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# Unintended Pregnancies in North Carolina: Results from the North Carolina PRAMS Survey

**by**

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## ABSTRACT

**Introduction:** Unintended pregnancies are those that are unwanted or occur before a woman intended to become pregnant. The purpose of this study is to provide current descriptive data for North Carolina on the prevalence of unintended pregnancy and its correlates, for use by public health programs in the state.

**Methods:** Data from the North Carolina Pregnancy Risk Assessment Monitoring System (PRAMS) were used. This consists of a random sample of 5,943 live births for the period 1997-2000. Through mail and telephone interviews, women were asked whether they wanted to become pregnant then, sooner, later, or not at all. The latter two categories, mistimed and unwanted births, were defined as unintended.

**Results:** Overall, the PRAMS data show that 45 percent of 1997-2000 pregnancies that resulted in a live birth in North Carolina were unintended. Women who were young, of minority race, and of lower socioeconomic status were more likely to report an unintended pregnancy. Also, women who smoked or had other pregnancy and postpartum risk factors were more likely to have an unintended pregnancy.

**Conclusions:** Women of childbearing age in North Carolina need more information about contraception and its proper use, and better access to contraceptive services. A planned pregnancy gives women the opportunity to prepare for a healthy pregnancy. Reaching high-risk women with multiple risk markers is important for the reduction of unintended pregnancies.

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## Introduction

It is estimated that nearly half of all pregnancies and 30 percent of live births in the United States are unintended.[1,2] Unintended pregnancies are those that are unwanted or occur before a woman intended to become pregnant (i.e., mistimed).[1] The costs of unintended pregnancies that end in a live birth can be measured socially (e.g., increased child abuse and neglect), economically (e.g., higher health care costs), and medically (e.g., increased maternal or infant illness).[3,4]

The costs of unintended pregnancy are large regardless of age or marital status.[5] However, there are substantial differences in the rate of unintended pregnancy among various groups of women. Women who are under 20 years old, poor, African American, and less educated are more likely to experience an unintended pregnancy than women without these characteristics.[3]

The intendedness of a pregnancy, along with key social and demographic factors, plays an important role in determining pregnancy-related behaviors and infant outcomes. For example, women with unintended pregnancies are less likely to seek early prenatal care.[5] In addition, unintended pregnancies are associated with smoking and drinking during pregnancy, low birth weight, infant death, a lower likelihood of breastfeeding, and poor infant development.[2] Infant and child physical abuse and neglect and marital/relationship dissolution have also been found to be associated with unintended pregnancy.[6] For teenagers and young adults, these problems are compounded by factors such as lower educational attainment and unstable relationships.[3]

The distinction between unwanted and mistimed pregnancies is significant. Children of unwanted pregnancies are at greater risk of being born at low birth weight, of being abused, and of not receiving sufficient resources for healthy development. For mothers, there is a greater risk for depression, physical abuse, and relationship dissolution. Both parents are more likely to experience economic hardships and are less likely to achieve their educational and/or career goals. Unwanted pregnancies also are more likely to end in abortion.[4]

Other studies have addressed unintended pregnancy in a national context.[7] The purpose of this study is to provide current descriptive data for North Carolina on the prevalence of unintended pregnancy and its correlates, for use by public health programs in the state. Unintended pregnancies that resulted in a live birth are examined. Survey data collected from 5,943 randomly selected live births are used to look at selected pregnancy antecedents, pregnancy experiences, and postpartum factors associated with unintended pregnancies in North Carolina.

## Methods

The Pregnancy Risk Assessment Monitoring System (PRAMS) was developed by the Centers for Disease Control and Prevention in 1987 to provide state-specific, population-based surveillance of selected maternal behaviors that occur before, during, and after pregnancy. The North Carolina PRAMS project uses a monthly random, stratified sample of approximately 200 new mothers selected from live-birth certificates. These women are mailed a 14-page questionnaire two to six months after delivery, with up to two additional mailed questionnaires for nonrespondents. If nonresponse persists, telephone interviews are attempted. Overall, the survey response rate is approximately 75 percent. North Carolina PRAMS currently has data for the period July 1997 through December 2000, with a sample size of 6,265. Of the 6,265 mothers who responded to the PRAMS questionnaire, 322 were not used in these analyses because of missing data, resulting in a study sample of 5,943. All percentages are weighted to represent the state's annual birth population. The data were analyzed with the SUDAAN software to account for the complex survey design. The 95 percent confidence intervals for the percentages, calculated by SUDAAN, are also presented. As an approximation, if the confidence intervals for two groups being compared do not overlap, then the

difference between the groups in the percentage of unintended pregnancies is statistically significant at the p<.05 level.

Pregnancy intendedness was captured from the PRAMS survey question that asked mothers to indicate how they felt about becoming pregnant just prior to conception. Possible responses included "I wanted to be pregnant sooner," or "I wanted to be pregnant later," "I wanted to be pregnant then," and "I didn't want to be pregnant then or at any time in the future." Unintended pregnancies were defined as those pregnancies that the mother stated that she wanted to be pregnant later or did not want to be pregnant then or any time in the future.

## Results

Overall, the PRAMS data show that 45 percent of 1997-2000 pregnancies that resulted in a live birth in North Carolina were unintended. Thirty-four percent of the mothers who gave birth between 1997 and 2000 indicated that they wanted to be pregnant later (i.e., the pregnancy was mistimed) and another 11 percent indicated they never wanted to be pregnant. On average, that is approximately 37,000 babies annually whose conception was mistimed and 12,000 who were unwanted at the time of conception. In general, there has been little change in the rate of unintended pregnancy from 1997 to 2000.

Table 1 shows that women who were younger, were African American or other minority, had a high school education or less, lived in a single adult household, were unmarried, had income below $14,000, and were on WIC and/or Medicaid were more likely to report an unintended pregnancy than women in the comparison groups. Also, women who reported taking a multivitamin on a daily basis were much less likely to have an unintended pregnancy.

Table 2 shows that women had a higher percentage of unintended pregnancies if they reported experiencing barriers to prenatal care or having their first prenatal care visit after the first trimester of pregnancy.

**Table 1. Percentage of Live Births that Were Unintended, by Pregnancy Antecedents: North Carolina, July 1997 - December 2000**

| | Unintended Pregnancy | |
|---|---|---|
| **Characteristics** | **%** | **95% C.I.** |
| **Age** | | |
| < 20 years | 76.6 | (72.7, 80.5) |
| 20-24 years | 56.3 | (53.0, 59.6) |
| 25+ years | 32.1 | (30.1, 34.1) |
| **Education** | | |
| < High School | 61.2 | (57.5, 64.9) |
| High School | 51.8 | (48.8, 54.8) |
| > High School | 32.4 | (30.2, 34.7) |
| **Income below $14,000** | | |
| Yes | 65.5 | (62.2, 68.7) |
| No | 36.3 | (34.3, 38.3) |
| **Married** | | |
| Yes | 31.7 | (29.8, 33.5) |
| No | 73.3 | (70.5, 76.0) |
| **Mother's Race/Ethnicity** | | |
| White, non-Hispanic | 37.1 | (35.1, 39.1) |
| African Amer., non-Hispanic | 67.5 | (64.3, 70.7) |
| Other, non-Hispanic | 57.9 | (48.7, 67.1) |
| Hispanic | 37.5 | (31.2, 43.9) |
| **Single adult household** | | |
| Yes | 76.3 | (71.7, 80.9) |
| No | 41.6 | (39.9, 43.4) |
| **WIC** | | |
| Yes | 61.1 | (58.6, 63.4) |
| No | 31.4 | (29.3, 33.5) |
| **Medicaid recipient** | | |
| Yes | 62.4 | (60.0, 64.8) |
| No | 29.4 | (27.3, 31.5) |
| **Multivitamin frequency** | | |
| Took, every day | 22.5 | (19.7, 25.2) |
| Took, not every day | 42.0 | (38.2, 45.7) |
| Never took at all | 56.5 | (54.2, 58.7) |

This association of unintended pregnancy with late initiation of prenatal care may of course reflect that the woman was not aware of her pregnancy until later. Women who smoked during the last three months of pregnancy were much more likely to have an unintended pregnancy. However, women who reported drinking during the last three months were somewhat less likely to report that their pregnancy was unintended, though this difference was not statistically significant. Only about 3.5 percent of mothers reported drinking during the last three months of

**Table 2. Percentage of Live Births that Were Unintended, by Pregnancy Experiences: North Carolina, July 1997 - December 2000**

| Characteristics | Unintended Pregnancy % | 95% C.I. |
|---|---|---|
| **Barriers to prenatal care** | | |
| Yes | 66.2 | (62.0, 70.4) |
| No | 39.7 | (37.9, 41.5) |
| **Trimester of first prenatal care visit** | | |
| 1st | 40.6 | (38.9, 42.4) |
| 2nd | 71.3 | (66.7, 75.9) |
| 3rd | 71.4 | (59.4, 83.4) |
| **Mother drank during last three months of pregnancy** | | |
| Yes | 37.1 | (29.0, 45.3) |
| No | 45.5 | (43.8, 47.2) |
| **Mother smoked during last three months of pregnancy** | | |
| Yes | 57.9 | (53.5, 62.3) |
| No | 43.0 | (41.2, 44.8) |

pregnancy, and the reliability of the reporting of drinking on the PRAMS survey is questionable.

Table 3 shows that women who did not breastfeed their baby or who put their baby to sleep on their side or stomach (a risk factor for SIDS) had a higher percentage of pregnancies that were unintended. Women who reported being very depressed during pregnancy also had a higher percentage of unintended pregnancies. Finally, women with a low-birth-weight baby were significantly more likely to report that their pregnancy was unintended.

## Discussion

Nearly half of all live births in North Carolina are mistimed or unwanted. Approximately 75 percent of the unintended pregnancies are to women ages 20 and older; thus, unintended pregnancies are not just a problem for adolescents. The results of this study suggest that all women, regardless of age, race, or socioeconomic status, would benefit from increased efforts to insure that pregnancies are intended. However, programs should be targeted to those women with the greatest risk of unintended pregnancy. This includes young women, African American women, and women with lower levels of educational achievement and socioeconomic status. Women in these higher-risk groups may be more likely to be in an unstable relationship, resulting in poor communication with the partner about contraception. More information is needed about contraception and its proper use, as well as better access to contraceptive services.

These results suggest that substantial cost savings could occur if unwanted pregnancies ending in live birth were prevented. (Reducing mistimed pregnancies would likely just postpone the costs, since these women were planning to have a pregnancy in the future.) In North Carolina, the average amount paid by Medicaid just for newborn care in the first year of life is approximately $4,600. Sixteen percent (or 7,200) of the approximately 45,000 Medicaid live

**Table 3. Percentage of Live Births that Were Unintended, by Postpartum Conditions/ Behaviors and Infant Birth Weight: North Carolina, July 1997 - December 2000**

| Characteristics | Unintended Pregnancy % | 95% C.I. |
|---|---|---|
| **Postpartum depression** | | |
| Not depressed or moderately depressed | 43.3 | (41.6, 45.0) |
| Very depressed | 66.8 | (61.3, 72.3) |
| **Breast-fed** | | |
| Yes | 36.7 | (34.5, 38.8) |
| No | 57.0 | (54.4, 59.7) |
| **Infant birth weight** | | |
| Normal | 44.8 | (43.0, 46.6) |
| Low | 49.4 | (47.6, 51.3) |
| **Sleep position** | | |
| Back | 40.3 | (37.9, 42.8) |
| Side | 47.9 | (44.8, 51.0) |
| Stomach | 52.6 | (48.6, 56.7) |

births per year are unwanted. If half of these unwanted births could be prevented, the annual cost savings to the Medicaid program would be $16,560,000. And this does not include delivery and other costs for the mother, or costs for the child and family past one year of life. It is clear that increased funding for family planning services would have a substantial payoff in reducing birth-related Medicaid costs.

The percentage of live births that were unintended is substantially higher in North Carolina than what has been found for the United States as whole. This is likely due to the socioeconomic and racial composition of the birth population in North Carolina. A higher percentage of women in North Carolina are of lower education and income, groups where the rate of unintended pregnancy is higher. Also, in North Carolina 24 percent of live births are to African American women, compared to 15 percent in the United States. The rate of unintended pregnancy reported through PRAMS is nearly twice as high among African-American women as it is among white women.

A planned pregnancy gives women the opportunity to prepare for a healthy pregnancy. Healthy behaviors before and during pregnancy reduce the chances of having a preterm or low birth weight infant. This study shows that having an intended pregnancy is associated with having a normal birth weight baby. It was also associated with taking a multivitamin daily before becoming pregnant, earlier entry into prenatal care, and not smoking during the last three months of pregnancy. Having an intended pregnancy was associated with breastfeeding and putting the babies to sleep on their back. Breastfeeding helps to maintain the health of the infant, and proper sleeping position reduces the risk of SIDS. Women with an intended pregnancy were also less likely to experience postpartum depression.

This study presents unadjusted associations between intendedness of pregnancy and single selected pregnancy antecedents, pregnancy experiences, and postpartum conditions. From these results, we cannot determine the independent associations of pregnancy intendedness with, for example, education, race, or prenatal care. In fact, many of the high-risk characteristics are interrelated. Reaching high-risk women with multiple risk markers is important for the reduction of unintended pregnancies.

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