maternity patients generally believe that childbirth is harder the first time and becomes much easier the second time around. That primiparas have longer labors and more complicated deliveries has been documented, and it is generally assumed that the easier obstetrical experience of the multipara also characterized her subjective experience. As one popular textbook of obstetric nursing puts it,

In a way [the multipara] may be likened to a motorist who goes over a usually traveled road with confidence, in contrast to one traveling a strange and new road with caution and apprehension.¹

These beliefs encourage nurses and physicians to concentrate their efforts on primiparas rather than on multiparas, although the psychosocial effects of parity have never been subjected to systematic investigation. In this research, we examined the impact of parity on both the obstetrical and the psychosocial experience of labor and delivery and on mothering behavior during the

hospital stay, with data controlled statistically for prepared versus nonprepared childbirth.

Literature Review

Friedman² found that the average multiparous labor lasts eight hours, while the average labor of primiparas is 15 hours long. Most of this difference is due to differences in the duration of the latent phase, but the active and deceleration phases, as well as the second stage, are also shorter in multiparas. He found no further significant differences. Earlier investigators who focused on aspects of labor other than parity reported less analgesia and anesthesia, less blood loss, and more spontaneous deliveries for multiparas than for primiparas.³⁻⁶

Investigations of the psychosocial effects of parity are few. In a 1965 study of women who took Lamaze birth preparation classes, multiparas reported less pain at all stages except transition, but the differences were fairly small.⁷ In 1974 other researchers found parity relating to length of labor but not to delivery anesthesia or three measures of the pain women

experienced.⁸ Two studies reported in 1970 and 1971 indicated that primiparas take longer to bottle feed their babies and give them less formula during their hospital stays than do multiparas or nurses.^{9,10}

MATERIALS AND METHODS

The study site was a large teaching hospital located in a major metropolitan area. Analysis of the effects of birth preparation classes in "normal" childbirth was also a primary research objective and dictated the sampling criteria. To insure sufficient numbers of women of comparable socioeconomic status who both did and did not attend birth preparation classes, we first selected married private patients. Previous research had demonstrated that women who prepared for childbirth were disproportionately married, of higher socioeconomic status, and much less likely to be hospital clinic patients.³⁻⁸ (Private patients comprised 82% of our sample compared to 48% of the total hospital population, and 38% of our sample attended Lamaze classes.) We also used hospital charts to avoid selecting women who were not married or had cesarean sections and to exclude women whose babies were seriously ill or had died. Except for these restrictions, we randomly chose from patients on the maternity floors. Our sample of 118 primiparas and 131 multiparas was of relatively high socioeconomic status (43% of the total, or 45% of primiparas and 40% of multiparas, had at least a college degree or a husband in a professional occupation), had a high proportion (47%) of women having their first baby, and was slightly older (mean age, 26 years) than samples in previous studies.^{2,8} Because our sample did not represent a cross-section of women delivering babies, we cannot assume that our findings can be generalized to the entire population. However, the sample was representative of urban, middle class women giving birth in a large metropolitan hospital.

As anticipated, multiparas were older than primiparas (mean ages, respectively: 27.7 and 24.5 yrs., $P < .01$). There was no significant differ-

ence between primiparas and multiparas in socioeconomic status. (We consistently refer to women having their first babies as primiparas throughout the text and tables to avoid the confusion of different terms for the same group. Although some variables refer to pregnancy experience, when they were nulliparas, all measurements of variables were made after delivery.)

We interviewed the 249 women about their preparation and childbirth experience in the hospital one to three days postpartum. A self-administered questionnaire supplemented information on social characteristics, relevant attitudes, and each woman's overall assessment of her degree of pain and of pleasure experienced in labor. Just over one-fifth (23%) of the interviewees failed to complete a questionnaire, so items taken from the questionnaire had a smaller number of cases. Data on items in the interview and medical records were, for the most part, complete. From hospital records, we ascertained levels and type of medication, complications, and other obstetrical factors, and basic demographic information.

Please refer to the Appendix for list of items from the interview, questionnaire, and medical records used to measure variables.

RESULTS

Data were compiled to examine the effects of parity on three areas: the pregnancy experience; the birth itself, including both obstetrical and psychosocial factors; and interactions with the baby during the immediate postpartum period.

Pregnancy Experience

Indicators of the pregnancy experience included several measures of health before and during pregnancy, worries about problems not related to the physical process of pregnancy, preparation for birth, and preparation of the woman and her husband for childcare.

Multiparas reported very good or excellent health before pregnancy only slightly less often than primiparas (Table 1). Both groups felt less well during pregnancy, but multi-

Table 1. Parity and Pregnancy Experience, in Percent Reporting the Item

Item	Primiparas (n = 118)	Multiparas (n = 131)
Health excellent or very good before pregnancy	77	72
Felt excellent or very good during pregnancy	63	40*
No physical complaints during pregnancy	31	26
Gained more than thirty pounds	25	22
No serious worries during pregnancy	30	50*
Took Lamaze classes	50	28*
Got childbirth information from six or more sources	38	28**
Did nothing to prepare for childbirth	8	21**
Did three or more things to prepare for baby care	28	30
Husband did one or more things to prepare for baby care	52	40**

* Significant difference, $P < .01$.

** Significant difference, $P < .05$.

paras were substantially less likely to feel very good during pregnancy than primiparas. This difference in overall well-being cannot be attributed to specific complaints or excessive weight gain. When asked whether they suffered "quite a bit" from a list of eight common complaints of pregnancy, only slightly fewer multiparas than primiparas had no complaints; and only a quarter of each group gained more than 30 pounds. The only specific physical complaint mentioned more frequently by multiparas (40%) than primiparas (25%) was fatigue, so the lower sense of physical well-being for multiparas may have been due mainly to heavier home burdens, not to the difference in parity. Other children's demands probably prevented them from getting as much rest as primiparas, even when the latter were employed full-time.

A number of recent studies have taken the view that pregnancy is a crisis in a woman's life.¹¹⁻¹³ Her social relations, her body, and her feelings are all undergoing tremendous changes. We asked about 11 different worries, such as financial problems and whether the baby was wanted, and included space for women to write in any other problems they encountered. Half of the multiparas, but more than two-thirds of the primiparas, reported some serious worries during pregnancy. Worries more likely to bother primiparas than multiparas included taking care of the baby, how her husband felt toward her, being

able to continue her own activities after birth, and gaining weight. The addition of another child appeared to be far less disruptive and worrying than the initial change from childless to mother. The woman's basic pattern of accommodating motherhood with her marriage relations and her other activities has already been established.

Surprisingly, the experienced multiparas were more likely to worry about what childbirth would be like. Out of all 11 worries, only this one was checked more often by multiparas. This difference cannot be accounted for by less preparation for birth among the multiparas: 48% of the 31 prepared and 45% of the 69 unprepared multiparas worried about birth, in contrast to only 16% of the 51 and 9% of the 45 unprepared primiparas ($P < .01$). We can do no more than speculate about possible explanations. Primiparas may have so many other worries about pregnancy and impending motherhood that any worries about the birth itself seem relatively minor. It may also be easier for primiparas to deal with the impending birth by repressing any fears they may have. Multiparas, with at least one birth experience behind them, cannot so easily ignore any fears they have. Perhaps the experience of childbirth and subsequent discussion with other mothers acquaints women with more details of potential difficulties, increasing rather than decreasing fear. To return to the earlier analogy, one may be more

Table 2. Parity and Obstetrical Factors

	Primiparas (n = 118)	Multiparas (n = 131)
Duration of Labor		
Total labor, mean hours (S.D.)	14.2 (8.2)	8.8* (5.8)
First stage, mean hours (S.D.)	13.3 (7.5)	8.4* (5.2)
Second stage, mean minutes (S.D.)	62 (101)	25* (29)
Third stage, mean minutes (S.D.)	5 (3)	7 (9)
Dilation last half hour, mean cms. (S.D.)	1.9 (1.1)	2.8* (1.4)
Per Cent with		
Any labor complications	45	20*
Severe labor complications	15	5*
No labor analgesia	34	48**
Delivery with nothing, local or pudendal only ^a	73	82
Spontaneous delivery ^a	50	81*
Estimated blood loss \leq 200 ml. ^a	43	65*
No lacerations ^a	60	83*
Apgar score 9 or 10 at one minute	80	83
No resuscitation	92	96
Time to first cry < 60 seconds	87	93

^a Cesarean sections not included (16 cases)

* Significant difference, $P < .01$

** Significant difference, $P < .05$

apprehensive about driving a familiar road known to be hazardous.

Primiparas consistently did more to prepare for childbirth than did multiparas (Table 1). The primiparas were more likely to have had Lamaze-type birth preparation classes, partly a reflection of the relatively recent popularity of such courses. They were also likely to use more sources of information about birth, such as physicians, literature, and relatives, and were far less likely to do nothing at all. These findings are more surprising in view of the fact that we included what multiparas had done for previous births in addition to preparation for this birth. (Lamaze childbirth classes for one birth appeared to prepare women equally well for subsequent births. The most dramatic effects of preparation were on perceived pain and enjoyment, and multiparas who had had classes for a prior birth, but not for the current birth, had virtually the same values on these variables as multiparas who prepared for the current birth, i.e., 10.3 vs. 11.0 and 14.9 vs. 15.2.) Our results suggest that women prepare more for the first birth than for subsequent births and that there is greater preparation for childbirth with each succeeding cohort of primiparas.

No trend of increasing preparation for baby care was evident. We asked about four possible preparations: reading about baby care, reading about breastfeeding, attending classes on baby care, and seeking advice from experienced parents or taking care of someone else's baby. Primiparas had not prepared more for child care than multiparas (again, including preparations for previous births). Husbands of primiparas were somewhat more likely to have done things to prepare for baby care than husbands of multiparas, perhaps reflecting a slight trend of greater involvement of fathers in childcare.

Birth Experience

We examined the effects of parity on a variety of standard obstetrical indicators such as length of labor, type of delivery, and amounts of analgesia and anesthesia, as well as such subjective measures as the woman's social support, pain, and enjoyment during labor.

The much higher proportion of primiparas who had attended Lamaze or similar classes had to be considered in the examination of parity effects on birth experiences. Other research¹² and our own previous analyses of these data¹⁴ show that Lamaze preparation has a sig-

nificant positive impact on at least the psychosocial aspects of a woman's birth experience. It is possible that positive effects of higher parity on the birth experience will be obscured by the negative effects of less preparation for birth among higher parity women. In order to assess the intrinsic impact of parity, it was necessary to control statistically for preparation.

Table 2 shows the effect of parity on obstetrical measures of the ease of labor and delivery. For each variable, our results confirmed previous findings that multiparas have obstetrically easier labors. Multiparas had shorter labors, dilated more rapidly, had fewer labor complications, used less analgesia and anesthesia, and had more spontaneous deliveries, less blood loss, and fewer lacerations. Multiparas also did better for three indicators of the baby's condition: Apgar score at one minute, need for neonatal resuscitation, and time to first cry. Controlling for level of preparation did not reduce or change these effects of parity (Table 3).

On the basis of obstetrical factors, we expected multiparas to have a generally easier time in labor and delivery. However, multiparas received less support from people they felt close to during labor. A third of all multiparas, but only 14% of primiparas, were alone except for the hospital staff during labor and delivery (Table 4). A higher proportion of primiparas than multiparas had their husbands with them throughout both labor and delivery. This greater support during labor was due largely to the higher proportion of primiparas who attended Lamaze classes, where husbands were encouraged to be with their wives and to actively help them throughout labor and delivery. With level of preparation controlled, there was essentially no difference in the amount of social support received by prepared multiparas and primiparas (Table 5). However, among unprepared women the parity difference remained; the multiparas were more likely to be alone during labor than the primiparas. Previous studies have found social support during la-

bor very important in shaping a woman's subjective birth experience.^{14,15}

We compared the subjective birth experiences of primiparas and multiparas using three different measures. When interviewed, all women were initially asked what stood out most in their minds when they looked back on their labors and deliveries. We also gave each woman a score on a Pain Index and an Enjoyment Index, based on a combination of items (see Appendix).

There was essentially no difference between multiparas and primiparas in positive feelings or in pain, and multiparas had only slightly less enjoyment than primiparas (Table 4). Controlling for level of preparation, there were no statistically significant effects of parity in the six possible relationships (Table 5). Among prepared women, the multiparas were more likely than the primiparas to mention a positive feeling when discussing what stood out most about their labor, but the difference failed to meet the statistical significance test.

Parity had a large and consistently favorable effect on all the obstetrical aspects of labor we examined. However, the unprepared multiparous women had less social support during labor and delivery. This may explain why there was no difference in enjoyment or pain between unprepared primiparas and multiparas. There was some evidence for the hypothesis that prepared multiparas have a slightly better subjective birth experience than prepared primiparas. But it is important to note that the effect of parity on social support and on women's subjective birth experiences was quite small compared to other factors such as preparation.

Mothering in the Hospital

The recent literature has emphasized the importance of the immediate postpartum period for establishing close mother-infant bonds.^{16,19} We had several indicators of mothering during the hospital stay: whether the woman wanted the family plan (a modified rooming-in arrange-

Table 3. Parity and Obstetrical Factors, Controlling for Level of Preparation

	Nonprepared		Prepared	
	Primi-paras (n = 59)	Multi-paras (n = 95)	Primi-paras (n = 59)	Multi-paras (n = 36)
Duration of Labor				
Total labor, mean hours	14.0	9.0*	14.2	8.1*
First stage, mean minutes	127	87*	136	78*
Second stage, mean minutes	58	22*	68	33*
Third stage, mean minutes	5	7	5	6
Dilation last half hour, mean cm	3.0	4.1*	3.0	4.1*
Per Cent with				
Any labor complications	46	21*	44	17*
Severe labor complications	15	6**	15	3**
No labor analgesia	34	43	34	64*
Delivery with nothing, local or pudendal ^a	65	78	82	91
Spontaneous delivery ^a	46	81*	46	81*
Estimated blood loss ≤ 200 ml. ^a	45	64**	40	68*
No lacerations ^a	62	82*	57	86*
Apgar score 9 or 10 at one minute				
No resuscitation	89	98**	92	91
Time to first cry < 60 sec.	77	94*	93	91

^a Cesarean sections not included

* Significant difference, $P < .01$

** Significant difference, $P < .05$

ment), whether she breastfed, and the number of different types of interactions mothers and fathers had with their baby. Unfortunately, we did not have any measures of the quality of interaction between mother and infant to supplement these essentially quantitative indicators.

Primiparas were far more likely to want the family plan. They were slightly more likely to breastfeed and, probably reflecting this difference, to report difficulties in feeding the baby. Slightly more primiparas than multiparas interacted with their babies in at least seven of the ways measured, and their husbands were very much more likely to have had at least some interaction with the new baby. (See Table 6.)

An interesting pattern in the relationship between parity and mother-

ing emerged when preparation was controlled (see Table 7). Wanting the family plan was strongly associated with preparation. Most of the parity difference in wanting the family plan occurred among the non-prepared; the overall 30% difference diminished to 12% among the prepared mothers and increased to 36% among the unprepared. Both primiparous and multiparous women who had sought more active participation in labor also wanted more interaction with their babies right after birth. Among women who had not sought more active participation in childbirth, first-time mothers were substantially more eager to be with their babies. Thus, experienced mothers may want more rest during their hospital stay and may also feel they do not need to practice their mothering skills.

Table 4. Parity and Social Support, Pain and Enjoyment During Labor

	Primiparas (n = 118)	Multiparas (n = 131)
Per cent alone in labor and delivery	14	34 *
Per cent husband helped in labor and delivery	42	32
Per cent mentioning positive feelings about labor	38	36
Mean Pain Index	12.4	12.8
Mean Enjoyment Index	13.0	12.1

* Significant difference, $P < .01$

Table 5. Parity, Social Support, and Pain and Enjoyment Controlling for Preparation

	Nonprepared		Prepared	
	Primi- paras (n = 59)	Multi- paras (n = 95)	Primi- paras (n = 59)	Multi- paras (n = 36)
Per cent alone in labor and delivery	27	45*	0	6
Per cent husband helped in labor and delivery	5	13	80	83
Per cent mentioning positive feelings about labor	22	23	54	71
Mean Pain Index	13.4	13.6	11.4	10.7
Mean Enjoyment Index	11.3	10.9	14.7	15.1

* Significant difference, $P < .05$

Table 6. Parity and Mothering After Delivery, in Percent Reporting the Item

Item	Primiparas (n = 97) ^a	Multiparas (n = 101) ^a
Wanted family plan	75	45*
Breastfeeding	47	41
Having difficulties feeding baby	30	21
Doing seven or more things with baby	32	21
Husband doing at least one thing with baby	72	49*

^a Missing data for these questionnaire items account for smaller Ns.

* Significant difference, $P < .01$

Women who had taken Lamaze classes were also much more likely to breastfeed. The initial small negative relationship between parity and nursing became a small positive one within the prepared group, where 74% of the multiparas, compared to only 68% of the primiparas, were breastfeeding. There was no relationship between parity and breastfeeding among unprepared women, only a quarter of whom breastfed. Difficulties feeding the baby appeared to relate both to breastfeeding and to parity. Nearly 40% of the prepared primiparas, mostly breast-

feeding, reported the least difficulties in feeding of any group. The previous experience of these mothers seemed to make establishment of breastfeeding easier. Among the heavily bottle-feeding unprepared group, the prior experience of multiparas did not seem to reduce feeding problems. Thoman, *et al.*,^{9,10} did find that experienced mothers bottle-fed their babies more quickly and gave them more formula despite shorter feeding time. However, longer feeding time would not necessarily be defined by new mothers as a feeding problem. The higher incidence of

feeding problems among breastfeeding mothers, especially among primiparas, may indicate a need for greater staff support of nursing primiparas and of breastfeeding generally during the early postpartum period.

Because most prepared mothers were on the family plan, both the mothers and their husbands had a greater number of interactions with their babies. Within the prepared group, primiparas had a higher number of interactions with their babies than did multiparas. There was no difference by parity among the unprepared mothers. In both prepared and unprepared groups, new fathers were more likely to interact with their infants than were experienced fathers (at least some of whom might have been staying at home with older children).

It is difficult to assess the impact of parity on mothering behavior. There is a tendency for new mothers and their husbands to be more active in seeking interactions with their newborn. New mothers may need more contact with their babies in order to establish their maternal responses. New mothers may also want to practice baby care in the hospital where expert help is available. The lower interaction rate of the experienced mother in our sample may reflect her ability to establish mothering bonds with less effort than the first-time mother and does not necessarily mean that the resulting mother-infant bonds are less strong.

Again, it should be kept in mind that in this study the effect of parity on interaction with the baby was not statistically significant, was small, and was considerably less than the effect of other variables such as childbirth preparation.

DISCUSSION

Parity consistently has a large positive impact on obstetrical measures of ease of labor. However, among our subjects of relatively high socioeconomic status, the effects of parity were smaller and less consistent for the aspects of pregnancy, subjective birth experience, and

Table 7. Parity and Mothering after Delivery, Controlling for Preparation, in Percent Reporting the Item

Item	Nonprepared		Prepared	
	Primi- paras (n = 46)	Multi- paras (n = 70)	Primi- paras (n = 51)	Multi- paras (n = 31)
Wanted family plan	64	28*	84	72
Breastfeeding	24	26	68	74
Having difficulties feeding baby	23	22	37	19
Doing seven or more things with baby	13	14	49	36
Husband doing one or more things with baby	49	40	88	68**

* Significant difference, $P < .01$

** Significant difference, $P < .05$

mothering after delivery that we were able to examine. Multiparous women had more physical discomfort but fewer worries during pregnancy than primiparas. Although they worried more about delivery, the multiparas prepared for birth less than primiparas. When the strong effects of childbirth preparation on subjective experience in labor were controlled, parity did not account for significant differences in the degree of pain or enjoyment the women had during labor. After birth, parity did make some difference. The multiparas generally sought less contact with their babies during their hospital stays. But for all variables examined except obstetrical factors, the effects of parity were not large, especially when compared with the effects of other factors such as Lamaze preparation; and parity did not seem to make much difference in preparations for baby care.

It is important that health professionals become aware that the benefits of parity are primarily limited to obstetrical factors. While these factors have tended to be the most important in the medical definition of birth (i.e., they are the most researched, discussed in training, and noted on medical records), they are not prominent in women's evaluations and have minimal effects on subjective experiences. Although multiparas have had personal experience with birth, they are no better informed from more objective sources than are primiparas. Multiparas frequently get less support from people around them, especially from their husbands. Doctors, nurses, and childbirth educators can help multiparas in a number of ways. They should encourage multiparas who have not previously prepared for birth to do so. Previously unprepared multiparas have as much to gain from preparation as do primiparas. The multipara should understand that her shorter labor may not seem any less painful than her first delivery. Doctors should make a special effort to convince husbands that their wives need support from someone they feel close to during labor. If the husband cannot

be there, or if the woman prefers to be with her mother, sister, or friend, women should be encouraged to bring that person to the labor room. All labor room personnel should be aware that most unprepared multiparas need both information and psychological support throughout labor. Multiparas need and should receive the strong support from husbands, nurses, and physicians that is all too frequently reserved for women having their first babies.

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APPENDIX: Items from Interviews, Self-Administered Questionnaires, and Medical Records Used to Measure Variables

Age, parity, length of labor, lacerations, 1-minute Apgar, and neonatal resuscitation: from medical record.

Socioeconomic status: Woman's education from questionnaire; husband's occupation from medical record.

Health before pregnancy: from questionnaire. "Prior to this pregnancy, how was your overall health? Excellent=1, Very Good=2, Good=3, Not So Good=4, Quite Poor=5."

Sense of physical well-being during pregnancy: from questionnaire. "Generally, how did you feel during your (most recent) pregnancy? Excellent=1, Very Good=2, Good=3, Not So Good=4, Quite Poor=5."

Pregnancy complaints: Eight check-list items from questionnaire. "Nausea and vomiting during first three months, tired out, backache, heartburn, leg trouble-varicose veins, rapid weight gain, moods or depressions, water retention and swelling."

Weight gain during pregnancy: from questionnaire.

Serious worries during pregnancy and about childbirth: Ten check-list items from questionnaire. "Worried a lot about: financial problems; being able to take care of a baby; the way I looked; what childbirth would be like; not being sure I wanted this baby; how my husband felt about me; unrelated problems, such as illness of a relative; being able to continue my own activities after the baby was born; gaining weight; any other problem."

Lamaze preparation: from both interview and questionnaire. "Attended for this or a prior birth classes teaching breathing exercises and other pain control techniques under the auspices of the American Society for Psychoprophylaxis (Lamaze) or some other health organization." The few women who completed four or fewer classes were judged unlikely to have had sufficient instruction, and were coded unprepared.

Childbirth information: from interview. "Did you get information about childbirth from your doctor, friends, magazines, or pamphlets, a formal tour of the hospital, your own nursing training, film of childbirth, Lamaze or natural childbirth book, other books, mother or sisters?"

Preparation for baby care: from questionnaire. "Did you take baby care classes; read a book or pamphlet on nursing the baby; read baby care books like Dr. Spock; talk to friends or relatives or take care of a small baby? (Same for husband.)"

Centimeters dilated in last half hour: from medical record. How far dilated at time of each exam, plotted on standard labor curve to interpolate the number of centimeters dilated during last half hour of first stage of labor.

Labor complications: from medical record. *Severe Complications* = severe eclampsia or preeclampsia, fetal distress, placenta previa, abruptio, prolapsed cord, or postpartum hemorrhage or any 2 or more of *Complications* = mild preeclampsia, second stage arrest, multiple birth, prematurity, or prolonged latent stage.

No labor analgesia: from medical record. Woman received no analgesias like Demerol, tranquilizers, or paracervical or continuous caudal anesthetics during the first stage of labor.

No delivery anesthesia: from medical record. Woman received nothing or a local or pudendal anesthesia only during delivery; no gas or regional blocks. (Cesarean sections eliminated.)

Delivery: from medical record. Spontaneous delivery, no forceps used. (Cesarean sections eliminated.)

Blood loss greater than or equal to 200 ml: from medical record. Estimated blood loss during delivery and third stage.

Time to first cry: from medical record. Whether baby cried spontaneously in less than one minute at birth.

Alone, labor and delivery: from interview. Husband or any other personal friend in the labor room and/or the delivery room.

Husband helped, labor and delivery: from interview. Husband present in both the labor room and the delivery room and the woman evaluated his presence and help positively.

Most positive feelings: from interview. "As you look back, what most stands out in your mind about your labor and delivery?" Woman mentions some positive feelings, with or without negative or neutral ones.

Pain: eight interview items. Mention of pain in response to what stands out most (above), and "What did you like least, what were your thoughts and feelings (most of the time you were in the labor room/just before you went into the delivery room/in the delivery room before the baby was born), how much pain and discomfort did you have (most of the time you were in the labor room/just before you went into the delivery room/in the delivery room before the baby was born)," and from one questionnaire item, "On the whole, how much pain or discomfort did you experience (on a 7 point scale from no pain or discomfort to a lot of pain or discomfort)." Women who had not completed a questionnaire received a score based on interview items only.

Enjoyment: five interview items. Mention of joy or excitement in response to what stands out most (above), and "What did you like best, what were your thoughts and feelings (most of the time you were in the labor room/just before you went into the delivery room/in the delivery room before the baby was born)," and from one questionnaire item, "Generally, how enjoyable or thrilling was this birth (on a 7 point scale from no pleasure at all to extremely thrilling and enjoyable)." Women who had not completed a questionnaire received a score based on the interview items only.

Wanted family plan: from questionnaire. Are you on the family plan where you can have your baby in the room with you most of the day? Yes or family plan not available but wanted it.

Breastfeeding: from questionnaire.

Difficulties feeding baby: from questionnaire. Are you having any difficulties feeding your baby? Coded yes if any problem was mentioned.

Interactions with baby: from questionnaire. Check list of eight items: "Hold your

baby, talk to your baby, change your baby's diaper, feed your baby milk, feed your baby water, burp your baby, comfort your baby's crying, give the baby a bath." (Same for husband.)

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