PRAMS PERSPECTIVES
A Pregnancy Risk Assessment Monitoring System Report, May 2008

Preconception Health and Health Care Among Utah Women

Background

Good health before becoming pregnant is an important contributor to a healthy pregnancy and baby. Optimal health includes healthy nutrition, maintaining a healthy weight, managing chronic diseases, and being tobacco and substance-free. Studies have shown that eating a nutritious diet and being at an ideal body mass index prior to pregnancy can lead to healthier pregnancy outcomes. [1] Research also indicates that, for optimum effect on reducing the risk for neural tube defects, women should begin taking folic acid supplements at least three months before conception.[2] [3] During the first weeks of pregnancy, exposure to alcohol, tobacco, and other drugs can adversely affect fetal development and result in pregnancy complications and poor outcomes for both the mother and infant. [4] Research also indicates that improved control of hyperglycemia prior to pregnancy reduces perinatal mortality and congenital malformation rates in women with diabetes. [5] These risks can be reviewed and addressed in a preconception visit with a health care provider to reduce possible impact during pregnancy.

Assessing pre-pregnancy risk is a key component of the preconception visit. Looking at health risks and modifiable behaviors that are known to affect pregnancy outcomes, we found the following prevalence rates among Utah women using data from the Utah Pregnancy Risk Assessment Monitoring System (2006):

- Overweight – 22.4% (n=11,7246)
- Obesity – 13.9% (n=6,947)
- Tobacco use in the three months before pregnancy – 12.1% (n=6,279)
- Alcohol use in the three months before pregnancy – 21.9% (n=11,226)
- No daily multivitamin with folic acid intake – 47.6% (n=24,895)

Utah Behavioral Risk Factor Surveillance System (BRFSS) data (2006) indicate the following prevalence rates of other high risk conditions among Utah women of childbearing age (18-49 yrs.) that could also affect preconception health and therefore pregnancy outcomes:

What is PRAMS?

Data in this newsletter were provided by the Utah Pregnancy Risk Assessment Monitoring System (PRAMS). PRAMS is an ongoing, population-based risk factor surveillance system designed to identify and monitor selected maternal experiences that occur before and during pregnancy and experiences of the child's early infancy. Each month, a sample of approximately 200 women, two to four months postpartum, is selected. The sample is stratified based on maternal education and infant birth weight so that inferences and comparisons about these groups can be determined. The results are weighted for sample design and non-response.

PRAMS is intended to help answer questions that birth certificate data alone cannot answer. Data will be used to provide important information that can guide policy and other efforts to improve care and outcomes for pregnant women and infants in Utah. Women were asked questions about prenatal care, breastfeeding, smoking and alcohol use, physical abuse, and early infant care.

The PRAMS data reported here represent all live births to Utah residents from 2004-2006. A total of 7,124 mothers were selected to participate in the project and 5,918 mothers responded for an uweighted response rate of 83%. Survey results were weighted for non-response so that analyses could be generalized to the entire population of Utah women delivering live births.

- Diabetes – 1.7% (n=10,160)
- Heart Disease – 2.0% (n=12,000)
- Asthma – 10.6% (n=63,350)

These rates are of concern because critical periods of fetal development occur in many cases before a woman is aware of her pregnancy. This means some significant pregnancy outcomes are determined prior to the woman's initial prenatal visit. Although early and regular prenatal care is important, planning for pregnancy and being at optimal health prior to pregnancy are keys to improving a woman's chance of having a healthy pregnancy and baby. The purpose of this study was to elucidate characteristics of women who sought preconception care in order to target interventions aimed at improving preconception health.

While there are many studies that support the benefits of preconception care, there are few studies that describe which women are most likely to get preconception care.

Methods

For this report, women self-reported whether they received a preconception visit. PRAMS respondents are asked, "Before you got pregnant with your new baby, did you talk with a doctor, nurse, or other health care worker to prepare for a healthy pregnancy?"

Only women who reported an intended pregnancy without using Artificial Reproductive Technology (ART) were included in this analysis. Unintended pregnancies were excluded, as the recommendations for preconception care were for women planning a pregnancy. Pregnancy intention was self-reported by participants. Women who conceived with ART were excluded, as the authors believed the women were seeking preconception care for their infertility.

For this study, the independent variable was the self-report of a preconception visit with a health care provider. Dependent variables included maternal age at delivery, maternal education, marital status at delivery, maternal race, Hispanic ethnicity, number of previous live births, insurance before conception, previous macrosomic infant, federal poverty level, and physical abuse by an intimate partner in the year before conception. Federal poverty level was derived from the self-report of household income and number of income dependents and was categorized using Health and Human Services poverty guidelines for the corresponding year.

Using SAS callable SUDAAN (Software for the Statistical Analysis of Correlated Data), PRAMS data were analyzed using chi-square tests and multiple logistic regression to calculate adjusted odds ratios (aOR) and 95% confidence intervals (CI). All statistical tests were two-sided, with a significance level of alpha = 0.05. The final regression model included the following variables: age, education, race, ethnicity, marital status, previous live births, federal poverty level (FPL), health insurance before pregnancy, and physical abuse before pregnancy. Referent categories were ages 25-29, high school graduate, white race, non-Hispanic ethnicity, married, 1-4 previous live births, 185% or greater of the federal poverty level, insurance before conception, and no partner abuse before conception.

Results

Despite the abundance of published research about the importance of preconception care, [7] only 33.4% of Utah women who delivered a live birth during the years 2004-2006 reported a preconception visit with their health care provider. Table 1 depicts the percentage of women who reported a preconception visit by maternal characteristics. Chi-square analysis revealed that women were significantly more likely to report a preconception visit if they were:

- 25 to 34 years of age
- College graduates
- Married
- Non-Hispanic
- Primigravid
- Of higher income level

Table 1 also indicates that Utah women with known risk factors for poor pregnancy outcomes were significantly less likely to seek a preconception care visit. These risk factors include:

- Reporting physical abuse before pregnancy
- Reporting a previous macrosomic infant

Multiple logistic regression results showed that women younger than age 20 (aOR) 2.8, CI 1.3-5.7), women aged 20-24 (aOR 2.0, CI 1.5-2.7), and women who lacked health insurance prior to pregnancy (aOR 1.7, CI 1.2 – 2.5) had significantly higher odds of not reporting a preconception visit. These results also indicated that being primigravid (aOR .53, CI .42-.69) and having 16 years or more of education (aOR .73, CI .57-.90) had significantly higher odds of reporting a preconception visit.

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Table 1

Percentage of Women With an Intended Pregnancy Who Reported a Preconception Visit by Selected Maternal Characteristics, 2004–2006 Utah PRAMS Data

Characteristics	Percent	+ 95% CI%	P-Value
Among all Intended Pregnancies	33.4%	± 2.2%	
Maternal Age			<0.0001
≤ 19	13.1%	± 6.6%	
20 - 24	24.2%	± 3.7%	
25 - 29	37.7%	± 3.6%	
30 - 34	39.8%	± 5.0%	
35 +	32.1%	± 7.2%	
Education Level			<0.0001
Less than High School	21.3%	± 3.8%	
Completed High School	26.6%	± 3.4%	
Some College	33.1%	± 4.4%	
College Graduate	41.4%	± 4.1%	
Marital Status			<0.0001
Married	34.6%	± 2.3%	
Unmarried	16.2%	± 5.4%	
Ethnicity			<0.001
Hispanic	24.5%	± 4.8%	
Non-Hispanic	34.7%	± 2.4%	
Previous Live Births			<0.001
1 - 4	31.1%	± 2.6%	
5 or more	24.0%	± 13.1%	
None	38.7%	± 4.0%	
Federal Poverty Level (FPL)			<0.05
<100%	20.1%	± 4.3%	
101 - 133%	25.5%	± 7.6%	
134 - 185%	28.4%	± 5.4%	
185%+	38.5%	± 2.9%	
Insurance Before Pregnancy			<0.0001
Yes	37.4%	± 2.6%	
No	18.4%	± 3.4%	
Physical Abuse Before Pregnancy			<0.05
Yes	20.0%	± 11.9%	
No	33.8%	± 2.2%	
Previous Macrosomia			<0.001
Yes	19.2%	± 8.0%	
No	34.2%	± 2.2%	

Table 2 shows selected preconception behaviors among women who did and did not report a preconception visit. Women with a preconception visit were significantly more likely to report taking a daily multivitamin, to report not smoking prior to pregnancy, and to receive first trimester prenatal care. Interestingly, women who reported a preconception visit were also significantly more likely to report drinking in the three months before pregnancy. Seeking preconception care appears to follow demographic profiles of other positive and preventive health behaviors, with the exception of alcohol intake in the three months prior to pregnancy.

These data found no significant differences in the reporting of preconception visits among women who were overweight or obese, had pre-existing diabetes, or had delivered a previous low birth weight or preterm infant (data not shown). These high risk women who would benefit most from preconception intervention were no more likely than their healthier counterparts to report having a preconception visit.

Table 2. Percentage of Women Who Reported Selected Health Behaviors in the Preconception Period and Early Pregnancy by Preconception Care Status, Utah 2004–2006 PRAMS Data

	Percent Among Women With a Preconception Visit (±95% CI)	Percent Among Women Without a Preconception Visit (±95%CI)	P-Value
Took a Multivitamin Daily	58.2 ± 4.0	27.1 ± 2.5	<0.001
Smoked in Three Months Before Pregnancy	3.9 ± 1.4	5.6 ± 1.1	0.06
Drank in Three Months Before Pregnancy	17.7 ± 3.0	14.2 ± 1.8	0.05
Received First Trimester Prenatal Care	90.5 ± 2.4	82.1 ± 2.1	<0.001

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Limitations

Limitations of this study include the wording of the current PRAMS question on preconception care does not lend insight into the content of the visit. Although women reported seeing a health care provider, it is unknown whether any health or behavioral modifications were made as a result of this visit.

Discussion

This analysis, one of few published using population survey data, reveals that the women who were least likely to seek preconception health care have characteristics commonly associated with poorer pregnancy outcomes, such as low birth weight and preterm birth. Women who reported not having insurance prior to pregnancy were nearly twice as likely to report not receiving a preconception health visit, indicating lack of insurance as a barrier. Considering the abundance of research published in the last few years noting the importance of preconception health and health care, [7] there are clearly many missed opportunities to improve pregnancy outcomes through these means. This analysis reinforces the need for health insurance reform to assure that all Utah women of childbearing age have access to insurance that covers preconception health care costs.

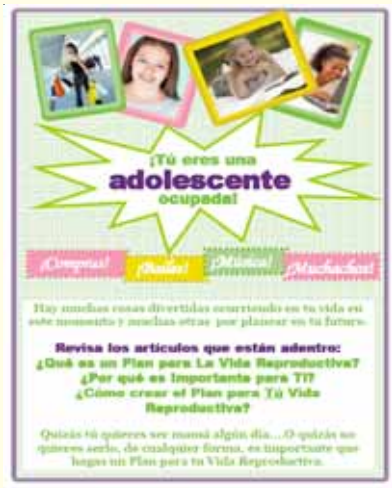
A sizable number of Utah women of childbearing age are at higher risk for poor pregnancy outcomes due to their preconception health status and/or high risk behaviors. In Utah, obesity rates continue to rise each year and multivitamin intake is on the decline. Women with chronic health conditions continue to be represented in the pregnant population. The "Recommendations to Improve Preconception Health and Health Care in the United States, a Report of the CDC/ATSDR Preconception Care Work Group and the Select Panel on Preconception Care" lists as one of its 10 recommendations the following: "Individual Responsibility across the Lifespan." The recommendation implores, "Development and dissemination of reproductive life planning tools for women in their childbearing years, along with development, dissemination, and evaluation of individual health education materials for women regarding risk factors, including materials related to biomedical, behavioral, and social risks known to affect pregnancy outcomes."[8] The Utah Department of Health and its partners are working to educate women of childbearing age and their partners about issues that are critical to address prior to conception through the development and dissemination of reproductive life plans designed for specific target audiences of women of childbearing age.

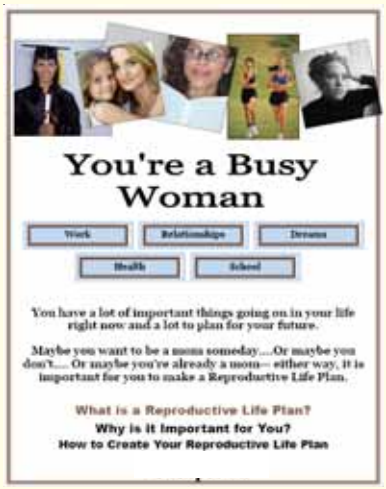
Public health policymakers should continue to develop and support public health practice collaborative groups to promote shared learning and dissemination of approaches for increasing preconception health to maximize optimal pregnancy outcomes among Utah women.

It is important to note that the data used in this report were collected prior to the publication of the preconception recommendations from the CDC. This analysis will help us to understand demographic profiles of women who do not seek preconception care and aid in targeting messages regarding the importance of preconception health and consultation.

Reproductive Life Plan Tools

The Utah Department of Health has developed two Reproductive Life Plan Tools; one for teenage young women, which is availabe in English and Spanish, and the other is designed for adult women and available in English only. To view or download these documents please go to: http://health.utah.gov/rhp/rhp-public.htm.





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