

Special Delivery from SC PRAMS

Short Interpregnancy Intervals among South Carolina Mothers, 1992-1997

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 survey that obtains information from new mothers four to six months after delivery. Selected mothers are mailed a survey up to three times. Telephone interviewers attempt to reach the mothers who did not respond to the mail survey.

About 2,100 mothers are randomly sampled from the state's live birth registry each year. Low birth weight infants (less than 5 ½ 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 South Carolina.

The data presented in this newsletter reflect live births to South Carolina mothers between the years of 1992-1997. The overall response rate for these years was 71% (10,221 out of 14,347 mothers responded).

Background

Interpregnancy interval is defined as the period between delivery of one birth and conception of a subsequent pregnancy. Recent studies have shown that shorter interpregnancy intervals place the mother at greater risk of adverse pregnancy outcomes. Short interpregnancy interval is closely associated with low birthweight, less than 2500 grams, which in turn is a strong predictor of infant morbidity and mortality¹⁻⁵. The Healthy People 2000 Goal states the low birthweight rate for the United States should be no greater than 5.0 percent⁶ overall; however, South Carolina's low birthweight rate in 1997 was 9.2 per 100 live births⁷, which was significantly higher than the US rate of 7.5⁸.

Another concern of short interpregnancy interval, particularly among younger mothers, is the negative social impact of rapid repeat births. Not only are second births to teenage mothers more likely to result in low birthweight, morbidity, and even mortality compared to first births⁹, these women are also the ones most likely to suffer economically and socially from having a subsequent birth so soon after the first. The purpose of this newsletter is two-fold: (1) to determine and compare the correlates of short interpregnancy interval among different age groups of mothers, and (2) to measure

the association between short interpregnancy interval and low birthweight among these three subpopulations of mothers in South Carolina, and determine if age modifies the association.

Methods

The study participants include 4,385 women who delivered a live-born infant and responded to the SC PRAMS survey for the years 1992-1997, representing approximately 130,000 South Carolina women after statistical weighting. Mothers who have not had at least one previous live birth were initially excluded from the study. Other exclusions include multiple births, races other than black or white, mothers with missing or implausible birthweight for gestational age, and mothers missing information on interpregnancy interval. Interpregnancy interval was calculated by subtracting the delivery date of the most recent birth (minus the gestational age of the infant) from the delivery date of the previous birth. For this study, short interpregnancy interval was defined as less than 12 months.

Logistic regression analyses were performed to determine significant correlates of having an interpregnancy interval of less than 12 months among each of the three age groups of mothers and to measure the association between short interpregnancy interval and low birthweight. Factors assessed as correlates of short interpregnancy interval and possible confounders for the association with low birthweight include: pregnancy intention, marital status, race, prenatal contraceptive use, smoking during pregnancy, poverty level, education level, Medicaid status, previous child died, prepregnancy body mass index, prenatal care adequacy (Kotelchuck Index¹⁰), previous low birthweight, and parity.

Results

Characteristics of mothers in the study differed by both age group and by interpregnancy interval (Tables 1 and 2). From Table 1, among mothers with a short interpregnancy interval (less than 12 months), the characteristics that varied the most across the age groups were smoking, pregnancy intention, birth control use, race, Medicaid status, education, marital status, pre-pregnancy BMI, prenatal care utilization, and poverty. The proportion of smokers with a short interpregnancy interval was much higher among teenage mothers (26.0%) than mothers 20-29 (12.6%) and 30-55 (11.4%). Seventy-nine percent of pregnancies to mothers less than 20 with a short interpregnancy interval were unintended (unwanted or wanted later), while 68.6 percent and 56.9 percent of pregnancies to mothers 20-29 and 30-55 with a short interpregnancy interval were unintended. Mothers who were less than 20 years of age who had a short interpregnancy interval had the highest rate of reported birth control failure (42.2%) compared with mothers in the older age groups. The proportion of mothers with a short interpregnancy interval who were not using birth control at the time of conception was higher among mothers 20-29 (63.1%) and mothers 30-55 (82.9%) than teenage mothers (57.8%). Mothers less than 20 and 30-55 years of age with a short interpregnancy interval were more likely to be black, (58.4% and 80.1%, respectively), whereas mothers 20-29 were more likely to be white (52.1%). Ninety percent of teenage mothers and almost three-fourths of mothers 20-29 were on Medicaid, while only 28.9 percent of 30-55 year old mothers received government assistance. Among the mothers with a short interpregnancy interval, teenage mothers were more likely to have had a low pre-pregnancy BMI, receive inadequate prenatal care, have less than a high school education, be unmarried, and to be poor compared to older mothers.

From Tables 1 and 2, characteristics of mothers with a short interpregnancy interval were different

than those with a longer interval. Among mothers less than 20 years of age, the rate of low birthweight was higher for those with a short interpregnancy interval (10.2%) than an interval of 12 or more months (7.6%). Marital status among the teenage mothers differed greatly according to interpregnancy interval. Twenty-eight percent of teenagers with a short interval were married, compared to only 6.9 percent with a longer interpregnancy interval. In comparison to teenagers with a longer interpregnancy interval, teenage mothers with a short interpregnancy interval were more likely to be white, smokers, have less than a high school education, have an unintended pregnancy, have had birth control failure, and have had a low pre-pregnancy BMI.

Characteristics of mothers in the 20-29 age group with short interpregnancy intervals differed from women in the same age group with a longer interpregnancy interval (Tables 1 and 2). A greater percentage of 20-29 year old mothers with a short interpregnancy interval had a low birthweight infant (8.2%) compared with those with a longer interval (5.7%). Mothers 20-29 with a short interpregnancy interval were more likely to be black, have a previous low birthweight infant, have an unintended pregnancy, be on Medicaid, receive inadequate prenatal care, be poor, and have a previous child who died than 20-29 year old mothers with a longer interpregnancy interval. In comparison to mothers 20-29 years old with a longer interpregnancy interval, 20-29 year old mothers with a short interpregnancy interval were less likely to be married, have greater than a high school education, and to have smoked.

From these same tables, among mothers 30-55, the rate of low birthweight was exactly the same among those with a short interpregnancy interval as it was for mothers with a longer interval (5.8%). Mothers in this age group who had a short interpregnancy interval were more likely to be black, have greater than a high school education, have had an unintended pregnancy, had a previous child who died, and to be at or below 185 percent of poverty than mothers 30-55 with a longer interpregnancy interval. Among this age group, those with a short interpregnancy interval were less likely to be smokers, use birth control, be on Medicaid, and to receive adequate or adequate plus prenatal care compared to those women with a longer interval.

Table 3 shows the significant factors associated with a short interpregnancy interval. The correlates differed by age group, so they are presented separately. Among mothers less than 20 years of age, smoking during pregnancy was the only significant correlate of an interpregnancy interval of less than 12 months. The mothers who had a short interpregnancy interval were 3 times more likely to smoke during pregnancy compared to mothers with longer pregnancy intervals (95%CI 1.19-8.03).

The correlates of short interpregnancy interval among mothers 20-29 years old included maternal race, smoking during pregnancy, pregnancy intention, having a previous child who died, receiving inadequate prenatal care, and parity. Adjusting for pregnancy intention, having a previous child who died, prenatal care, and parity, black mothers in this age group were 31 percent less likely (95%CI 0.49-0.98) to have a short interpregnancy interval than white mothers. Compared to wanting the pregnancy, mothers in this age group who were unsure about pregnancy intention were over three times more likely (OR=3.39, 95%CI 1.86-6.19) to have had a short interpregnancy interval; mothers who had a mistimed pregnancy were 2.8 times more likely (95%CI 1.89-4.06) to have had a short interpregnancy interval; and mothers who did not want the pregnancy then or at any time in the future were twice as likely (95%CI 1.19-3.48) to have had a short interpregnancy interval after adjusting for other significant predictors. Mothers who had a previous child who died were 3.5 times more likely (95%CI 1.63-7.69) to have a short interpregnancy interval than mothers who did not have a child who died. Mothers 20-29 years of age who had inadequate prenatal care were 2.36 times more likely (95%CI 1.53-3.63) to have had a short interpregnancy interval than mothers with adequate prenatal care. And after adjusting for all other significant factors, mothers with three or more previous live births were almost three times more likely (95%CI 1.74-4.91) to have a short interpregnancy interval compared to mothers with one previous live birth.

The correlates for having an interpregnancy interval of less than 12 months among the oldest group of mothers, 30-55 years, were maternal race, pregnancy intention, and having a previous child who died. After adjusting for other significant predictors in the model, black women were 55 percent less likely to have short interpregnancy interval (OR=0.45, 95%CI 0.24-0.85) than white women. Having a short interpregnancy interval increased the risk for reporting a mistimed pregnancy among these mothers to 5.5 (95%CI 3.05-9.99). And mothers who had a previous child who died were 5.5 times more likely (95%CI 1.89-16.06) to have an interpregnancy interval of less than 12 months than mothers who did not experience death of a previous child.

Table 4 shows the Odds Ratios for the association between short interpregnancy interval and low birthweight. Although there was no evidence of significant statistical interaction of age in the association, the results for the three age groups do differ and are presented separately. After adjusting for the above confounders, the association for interpregnancy interval was strongest for the youngest group of mothers. Mothers less than 20 years of age who had an interpregnancy interval of less than 12 months were 71 percent more likely to deliver a low birthweight infant than mothers with an interpregnancy interval of 12 or more months, although this association was not significant. Mothers 20-29 years of age who had a short interpregnancy interval were 42 percent more likely to have a low birthweight infant (95%CI 1.03-1.97). And among mothers 30-55 years with a short interpregnancy interval, there is no increase in risk for low birthweight compared to those mothers with a longer pregnancy interval, in fact there appears to be a very slight decrease in risk.

Discussion

The association between short interpregnancy interval and low birthweight increases as the age of the mothers decreases. The percent of low birthweight among mothers with short interpregnancy interval is highest among the youngest mothers (10.2%), decreases with mothers 20-29 (8.2%), and is lowest for the oldest mothers 30-55 years of age (5.8%). The percent of low birthweight among the 30-55 year old mothers is the same regardless of interpregnancy interval. The rationale behind a slight decrease in risk among mothers 30-55 years of age who have an interpregnancy interval of less than 12 months is that these mothers are planning for this pregnancy, and are adequately prepared to have a very healthy pregnancy and infant. Compared to teenage mothers and mothers 20-29 years of age who have a short interpregnancy interval, mothers 30-55 are much more likely to be married, to have greater than a high school education, to intend to have the pregnancy, to not use birth control, not to be on Medicaid, to receive adequate or adequate plus prenatal care, and to be above 185 percent of poverty.

The strongest association was seen in the mothers less than 20 years old. Almost half of these mothers had a short interpregnancy interval, whereas only 16 percent of mothers 20-29 and only 7 percent of 30-55 year old mothers had the exposure. A large proportion of these mothers with a short interpregnancy interval, almost 27 percent, were underweight before pregnancy compared to only 12.3 percent of mothers 20-29 and 13.8 percent of the oldest group of mothers. Assuming that being underweight would indicate that these mothers' bodies may not be fully renourished from the strain of the previous pregnancy and birth, this could explain why the association is so much higher among the youngest mothers. Also, being a teenage mother to a small child while pregnant with a second child would seem to be very stressful emotionally, which could also effect the birth outcome. Unfortunately, data on the kinds and levels of stress experienced by teenage mothers taking care of a small child can not be collected from the PRAMS survey.

While the association was strong among this group of mothers, it was not statistically significant. There were only 315 mothers under 20 years of age, which was only 6 percent of the total number of

women included in the study. This could explain why the confidence interval for this group was so wide and included the null value.

There were 180 mothers who had to be excluded from the study because they were missing information on interpregnancy interval. By excluding these mothers from the sample, the findings from this study could be an underestimate of the true association. The percent of low birthweight among mothers who were missing interpregnancy interval information was higher than the percent of low birthweight among mothers with a short interpregnancy interval among each age. Almost 17 percent of mothers less than 20 with a missing interval delivered low birthweight infants, and the percentage of low birthweight infants among women 20-29 and 30-55 was 14.8 and 7.3, respectively (data not shown).

Conclusion

The objective of this newsletter was to describe the characteristics of mothers who are more likely to become pregnant again less than 12 months after delivery. The factors that are correlated with a short interpregnancy interval clearly differ by age group along with the risk of low birthweight associated with shorter intervals. The findings from this study show that the youngest group of women (less than 20 years) are at greatest risk of delivering a low birthweight infant if the pregnancy occurs too soon after a previous birth. Mothers 20-29 years of age with short interpregnancy intervals are also at increased risk for low birthweight. The public health implications for these results suggest that mothers, especially those less than 30 years of age, should be encouraged to use some form of birth control for at least one year after delivery to increase the chances of delivering a healthy, normal birthweight baby.

References

1. Adams MM, Delaney KM, Stupp PW, McCarthy BJ, Rawlings JS. The relationship of interpregnancy interval to infant birthweight and length of gestation among low-risk women, Georgia. *Paediatr Perinat Epidemiol* 1997; 11: 48-62.
2. Basso O, Olsen J, Knudsen LB, Christensen K. Low birth weight and preterm birth after short interpregnancy intervals. *Am J Obstet Gynecol* 1998; 178: 259-263.
3. Ekwo EE, Moawad A. The relationship of interpregnancy interval to the risk of preterm births to black and white women. *Int J Epidemiol* 1998; 27: 68-73.
4. Khoshnood B, Lee K, Wall S, Hsieh H, Mittendorf R. Short interpregnancy intervals and the risk of adverse birth outcomes among five racial/ethnic groups in the United States. *Am J Epidemiol* 1998; 148: 798-805.
5. Rawlings JS, Rawlings VB, Read JA. Prevalence of low birth weight and preterm delivery in relation to the interval between pregnancies among white and black women. *New Engl Jour Med* 1995; 332: 69-74.
6. Public Health Service. Healthy People 2000: National health promotion and disease prevention objectives—full report, with commentary. Washington, DC: US Department of Health and Human Services, Public Health Service, 1991. DHHS publication no. (PHS)91-50212.
7. Division of Biostatistics, Office of PHSIS, South Carolina Department of Health and Environmental Control, South Carolina Vital and Morbidity Statistics: 1997. Columbia, SC: February 1999.

8. Ventura SJ, Martin JA, Curtin SC, Mathews TJ. Births: Final Data for 1997. National vital statistics reports; vol 47 no. 18. Hyattsville, Maryland: National Center for Health Statistics. 1998.
9. Blankson ML, Cliver SP, Goldenberg RL, Hickey CA, Jin J, Dubard MB. Health behavior and outcomes in sequential pregnancies of black and white adolescents. *JAMA* 1993; 269: 1401-1403.
10. Kotelchuck M. An evaluation of the Kessner Adequacy of Prenatal Care Index and a proposed Adequacy of Prenatal Care Utilization Index. *Am J Public Health* 1994; 84: 1414-1420.

Acknowledgments

Authors:

Kristen Helms, MSPH, PRAMS Project Coordinator
Mary Kate Dillard, PRAMS Data Manager

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) 898-3624

Douglas E. Bryant, MPH, Commissioner
Murray B. Hudson, MPH, Director of Public Health Statistics and Information Systems
James Ferguson, DrPH, Deputy Director of Public Health Statistics and Information Systems
Guang Zhao, PhD, Director of Division of Biostatistics and PRAMS Project Director

We would like to express special thanks to Maureen Sanderson, PhD, Ann Coker, PhD, and Cheryl Addy, PhD at the University of South Carolina for their guidance in this study.

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

Table 1. Maternal and demographic characteristics of women with **short interpregnancy intervals** (less than 12 months) by age group.

Characteristics	<20 years	20-29 years	30-55 years
	Percent* (Standard Error)		
Birthweight			
LBW (<2500g)	10.2 (1.8)	8.2 (0.8)	5.8 (1.3)
NBW (>=2500g)	89.8 (1.8)	91.8 (0.8)	94.2 (1.3)
Marital status			
married	28.8 (5.6)	56.6 (3.4)	83.7 (4.5)
other	71.2 (5.6)	43.4 (3.4)	16.3 (4.5)
Race			
black	58.4 (6.3)	47.9 (3.4)	80.1 (4.6)
white	41.6 (6.3)	52.1 (3.4)	19.9 (4.6)
Education			
<high school	75.2 (5.3)	23.4 (2.9)	4.8 (2.4)
high school	23.2 (5.2)	51.3 (3.4)	25.7 (5.6)
>high school	1.6 (1.3)	25.3 (2.9)	69.5 (5.8)
Previous LBW			
yes	11.2 (3.3)	16.8 (2.6)	11.4 (3.9)
no	88.8 (3.3)	83.2 (2.6)	88.6 (3.9)
Smoked			
yes	26.0 (5.9)	12.6 (2.1)	11.4 (3.8)
no	74.0 (5.9)	87.4 (2.1)	88.6 (3.8)
Pregnancy intention			
unsure/missing	3.8 (2.3)	9.3 (1.9)	5.1 (2.5)
mistimed	57.2 (6.1)	46.1 (3.4)	51.7 (6.3)
unwanted	21.9 (4.9)	22.5 (2.9)	5.2 (2.3)
wanted	17.1 (4.3)	22.2 (2.7)	38.0 (6.1)
Birth Control			
non-use	36.7 (6.3)	42.4 (3.4)	58.5 (6.2)
disuse	21.1 (5.1)	20.7 (2.6)	24.4 (5.4)
failed use	42.2 (6.4)	36.9 (3.3)	17.1 (4.7)
Medicaid			
yes	90.0 (3.5)	72.4 (3.0)	28.9 (5.6)
no	10.0 (3.5)	27.6 (3.0)	71.1 (5.6)
Previous child died			
yes	0.8 (0.4)	6.7 (1.9)	7.1 (3.2)
no	99.2 (0.4)	93.3 (1.9)	92.9 (3.2)
Pre-pregnancy BMI			
low	26.7 (5.8)	12.3 (2.1)	13.8 (4.5)
normal	40.6 (6.1)	46.6 (3.4)	49.0 (6.3)
high	17.8 (5.1)	29.1 (3.1)	27.8 (5.7)
missing	14.9 (4.5)	12.0 (2.1)	7.4 (2.9)
Prenatal Care**			
inadequate	38.8 (6.1)	33.3 (3.2)	17.5 (5.0)
intermediate	17.6 (4.8)	12.3 (2.2)	14.5 (4.5)
adequate	28.9 (5.9)	30.8 (3.1)	37.9 (6.1)
adequate plus	14.7 (5.6)	23.6 (3.0)	30.1 (5.7)

Characteristics	<20 years	20-29 years	30-55 years
	Percent* (Standard Error)		
Parity			
1	88.4 (3.6)	49.9 (3.4)	56.7 (6.2)
2	9.6 (3.3)	30.7 (3.1)	26.1 (5.5)
3+	1.9 (1.6)	19.4 (2.7)	17.2 (4.4)
Poverty			
<100% (poor)	57.6 (5.3)	56.1 (3.3)	26.4 (5.5)
100-185% (near)	12.5 (3.8)	18.9 (2.6)	25.1 (5.6)
>185% (not poor)	0.5 (0.3)	12.6 (2.2)	42.1 (6.1)
missing	29.4 (6.1)	12.4 (2.1)	6.4 (3.1)

*percents are weighted

**Kotelchuck Index for adequacy

Table 2. Maternal and demographical characteristics of women with **interpregnancy intervals of 12 or more months** by age group.

Characteristics	<20 years	20-29 years	30-55 years
	Percent* (Standard Error)		
Birthweight			
LBW (<2500g)	7.6 (1.4)	5.7 (0.3)	5.8 (0.3)
NBW (>=2500g)	92.4 (1.4)	94.3 (0.3)	94.2 (0.3)
Marital status			
married	6.9 (5.2)	64.3 (1.5)	81.8 (1.4)
other	73.1 (5.2)	35.7 (1.5)	18.2 (1.4)
Race			
black	69.4 (5.6)	42.7 (1.6)	32.8 (1.7)
white	30.6 (5.6)	57.3 (1.6)	67.2 (1.7)
Education			
<high school	67.0 (5.7)	20.4 (1.3)	8.1 (1.0)
high school	29.0 (5.6)	50.2 (1.6)	32.1 (1.7)
>high school	4.0 (2.0)	29.4 (1.4)	59.8 (1.7)
Previous LBW			
yes	11.1 (3.4)	10.1 (0.9)	11.2 (1.1)
no	88.9 (3.4)	89.9 (0.9)	88.8 (1.1)
Smoked			
yes	10.2 (3.3)	16.4 (1.1)	16.6 (1.3)
no	89.8 (3.3)	83.6 (1.1)	83.4 (1.3)
Pregnancy intention			
unsure/missing	6.3 (2.8)	5.6 (0.7)	7.2 (0.9)
mistimed	55.0 (6.1)	31.8 (1.4)	17.4 (1.3)
unwanted	14.2 (4.0)	15.4 (1.2)	15.7 (1.3)
wanted	24.5 (5.2)	47.2 (1.5)	59.7 (1.7)
Birth Control			
non-use	46.4 (6.2)	47.9 (1.6)	52.9 (1.8)
disuse	21.3 (5.5)	25.8 (1.4)	25.2 (1.5)
failed use	32.3 (5.9)	26.3 (1.4)	21.9 (1.5)
Medicaid			
yes	91.0 (3.8)	59.9 (1.5)	30.0 (1.6)
no	9.0 (3.8)	40.1 (1.5)	70.0 (1.6)
Previous child died			
yes	1.3 (1.1)	1.4 (0.3)	2.6 (0.5)
no	98.7 (1.1)	97.4 (0.3)	97.4 (0.5)
Pre-pregnancy BMI			
low	18.0 (4.4)	16.5 (1.2)	12.9 (1.2)
normal	47.1 (6.2)	48.3 (1.6)	51.7 (1.7)
high	22.7 (5.3)	25.9 (1.4)	26.7 (1.6)
missing	12.2 (3.9)	9.3 (0.9)	8.8 (1.0)
Prenatal Care**			
inadequate	38.7 (6.1)	14.7 (1.1)	8.2 (0.9)
intermediate	8.5 (3.2)	15.1 (1.1)	14.9 (1.3)
adequate	32.0 (5.7)	40.0 (1.5)	45.7 (1.7)
adequate plus	20.8 (5.0)	30.2 (1.4)	31.2 (1.6)

Characteristics	<20 years	20-29 years	30-55 years
	Percent* (Standard Error)		
Parity			
1	89.1 (4.0)	68.4 (1.5)	54.0 (1.7)
2	10.5 (4.0)	25.2 (1.4)	29.6 (1.6)
3+	0.4 (0.3)	6.4 (0.8)	16.4 (1.4)
Poverty			
<100% (poor)	58.0 (6.2)	44.8 (1.6)	24.0 (1.5)
100-185% (near)	14.9 (4.4)	25.3 (1.3)	19.2 (1.4)
>185% (not poor)	5.7 (3.3)	20.7 (1.2)	49.4 (1.7)
missing	21.4 (5.3)	9.2 (0.9)	7.4 (0.9)

*percents are weighted

**Kotelchuck Index for adequacy

Table 3. Correlates of having a **short interpregnancy interval** (<12 months) among mothers in each age group.

	Odds ratios (95%CI)
<u>Mothers less than 20:</u>	
Smoked during pregnancy	
<i>yes</i>	3.09 (1.14-8.37)**
<i>no*</i>	1.00
<u>Mothers 20-29:</u>	
Maternal race	
<i>black</i>	0.69 (0.48-0.99)**
<i>white*</i>	1.00
Smoked during pregnancy	
<i>yes</i>	0.55 (0.33-0.91)**
<i>no*</i>	1.00
Pregnancy intention	
<i>unsure/missing</i>	3.39 (1.81-6.36)**
<i>mistimed pregnancy</i>	2.77 (1.86-4.13)**
<i>unwanted pregnancy</i>	2.04 (1.16-3.57)**
<i>wanted*</i>	1.00
Previous child died	
<i>yes</i>	3.54 (1.57-7.96)**
<i>no*</i>	1.00
Prenatal Care adequacy***	
<i>inadequate</i>	2.36 (1.50-3.70)**
<i>intermediate</i>	1.19 (0.70-2.03)
<i>adequate*</i>	1.00
<i>adequate plus</i>	0.96 (0.62-1.48)
Parity	
<i>1*</i>	1.00
<i>2</i>	1.42 (0.97-2.07)
<i>3 or more</i>	2.93 (1.70-5.02)**
<u>Mothers 30-55:</u>	
Maternal race	
<i>black</i>	0.45 (0.23-0.87)**
<i>white*</i>	1.00
Pregnancy intention	
<i>unsure/missing</i>	1.11 (0.37-3.30)
<i>mistimed pregnancy</i>	5.52 (2.97-10.26)*
<i>unwanted pregnancy</i>	0.62 (0.21-1.84)
<i>wanted*</i>	1.00
Previous child died	
<i>yes</i>	5.50 (1.80-16.84)**
<i>no*</i>	1.00

*reference group

**significant predictors

***Kotelchuck Index

Table 4. Association between **short interpregnancy interval** and **low birthweight** among women in each age group.

	<20 years	20-29 years	30-55 years
	OR (95%CI)**	OR (95%CI)**	OR (95%CI)**
<12 months	1.71 (0.77-3.82)	1.42 (1.02-1.99)	0.90 (0.46-1.77)
12+ months*	1.00	1.00	1.00

*reference group

**adjusted for maternal race, smoking, previous LBW, and prenatal care