SC PRAMS Special Delivery

Postpartum Depression Symptoms in South Carolina, 2004-2005

South Carolina Pregnancy Risk Assessment Monitoring System

Introduction

Postpartum depression, sometimes known as baby blues, is a condition where women experience episodes of depression in the first year after giving birth. This depression is often characterized by women feeling uneasy, irritable, confused and forgetful, anxious, or guilty while experiencing fatigue, inability to cope, or thoughts of suicide.[1]

Postpartum depression is not only dangerous for the mothers experiencing the symptoms, but also for their infants. Studies have shown that postpartum depression in the mother is associated with delays in the infant's cognitive development and reduced infant-mother attachment.[2,3]

At least one study has shown that 96 percent of mothers experiencing postpartum depression are correctly identified as such by a two question method for detecting postpartum depression symptoms.[4]

What is SC PRAMS?

The South Carolina Pregnancy Risk Assessment Monitoring System (SC PRAMS) is an ongoing population-based surveillance system of maternal behaviors and experiences before, during and after pregnancy. About 2,300 mothers are randomly sampled from the state's live birth registry each year.

The data presented in this newsletter reflect live births to S.C. mothers occurring in South Carolina during the years of 2004 and 2005. The overall response rate for these two years was 71.5 percent.

In a recent study of the general health status of new mothers, it was reported that South Carolina had the highest prevalence of women experiencing postpartum depression symptoms of all of the 16 PRAMS states analyzed.[5] In 2004 and 2005 about 19.1 percent of new mothers in South Carolina were identified by the two-question method in the PRAMS phase V survey as having postpartum depression symptoms.

This report describes the characteristics of women who reported having postpartum depression symptoms in South Carolina for the years 2004 and 2005.

Methods

PRAMS data for 2004 and 2005 were used to assess reported postpartum depression symptoms after pregnancy among South Carolina women delivering a live born infant. The two questions that mothers were asked are: "Since your new baby was born, how often have you felt down, depressed or hopeless?" and "Since your new baby was

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born, how often have you had little interest or little pleasure in doing things?" The answer choices for both questions were: always, often, sometimes, rarely, or never.

Mothers who answered always or often to either of the questions above were considered to have experienced postpartum depression symptoms.

SAS and SUDAAN software were used to calculate estimates, standard errors, relative risks (RRs) and 95 percent confidence intervals (95 percent CIs). SUDAAN was also used to estimate adjusted odds ratios and 95 percent CIs from a logistic regression model. Mothers with missing information on postpartum depression symptoms or any of the covariates in the logistic regression model were excluded from these analyses.
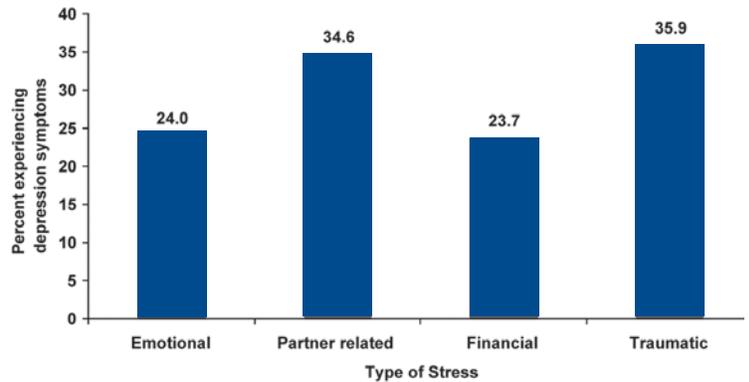
Results

There were 2,475 women who participated in the study, representing approximately 93,707 South Carolina women who delivered a live-born infant during 2004 and 2005 (after statistical weighting).

Overall, 19.1 percent of the women who gave birth in South Carolina in 2004 and 2005 reported experiencing postpartum depression symptoms. Among those who experienced postpartum depression symptoms, 30.8 percent answered always or often to the first question only (felt down, depressed, or hopeless), 35.9 percent answered always or often to the second question only (had little interest or little pleasure in doing things), and 33.2 percent answered always or often to both questions.

Figure 1 displays the prevalence of postpartum depression symptoms among women reporting stressful events in the 12 months before giving birth. Stressful events were categorized as emotional, partner related, financial, or traumatic (includes being homeless, being in a physical fight, mother or partner went to jail, or someone close having a drinking or drug problem). These categories are neither mutually exclusive nor exhaustive.

Figure 1: Prevalence of postpartum depression symptoms by type of stressful events reported prior to giving birth, South Carolina PRAMS 2004-2005

Unadjusted relative risks indicate that each category of all of the maternal characteristics analyzed significantly increase the risk of experiencing postpartum depression symptoms when compared to the respective reference categories (Table 1). The highest relative risks observed are for mothers who were abused during their pregnancy, mothers younger than 20 years of age, and mothers who make less than $10,000 per year.

To examine the association between these maternal characteristics and postpartum depression symptoms further each characteristic was analyzed adjusting for all of the other characteristics in a logistic regression analysis (Table 1). Yearly household income was not included in the logistic regression model to reduce collinearity; this was the only maternal characteristic left out of the model.

After adjustment, the odds of experiencing postpartum depression are significantly increased among women between 20 and 29 years of age (OR = 1.57, CI = (1.01, 2.43)), black women (OR = 1.61, CI = (1.06, 2.58)), women with less than a high school education (OR=1.89, CI = (1.13, 3.14)), and women who were abused during pregnancy (OR = 5.38, CI = (2.77, 10.43)).

Table 1: Characteristics of South Carolina mothers by the presence of postpartum depression symptoms among women who did not have missing information on depression symptoms or any of the logistic covariates, 2004-2005

Maternal Characteristic	Did Not Experience Postpartum Depression Symptoms	Experienced Postpartum Depression Symptoms	RR (95% CI)[§]	AOR (95% CI)[§]
	Weighted Percent (Unweighted Number)	Weighted Percent (Unweighted Number)		
Age (Years)				
Younger than 20	67.8% (239)	32.2% (97)	2.24 (1.69, 2.95)	1.79 (0.86, 3.73)
20-29	79.6% (1065)	20.4% (295)	1.23 (1.11, 1.37)	1.57 (1.01, 2.43)
30 and older	88.6% (653)	11.4% (126)	Ref.	Ref.
Race				
White	85.5% (1080)	14.5% (208)	Ref.	Ref.
Black	73.0% (754)	27.0% (267)	1.59 (1.32, 1.92)	1.61 (1.06, 2.58)
Other	77.8% (123)	22.2% (43)	---[¶]	---[¶]
Ethnicity				
Hispanic	73.9% (97)	26.1% (29)	---[¶]	---[¶]
Non-Hispanic	81.4% (1860)	18.6% (489)	Ref.	Ref.
Education				
Less than high school	66.5% (384)	33.5% (168)	2.11 (1.71, 2.61)	1.89 (1.13, 3.14)
High school	81.3% (493)	18.7% (144)	1.30 (1.02, 1.67)	0.95 (0.59, 1.52)
More than high school	86.8% (1080)	13.2% (206)	Ref.	Ref.
Marital Status				
Married	86.4% (1108)	13.6% (211)	Ref.	Ref.
Not married	73.2% (849)	26.8% (307)	1.55 (1.33, 1.80)	1.05 (0.66, 1.67)
Prenatal Care Initiation				
1st trimester	83.8% (1612)	16.2% (383)	Ref.	Ref.
Later than 1st trimester	70.0% (345)	30.0% (135)	1.81 (1.40, 2.35)	1.40 (0.93, 2.09)
Infant's Birthweight (grams)				
Low (<2500)	76.9% (1212)	23.1% (363)	1.27 (1.04, 1.56)	1.11 (0.86, 1.43)
Normal (2500+)	81.3% (745)	18.7% (155)	Ref.	Ref.
Smoked Last 3 Months of Pregnancy				
Yes	72.9% (263)	27.1% (102)	1.57 (1.12, 2.22)	1.43 (0.86, 2.38)
No	82.2% (1694)	17.8% (416)	Ref.	Ref.
Intendedness of Pregnancy				
Intended	84.6% (1065)	15.4% (207)	Ref.	Ref.
Unintended[#]	77.0% (892)	23.0% (311)	1.27 (1.10, 1.46)	1.00 (0.67, 1.47)
Physical Abuse				
Abused during pregnancy	42.1% (52)	57.9% (68)	5.82 (3.27, 10.36)	5.38 (2.77, 10.43)
Not abused during pregnancy	82.7% (1905)	17.3% (450)	Ref.	Ref.
Breastfeeding Initiation				
Initiated breastfeeding	83.8% (1344)	16.2% (336)	Ref.	Ref.
Did not initiate breastfeeding	76.2% (613)	23.8% (182)	1.33 (1.11, 1.58)	1.19 (0.82, 1.74)
Previous Live Births				
0	80.6% (936)	19.4% (253)	---[¶]	---[¶]
1-2	82.2% (893)	17.8% (221)	---[¶]	---[¶]
3+	72.3% (128)	27.7% (44)	Ref.	Ref.
Income ($)*				
Less than 10,000	68.3% (465)	31.7% (221)	2.12 (1.80, 2.50)	
10,000-19,999	78.9% (360)	21.1% (98)	1.86 (1.46, 2.38)	
20,000-34,999	79.8% (348)	20.2% (90)	1.85 (1.42, 2.41)	
35,000+	91.9% (687)	8.1% (82)	Ref.	

* Excluded from logistic model to reduce collinearity.

§ Risk or odds of experiencing postpartum depression symptoms compared to the relevance group was considered significant if the 95%CI did not include 1.

A pregnancy that is unintended is a pregnancy that is not wanted or wanted later, whereas an intended pregnancy is wanted then or sooner.

¶ RR and AOR not calculated because cell size smaller than 50.

Conclusion

The objective of this newsletter was to describe the characteristics of mothers who experienced postpartum depression symptoms in South Carolina in the years 2004-2005.

The factors that are associated with an increased odds of having experienced postpartum depression symptoms are being between 20 and 29 years of age, compared to being 30 or older, being black, compared to being white, having less than a high school education, compared to having some education beyond high school and being physically abused during pregnancy. The magnitude of the increase in the odds of postpartum depression symptoms is highest among women who have been physically abused during pregnancy. It may, however, often be difficult for a clinician to determine whether a woman has been, or is being, abused during her pregnancy. Women may also be hesitant to disclose such information to their doctors. Therefore, the associations observed within age, race, and education may be more important for health practitioners when identifying patients that may be at an increased risk of developing postpartum depression symptoms.

There are several limitations to this study. While the two question method for identifying postpartum depression has a high specificity, capturing about 96 percent of all cases, it has a low positive predictive value, resulting in about 35 percent of cases identified being false positives.[4] Therefore, this method does not necessarily diagnose postpartum depression, but rather identifies postpartum depression symptoms. In addition, several questions from the PRAMS survey that were used for this study, such as questions about depression symptoms, smoking habits, and physical abuse, cover topics of a sensitive nature and may not always be answered honestly or answered at all. Further, all answers to PRAMS surveys are self reported and may introduce some bias.

Recommendations

Provision of counseling for postpartum depression by obstetricians and family care providers is a simple, low-cost intervention, with potentially great impact on the health of mothers and babies. Campaigns to educate women about the dangers of postpartum depression as well as inform them of resources to help manage postpartum depression could also help to reduce the prevalence of this morbidity.

References

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