Vol. 2 No. 3 Summer 1998

A Special Delivery from SC PRAMS

Poverty Among South Carolina Mothers, 1993-1996

What is SC PRAMS?

The information for this newsletter was taken from the South Carolina Pregnancy Risk Assessment Monitoring System (SC PRAMS). SC PRAMS is an ongoing mail or telephone survey that obtains information from new mothers shortly after they deliver. About 2,100 mothers are randomly sampled from the state's live birth registry each year. Very low birthweight infants (less than 3.3 pounds at birth) and moderately low birthweight infants (between 3.3 and 5.5 pounds at birth) are over-sampled because we need to learn more about high risk mothers. After statistical weights are applied, inferences can be made about the health of mothers and babies in SC.

The data presented in this newsletter reflect live births to SC mothers occurring in SC between the years of 1993-1996. The overall response rate for these four years was 71% (8,816 out of 12,443 mothers responded).

Background

According to the US Census Bureau, the percent of persons in poverty between the years of 1993-1996 averaged 14 percent. Based on the federal poverty thresholds, the percent of persons in poverty for South Carolina (SC) during this same time period was above the national rate, averaging 15.6 percent. There were only 14 states with rates of poverty higher than SC[1].

Poverty among pregnant women is of particular concern because the health of an unborn child is at risk. Poverty is associated with poor health, insufficient medical care, and poor birth outcomes[2-5]. It is important to examine the problem and target this high risk population.

This newsletter addresses the characteristics of poor mothers in SC and highlights the behaviors which may be more common in poor women.

Methods

South Carolina-specific poverty thresholds, used by the SC Medicaid Office to determine program beneficiaries, were used in this analysis. The percent of poverty was calculated using family size and household income, obtained from the PRAMS Survey. Women were asked how many people live in their house, apartment, or trailer at the present time and what their total household income was the year before delivery.

Poverty status was broken down into three categories: less than 100 percent (poor), 100-185 percent (near-poor), and greater than 185 percent (non-poor). In SC, pregnant women are eligible for Medicaid if they are at

or below 185 percent of poverty (poor or near-poor). For example, in 1996, a family of four with a total family income of less than $15,600 was considered poor (<100% of poverty). In order to simplify the reading of this report, women will be referred to as "poor", "near poor", or "non-poor" throughout the text.

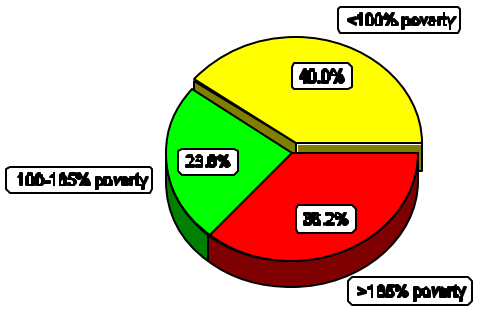
Results

Table 1 shows the income distribution for different groups of women in SC. Table 2 shows the characteristics of women within each income category. Because 12.5 percent of women were missing information on income and/or family size, the final sample size was 7,528, representing 182,373 mothers after statistical weights were applied.

The Magnitude of the Problem

In SC, only **36.2 percent** of women delivering live infants between the years of 1993-1996 were **non-poor**. A greater proportion of black mothers in SC were poor (67.0%) when compared to white mothers (25.9%). Almost 50 percent of white mothers were non-poor as opposed to only 11.7 percent of black mothers.

Figure 1. Poverty Status among SC Women Delivering Live Infants, 1993-1996



Maternal Characteristics

Ninety-two percent of mothers who had a less than high school **education** were near-poor or poor, however; 38.6 percent of mothers who received an education beyond high school were also in these two categories (table 1).

Marital status is also correlated with poverty level: 71.6 percent of unmarried mothers were poor, and 20.5 percent were

Table 1. Poverty Level by Maternal Characteristics, PRAMS Data 1993-1996

	<100% poverty *(poor)*	100-185% poverty *(near-poor)*	>185% poverty *(non-poor)*
Characteristics	**Percent (Standard Error)**		
Total	40.0 (0.8)	23.8 (0.7)	36.2 (0.8)
Race			
Black	67.0 (1.3)	21.3 (1.2)	11.7 (0.9)
White	25.9 (0.9)	25.0 (0.9)	49.1 (1.0)
Age			
11-19 yrs	67.3 (2.1)	24.6 (1.9)	8.1 (1.2)
20-29 yrs	42.4 (1.1)	25.9 (0.9)	31.7 (1.0)
30-55 yrs	21.8 (1.2)	19.3 (1.1)	59.0 (1.4)
Education			
Less than HS	69.8 (1.8)	22.4 (1.6)	7.9 (1.1)
Completed HS	48.8 (1.3)	27.2 (1.2)	24.0 (1.1)
More than HS	18.2 (1.0)	20.6 (1.0)	61.2 (1.2)
Marital Status			
Married	23.5 (0.8)	25.5 (0.9)	51.0 (1.0)
Unmarried	71.6 (1.3)	20.5 (1.2)	7.9 (0.8)
Prenatal Care*			
Inadequate	70.1 (2.0)	21.1 (1.8)	8.8 (1.2)
Intermediate	40.3 (2.2)	22.5 (1.8)	37.2 (2.1)
Adequate	33.0 (1.2)	22.3 (1.0)	44.7 (1.2)
Adequate Plus	35.4 (1.4)	27.6 (1.3)	37.0 (1.4)
1st Trim. PNC**			
Yes	32.0 (0.9)	24.0 (0.8)	43.9 (0.9)
No	63.9 (1.6)	23.4 (1.4)	13.7 (1.1)
Birthweight			
VLBW	47.8 (0.7)	25.6 (0.6)	26.6 (0.6)
MLBW	51.4 (1.4)	22.6 (1.1)	26.0 (1.2)
NBW	39.1 (0.9)	23.8 (0.7)	37.1 (0.8)
WIC Status			
On WIC	66.3 (1.1)	27.2 (1.0)	6.6 (0.6)
Not on WIC	10.2 (0.7)	20.1 (0.9)	69.7 (1.1)

*Kotelchuck Index was used to measure adequacy of prenatal care
**PNC=Prenatal Care

near-poor. Only 8.1 percent of unmarried women were in the non-poor category.

It is very important that women receive adequate **prenatal care** during pregnancy to prevent, minimize or prepare for difficulties which might occur during pregnancy or delivery. Almost all of the women (91.2%) who received inadequate prenatal care during pregnancy were near-poor or poor.

Table 2. Maternal Characteristics within each Poverty Level, PRAMS Data 1993-1996

	<100% poverty *(poor)*	100-185% poverty *(near-poor)*	>185% poverty *(non-poor)*
Characteristics	**Percent (Standard Error)**		
Total	40.0	23.8	36.2
Race			
Black	58.3 (1.3)	31.5 (1.6)	11.4 (0.9)
White	41.7 (1.3)	68.5 (1.6)	88.6 (0.9)
Age			
11-19 yrs	24.4 (1.1)	15.0 (1.2)	3.2 (0.5)
20-29 yrs	59.9 (1.3)	61.5 (1.6)	49.5 (1.3)
30-55 yrs	15.8 (1.0)	23.5 (1.4)	47.3 (1.3)
Education			
Less than HS	34.2 (1.3)	20.5 (1.5)	7.5 (1.0)
Completed HS	49.9 (1.3)	52.1 (1.8)	47.5 (1.8)
More than HS	15.9 (1.0)	27.4 (1.6)	45.0 (1.8)
Marital Status			
Married	38.4 (1.3)	70.4 (1.5)	92.5 (0.7)
Unmarried	61.6 (1.3)	29.6 (1.5)	7.5 (0.7)
Prenatal Care*			
Inadequate	24.4 (1.1)	12.4 (1.1)	3.4 (0.5)
Intermediate	14.5 (1.0)	13.7 (1.2)	14.7 (0.9)
Adequate	35.0 (1.3)	39.7 (1.6)	51.9 (1.3)
Adequate Plus	26.1 (1.1)	34.3 (1.6)	30.0 (1.2)
1st Trimester PNC**			
Yes	60.0 (1.3)	74.9 (1.5)	90.6 (0.8)
No	40.0 (1.3)	25.1 (1.5)	9.4 (0.8)
Birthweight			
VLBW	1.8 (0.1)	1.6 (0.1)	1.0 (0.1)
MLBW	8.3 (0.3)	6.2 (0.4)	4.7 (0.2)
NBW	89.9 (0.3)	92.2 (0.4)	94.3 (0.2)
WIC Status			

*Kotelchuck Index was used to measure adequacy of prenatal care
**PNC=Prenatal Care

Ninety-one percent of women who were non-poor received **prenatal care** during the **first trimester**. In comparison, only 60.0 percent of women who were poor received prenatal care during the first trimester. (Table 2).

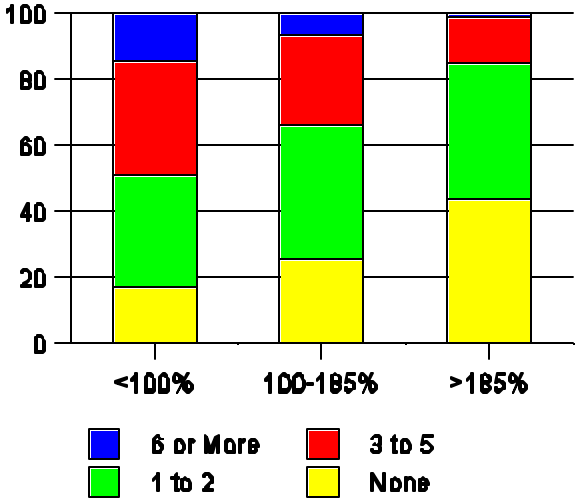
One question on the PRAMS Survey is whether the woman was **hospitalized** during pregnancy, excluding the delivery. Three quarters of the women that were hospitalized during pregnancy in SC were near-poor or poor, with the majority of these women being poor (48.9%). (Data not shown.)

Low birthweight is often associated with low socioeconomic status. Almost half (47.8%) of the women who had very low birthweight (VLBW:<1500 grams) infants and more than half (51.4%) of the women delivering moderately low birthweight infants (MLBW: 1500-2499 grams), were poor. A greater proportion of mothers of normal birthweight infants (NBW: >2499 grams) were non-poor (37.1%) in comparison to the proportion of mothers of MLBW (26.0%) or VLBW (26.6%) infants who were non-poor.

Between the years of 1993-1996, about half of the pregnancies in South Carolina were **unintended.** Pregnancies were classified as unintended if they were either mistimed or unwanted. A greater proportion of unintended pregnancies were seen in poor (66.9%) and near-poor (51.7%) women, in comparison to

non-poor mothers (24.5%) (figure 2). Seventy-five percent of non-poor mothers *planned* their most recent pregnancy *(*i.e. had an *intended* pregnancy*)*.

Figure 3. Number of Stressful Life Events Experienced during Pregnancy* by Poverty Level, 1993-96

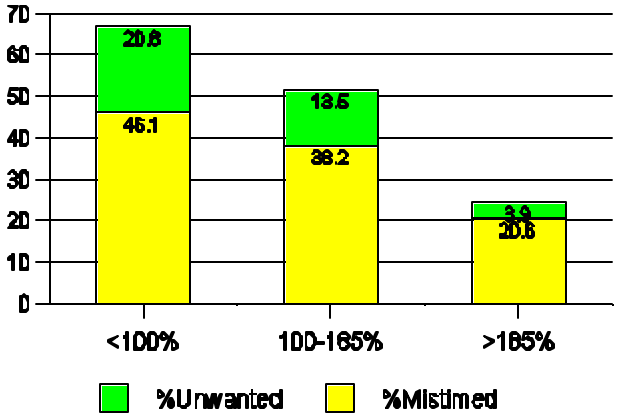


PRAMS is a unique source of information on **stressful life events** experienced during pregnancy. Women were asked if they experienced certain stressful life events during the 12 months before their delivery. Almost 75 percent of women who experienced six or more stressful life events during pregnancy were poor. As shown in figure 3, one can see that a small proportion of women (14.8%) in the non-poor group experienced three or more stressful life events during pregnancy. A different picture is seen with women who were poor : 49.1 percent of these women experienced 3 or more stressful life events during the 12 months before delivery.

Many stressful life events are beyond human control, there are some things that may reduce or soften the effect that these events have on a woman. **Social support** (help from family, friends, or a partner) is one factor which might help a woman cope with the stress in her life. The PRAMS Survey also asks whether the woman would have had help if she needed it during her pregnancy. As anticipated, women who were near-poor and poor had less social support available than non-poor women (Data not shown.)

Smoking and **alcohol** consumption are discouraged during pregnancy because of detrimental effects these behaviors can have on an unborn child. Of women who were smokers before pregnancy, a greater proportion of near-poor or poor women smoked during the last trimester of pregnancy (18.4%) in comparison to non-poor women (9.5%) ($p<.01$). A different trend is seen with drinking, however; 3.4 percent of near-poor or poor women reported drinking during

Figure 2. Unintended Pregnancy in SC by Poverty Level, 1993-1996



g the last trimester of pregnancy in comparison to 7.2 percent of non-poor women (p<.01). (Data not shown.)

Breast-feeding (figure 4) is an important part of raising a strong, healthy infant. Over 60.0 percent of mothers who were non-poor breast-fed for more than one week, compared to 43.8 percent of mothers who were near-poor and only 25.8 percent of mothers who were poor.

Discussion

There are several limitations to this analysis. First, household income is a self-reported variable which was not verified. As with any self-reported data, recall bias and social desirability bias are potential hazards. Recall bias may occur because women are being asked to recall events that occurred during their pregnancy, 4 to 6 months after their child was born. Social desirability bias may occur because women may under-report behaviors or characteristics that they consider undesirable. In addition, household income was measured during pregnancy, while family size was measured at the time the survey was received. Although adjustment was made for the addition of the infant, family size may have varied considerably between conception and the first few months of the child's life.

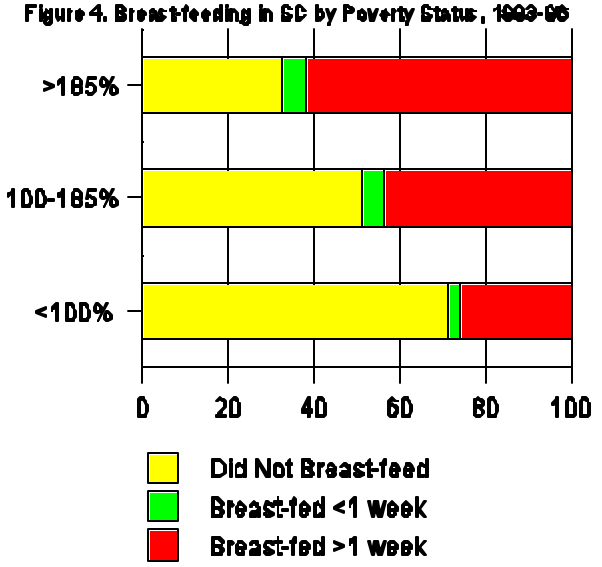
Conclusion

The first objective of this newsletter was to describe poverty among women delivering live infants in South Carolina. The PRAMS data indicate that women who are black, have a less than high school education, are teenagers, and are unmarried are more likely to be poor than women without these characteristics. It is essential to identify which women are poor in order to appropriately target programs to address problems that accompany economic distress.

The second objective was to highlight some behaviors/ problems that are more common to women living in poverty (poor and near-poor women). It is clear that women in poverty are ***more*** likely to have unintended pregnancies, to smoke during pregnancy, to receive inadequate prenatal care, to be hospitalized before delivery, and to experience a high number of stressful life events during pregnancy than non-poor women. Women in poverty are ***less*** likely to breast-feed their babies.

By outlining the problems that poor women face, we can target women in poverty with efforts to help them attack these problems. Although we cannot eliminate poverty, we can attempt to improve the health care and education provided to women living in poverty, giving children born into this situation a fighting chance.

Figure 4. Breast-feeding in SC by Poverty Status, 1993-95



References

1. U.S. Bureau of the Census, March 1997, 1996 and 1995 Current Population Surveys

2. Poverty and Infant Mortality - United States, 1988 MMWR; December 15, 1995.

3. National Center for Health Statistics. Health, United States, 1998 With Socioeconomic Status and Health Chartbook. Hyattsville, Maryland: 1998:pp 4-5.

4. Morrison J, Najman JM, Williams GM, Keeping JD, and Anderson MJ. Socio-economic status and pregnancy outcome. An Australian study. Bristish Journal of

Obstetrics and Gynaecology 1989; 96:298-307.

5. Parker JD, Schoendorf KC, Kiely JL. Associations between measures of socioeconomic status and low birth weight, small for gestational age, and premature delivery in the United States. Annals of Epidemiology 1994;4:271-8.

Acknowledgments

South Carolina PRAMS Program
Division of Biostatistics, Office of Public Health Statistics and Information Systems,
Department of Health and Environmental Control
2600 Bull Street Columbia, SC 29201 Phone: (803) 734-4681

Douglas E. Bryant, MPH, Commissioner
Lisa Waddell, MD, MPH, Assistant Commissioner
Murray B. Hudson, MPH, Director
James Ferguson, DrPH, Deputy Director

Tajammal Mustafa, PhD, PRAMS Project Director
Alexandra Connelly, MSPH, PRAMS Project Coordinator
Kristen Helms, MSPH Candidate, PRAMS Data Manager

Nedra Whitehead, MS, Epidemiologist, CDC PRAMS Team
Indu Ahluwalia, PhD, Epidemiologist, CDC PRAMS Team

We would like to express special thanks to Joyce Brown, Title X Director; Joe Kyle, MPH, Policy Advisor; Marie Meglen, MS, CNM, MCH Title V Director; and members of the PRAMS Steering Committee for their guidance in this endeavor.

Funding for the PRAMS Program is provided by the Center for Disease Control and Prevention, Atlanta, GA (Grant No. U50/CCU613668)