Planned and Unplanned Home Births and Hospital Births in Calgary, Alberta, 1984–87

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Synopsis

Information collected on all home births in Calgary (Canada) between the years 1984 and 1987, was examined and analyzed according to whether the home birth environment had been planned or unplanned. The two groups were compared to each other and to all hospital births according to demographic characteristics of mothers, indicators of prenatal care, and birth outcome.

Mothers who had planned their home birth were more likely to be primiparous, attend prenatal classes, obtain regular prenatal care from a physician, and have babies with a higher birth weight than either the unplanned or hospital group. Of particular concern, however, were the subset of unplanned home births who were primiparous. These mothers attended prenatal classes less frequently than any other group, reported the lowest number of physician visits, were youngest, and least likely to be married. In addition their babies averaged the shortest gestational age and the lowest birth weight.

Findings in general show that planned and unplanned home births must be considered as heterogeneous groups in any comparison of risk factors and of birth outcome between home and hospital births. Further, within the unplanned group, multiparous women differ from primiparous women. Given the limitations inherent in this and similar studies, the apparent better outcome in the planned home birth group, as measured by birth weight, must be viewed with caution.

SINCE THE BEGINNING of the 20th century, advances in scientific medicine and the subsequent development of sophisticated obstetrical technology has led to a shift from home to hospital births. Emphasis has been placed on the hospital as the safest birth environment for both mother and child. In the 1970s however, an increasing interest in home births began to emerge. As a result, much controversy has arisen as to the relative safety of home births. Many studies have been conducted in the United States, Europe, Australia, New Zealand, and even in Africa in an attempt to resolve the issue. Findings have been conflicting. Some study results have indicated increased risk in home births; others no difference; and others a decreased risk.

Several methodological problems have been identified that may account for these potentially conflicting findings. One is the lack of complete birth registry information (*1,2*) and, in particular, the incomplete information that may be collected for home births (*3,4*). The failure to control for the planned nature of the home birth has been identified as being especially problematic (*5–9*). In studies in which results were analyzed by planned versus unplanned status of home births, significant differences in outcome were found between the two groups. A further methodological problem relates to the difficulty in identifying those planned home births that either were transferred to hospital due to emergence of risk factors late in pregnancy or complications during the antenatal period or during labor (*5,8*). In one study, findings suggest that this subset of planned home births may have the poorest outcome of all groups (*5*). Finally, the validity of prenatal assessments aimed at identifying those women at "low risk" for labor complications or a poor birth outcome has been questioned (*10–12*).

This paper describes the results of a study of all home births in Calgary, a major Canadian city, between the years 1984 and 1987. For this study, home births could be classified as either planned or unplanned, and completeness of information was assured, thus controlling for certain potential limitations in the interpretation of findings.

Methods

As the local health authority, Calgary Health Services receives notification of each of the more

Table 1. Comparison of planned and unplanned home births and hospital births, Calgary (Canada) 1984–87

Category	Planned home births (N = 61)	Unplanned home births (N = 29)	Hospital births (N = 33,777)
Mean age	28.7	28.9	27.4
Parity: percent primiparas	26.0	18.0	45.6
Marital status: percent not married	15.0	21.7	8.3
Prenatal classes:			
Percent primiparas attending	85.7	40.0	70.7
Percent multiparas attending	68.2	25.0	15.5
Mean number of physician visits:			
Primiparas	11.2	3.4	N/A
Multiparas	8.6	10.1	N/A
Birth outcomes:			
Percent respiration 5 minutes	95.0	93.0	N/A
Percent in labor 24 hours	84.0	86.0	N/A
Mean gestational age	40	39	39
Mean birth weight (g)	3,534	3,287	3,319

than 11,000 births in Calgary, which are registered with the Provincial Vital Statistics. As part of city-wide health monitoring, the agency began in 1983 to record the information from these notices. Because of public interest, it was decided to collect supplemental information specific to home births. A form (similar to the Physician's Notification of Birth) was developed for community health nurses to complete at the first home visit that they make with every new mother in the city. Information collected on the form includes the mother's age, marital status, parity, duration of labor and the gestational age, indicators of perinatal care (attendance at prenatal classes, physician visits), whether or not the home birth was planned or accidental, and birth outcome indicators (weight, onset of respiration, birth injury, or presence of congenital malformations).

No other data were collected or used as the basis for this study. Since notification of all registered births is received by Calgary Health Services, and all new mothers were visited by a community health nurse during the study period, we are certain that information was obtained on 100 percent of Calgary births.

Results

During the period between 1984 and 1987 a total of 90 home births occurred in Calgary. This small number may reflect the fact that in Alberta a physician's preplanned attendance at a home birth is considered unbecoming conduct and could lead to loss of license. A contributing factor may be that the practice of midwifery is not legislated in the Province. The Alberta Association of Registered Nurses has taken the position that they cannot support home births within the current health care system, and instead promote birthing centers.

In examining the data, it is apparent that there are two heterogeneous groups of home deliveries: planned and unplanned ones. Of the 90 home births included in this study, 61 (68 percent) were planned and 29 (32 percent) were unplanned. In comparing these groups to each other, and to hospital births, a number of interesting findings emerged concerning demographic characteristics of mothers, prenatal care, and birth outcome. Table 1 summarizes some of these findings.

Demographic characteristics of mothers. The mean age of mothers with either planned or unplanned births is almost identical (28.1 years planned, 28.9 years unplanned) and only slightly older than the average for hospital births (27.4 years). In regards to parity, a higher proportion of mothers in the unplanned group were multiparous (82 percent) than in planned home births (74 percent) or in all hospital births combined (54 percent). Women who experienced home rather than hospital births were more likely to be unmarried; this was particularly so for women with unplanned home births.

Prenatal care. Women who had planned home births were more likely to attend prenatal classes than those with unplanned home births or hospital births. This trend was especially pronounced for multiparous women. In addition, while the overall mean number of prenatal visits to the physician was very similar for planned or unplanned births, primiparas with planned births averaged 11.2 visits, while those with unplanned births averaged only 8.4 visits. For parous women, those with planned births averaged 8.6 visits, while those with unplanned births averaged 10.1. No comparative figures are available for hospital births.

Birth outcome. In regards to the birth process and the birth outcome, many measures were similar for the planned and unplanned group. Duration of labor was more than 24 hours in 84 percent of the planned group and 86 percent of the unplanned group. Little difference was observed in regard to onset of infant respiration. In the planned group

Table 2. Reason for 57 respondents choosing home births, Calgary (Canada) 1984–87

Reason	Number [1]	Percent [2]
Dissatisfied with previous hospital experience	11	19.3
Did not want interference, intervention, invasive procedure	11	19.3
Birth normal process—home natural or normal environment	10	18.5
More relaxed, comfortable, caring situation	9	15.8
Better for family; positive to have family there or together	8	14.0
Previous experience positive	8	14.0
Greater personal control	6	10.6
Dislike hospitals (too regimented, impersonal, unspecified)	5	8.9
Desired home birth (unspecified)	4	7.0
Safer at home	3	5.3
Lack of trust in doctors, medicine	2	3.5
Unavailability of family doctor	2	3.5
Choice after reading, studying	2	3.5
Other [3]	2	3.5

[1] Based on responses given by mothers. Respondents may have cited more than 1 reason.

[2] Represents the percentage of mothers citing each response.

[3] Includes responses cited by fewer than 2 mothers.

more than 95 percent of babies spontaneously commenced respiration in under 5 minutes, while in the unplanned group this figure was 93 percent. Although there were three babies born with congenital heart defects, in neither group were there reported any negative outcomes related to the birth process. Average gestational age was 40 weeks (range 38–42 weeks) for planned home births, 39 weeks (range 32–42 weeks) for unplanned home births and 39 weeks for the hospital group. The one observed difference between groups was in relation to mean birth weight, with babies in the planned home birth group on average heavier (3,534 g) than either in the unplanned home birth group (3,287 g) or the hospital group (3,319 g).

Choice of home birth. Women who had planned home births were asked why they made this decision. The responses are enlightening and quite consistent. By far the most frequent responses were related to dissatisfaction with a previous hospital birth experience, dissatisfaction with and dislike of hospitals in general, or an aversion to interference, intervention, and invasive procedures for what was deemed as a natural and normal process (table 2). In addition, many women believed that there were positive benefits to themselves and their families, such as greater safety, being in relaxed, comfortable surroundings, and having more personal control. A previously positive experience with a home birth was also frequently cited as a reason for choosing the same environment again.

Finally, women were asked whether they would choose to have a home birth again. Ninety-seven percent of those who had planned to have a home birth stated yes; only 10 percent of those whose home birth was unplanned would do the same. This is hardly surprising, since only four of these unplanned births were attended by either a midwife or physician. Certainly an unexpected home birth could be perceived as frightening, especially for a mother experiencing her first childbirth with no professional in attendance.

Discussion

Based on the findings from this relatively small study, it appears that the planned home birth group did not represent mothers who received inadequate prenatal care, or who experienced poorer birth outcomes. Instead, these mothers were more likely to attend prenatal classes and have babies with a heavier birth weight than their counterparts who experienced hospital births, findings that are consistent with those cited by other researchers (*6,8,13,14*). They also made more physician visits than mothers in the unplanned group. It would seem that this group of mothers not only made a conscious, motivated, thoughtful decision but also obtained the prenatal care necessary to help ensure a healthy birth outcome.

Of particular concern are the findings relating to unplanned home births among primiparas. This group attended prenatal classes less frequently than primiparas in any other group and reported a lower number of visits to the physician than primiparous or parous women in other groups. They also tended to be the youngest (25.8 years). These findings may possibly indicate that primiparous women with unplanned births were not receiving as much prenatal care or education and therefore may have had insufficient knowledge to monitor labor. By contrast, the unplanned parous mothers were more likely than their hospital counterparts to attend pre-

Figure 1. Gestational age by parity and birth type and site, Calgary (Canada) 1984–87

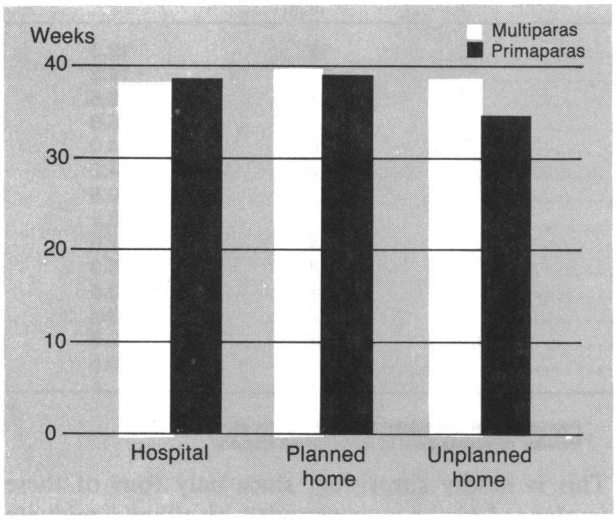
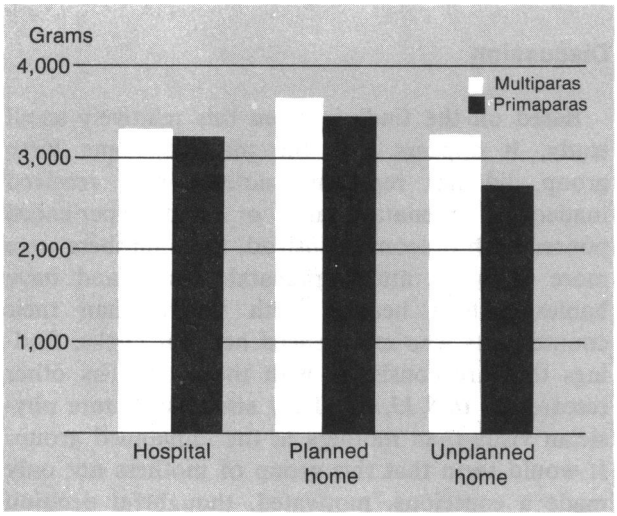


Figure 2. Mean birth weight by parity and birth type and site, Calgary (Canada) 1984–87



natal classes. This may suggest that for this home birth group the babies simply arrived too fast.

Findings from this study also suggest that the unplanned home births may be at higher risk for poor outcome, particularly the primiparous group. They were younger, more likely to be unmarried, and to have obtained less prenatal care. This observation is further substantiated by a comparison of birth outcome (as measured by gestational age and birth weight) by parity and location (figures 1 and 2). It becomes apparent that babies of the unplanned primiparous mothers average both the shortest gestational age and lowest birth weight. By contrast, the averages for the unplanned multiparous group become more similar to hospital births. These findings are again consistent with those found in other studies.

As with other research on the topic, several limitations are inherent in the study. First, no data were available for those mothers who may have planned to have a home birth and instead, due to a variety of circumstances, either voluntarily opted for hospital births or, due to potential risk factors, may have been advised to do so. In addition, no data are available on those mothers who may have been transferred to a hospital because of complication during labor. As has been pointed out by Campbell and coworkers (*5*), this group of mothers may be at the very highest risk for a poor birth outcome, since precious time is lost during the transfer period.

It is likely, therefore, that planned and successfully completed home births represent a healthier prenatal population in general, since those at risk for a complicated birth or poor outcome are identified before the home birth or transferred during labor. Certainly these factors would account for the lower than average birth weight for hospitals. If in fact, premature infants were excluded from hospital figures, this may cancel the apparent difference between the two groups or even reverse the direction of the findings.

In conclusion, findings from this study support not only the supposition that unplanned and planned home births must be treated as heterogeneous groups in any comparison of risk factors and birth outcome between home and hospital births, but also that, within the unplanned group, parous women differ from primiparous women. In addition, given the other limitations inherent in this and similar studies, the apparent better outcome in the planned group as measured by birth weight must be viewed with caution. However, in order to make hospital birthing a more positive experience for mothers and families, it may be well to note the findings related to why women chose home births.

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Measuring Health Variables Among Hispanic and Non-Hispanic Children with Chronic Conditions

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Synopsis

This paper addresses two concerns related to differences in the health status of Hispanic and non-Hispanic children: methodological issues in the measurement of health status across population subgroups and the substantive differences in the health of these subgroups.

Interview data from a study of chronically ill children in a northeastern inner city were collected using carefully translated measures of health and health-related behaviors. The psychometric properties of the scales were assessed across the subgroups to determine if common interpretation of the scales was possible. After determining that this was the case, group means in health and health-related variables were compared.

Despite sociodemographic group differences in variables, there were remarkably few differences among the groups on traditional morbidity measures. However, significant differences were found on four of five scaled health-related measures (the impact of the child's illness on the family, the child's functional status, and the mental health of both mother and child). These findings did not all favor the same group, suggesting that certain areas of function may present more problems for some subgroups. These differences virtually all disappear when multivariate techniques are used to control for variation in important socioeconomic characteristics among the three subgroups. Statements that the health status of one subgroup is better than that of another are too simplistic if they do not indicate the particular aspect of health status being discussed and control for differences among the groups in maternal education, family structure, maternal welfare status, and similar background characteristics.

THE 1980 CENSUS REVEALED that there are 14.6 million Hispanics in the United States representing 6.4 percent of the population (*1*). Since they are the fastest growing minority group in the population,