Health By Numbers
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Less Than Optimal Oral Health Care During Pregnancy in Rhode Island Women: Oral Health Care as a Part of Prenatal Care

Junhie Oh, BDS, MPH, Laurie Leonard, MS, Deborah Fuller, DMD, MS, and Katherine Miller, BA

It is well-documented that hormonal and immunologic changes during pregnancy predispose women to various oral health problems including gingival/periodontal swelling or inflammation, tooth erosion, and dental decay.[1,2,3] The receipt of preventive and therapeutic oral health services can prevent further complications of dental diseases during pregnancy and the postpartum period. Furthermore, current evidence-based research demonstrates the potential benefits of maintaining good oral health during pregnancy to control other common pregnancy complications, such as gestational diabetes and preeclampsia (pregnancy-induced hypertension). Studies have suggested that gingival or periodontal infection-related bacteria can adversely affect the glycemic control of gestational diabetes and the pathogenesis of preeclampsia.[4,5,6] In addition, evidence shows that cariogenic bacteria are typically transmitted from mother to her child.[7,8] Pregnant women and potential caregivers who have extensive past or current tooth decay should be advised during pregnancy about the use of fluoride, antimicrobial products such as xylitol and chlorhexidine, dietary control, and behavioral changes and techniques to reduce cariogenic bacteria transmission to their babies.[9]

The Rhode Island Oral Health Program promotes a dental visit for all pregnant women to obtain counseling on oral health care and dental hygiene, preventive services, and treatment needed during their prenatal care period. However, no report has yet been available to assess oral health care access and utilization status of Rhode Island's pregnant women. The objectives of this report are to (a) document the most recent estimates of Rhode Island women who received dental care during their pregnancy, (b) determine the prevalence of oral health care education provision for women in their prenatal care period, and (c) discuss how Rhode Island can ensure that all women obtain appropriate oral health care and education during their prenatal period.

Methods

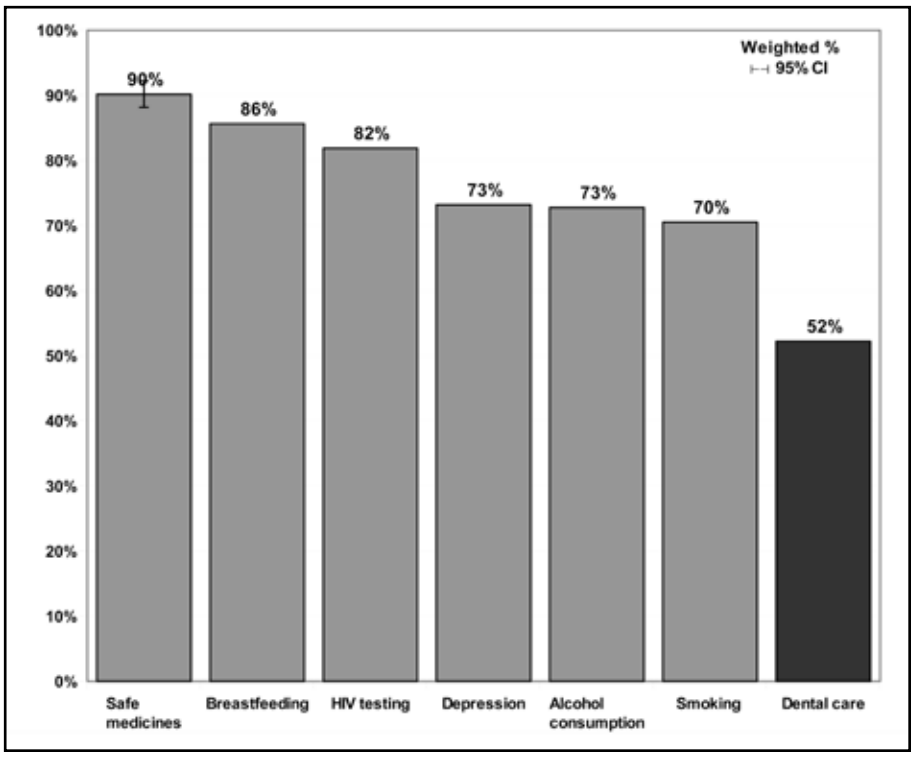
The data used for this analysis were obtained from the 2009 Rhode Island Pregnancy Risk Assessment Monitoring System (**PRAMS**). PRAMS is an ongoing statewide mail-survey with a telephone follow up component. Women who recently gave birth are randomly selected from the Vital Records birth file. PRAMS collects self-reported information on maternal and infant health behaviors and experiences that occur before, during, and after pregnancy. The survey is supported by the Centers for Disease Control and Prevention (**CDC**), and 37 states currently participate in PRAMS. Rhode Island began conducting PRAMS in 2002 and has achieved a weighted response of at least 70% each year since. The Rhode Island PRAMS Program sent questionnaires to 1,853 women who delivered a live birth in 2009 and received responses from 1,294 women (71.4% weighted response rate).

Table 1. Percent of Rhode Island Women Who Went to a Dentist or Dental Clinic During Pregnancy, 2009 Rhode Island PRAMS

Variable Category	Sample size*	Weighted % (95% CI†)	p-value
All women	1,243	52.7 (49.3–56.1)	–
Age (years)			
<20	113	37.3 (25.9–48.8)	<.0001
20–29	595	45.4 (40.5–50.4)	
≥30	535	65.0 (60.1–70.0)	
Marital status			
Married	697	60.8 (56.4–65.2)	<.0001
Other	546	41.8 (36.5–47.1)	
Maternal education			
≤High school	494	44.1 (50.2–61.5)	<.0001
College or higher	647	60.4 (35.2–44.1)	
Household income			
<$25,000	457	42.4 (36.7–48.2)	<.0001
$25,000–$49,999	235	40.4 (32.6–48.2)	
≥$50,000	466	70.9 (65.9–75.9)	
Residential area			
Core city (6 towns)§	665	44.6 (39.9–49.3)	<.0001
Rest of Rhode Island	578	60.3 (55.3–65.2)	
Prenatal coverage			
Medicaid/RIte Care	598	40.5 (35.5–45.4)	<.0001
Other	645	63.9 (59.3–68.4)	
WIC participation			
Yes	617	42.1 (37.2–47.1)	<.0001
No	626	62.6 (58.0–67.3)	
Race/ethnicity			
White, non-Hispanic	682	54.5 (50.0–59.0)	0.3073
Other, non-Hispanic	208	49.0 (40.2–57.8)	
Hispanic	321	48.9 (42.0–55.8)	

* Unweighted sample sizes for each category may not add up to 1,243 because of missing and excluded data (responses of "don't know," "not sure," or refused).
† CI = confidence interval
§ Central Falls, Newport, Pawtucket, Providence, West Warwick, and Woonsocket as defined by the population statistics of more than 15% of the children living in families below the federal poverty income level

Figure 1. Percent of Rhode Island Women Who Talked with Health Care Workers During Pregnancy, 2009, Rhode Island PRAMS.



The outcome variables in this report are (a) women's dental visit during pregnancy, and (b) discussion of dental care by a health care worker during pregnancy. The proportional data were weighted to the probability of selection, non-response and non-coverage, and adjusted to reflect the sample stratification on the state birth certificate file. In addition, bivariate analyses using the chi-square test were done to identify any significant differences between the various groups, with respect to women's dental visit during pregnancy. The statistical significance was tested at $P<0.05$. SAS survey procedures were used for the analyses in the study to account for the complex sampling design.

Results

Overall, approximately half of Rhode Island women reported they had a dental visit during their pregnancy (52.7%, 95% CI=49.3%–56.1%, Table 1). The proportion of pregnant women who visited a dentist or dental clinic was not uniform by age, marital status, educational attainment, household income level, or residential area. Women who were younger than 30 years of age, those who were not married, those who had lower education attainment or lower household income level, or women who lived in urban core cities were less likely to have a dental visit (Table 1). Only 40.5% of women who had prenatal care coverage by Medicaid/RIte Care and 42.1% of women who participated in WIC (Special Supplemental Nutrition Program for Women, Infants, and Children) were seen by a dentist or other oral health professional during their pregnancy (Table 1).

Many Rhode Island pregnant women did not receive oral health counseling from health care professionals during their prenatal care period. As shown in Figure 1, approximately half of women were advised on how to care for their teeth or gums (52.2%). Oral health care was not as frequently discussed with mothers as other prenatal health issues such as safe medicine uses (90.2%), breastfeeding (85.6%), HIV testing (81.9%), maternal depression (73.2%), alcohol consumption (72.7%), and smoking (70.5%).

Discussion

Opportunities to Improve Pregnant Women's Oral Health Care Access

According to the 2009 PRAMS findings, many Rhode Island women did not seek dental care during their pregnancy. There could be several reasons behind this finding. Similar to population-based surveys conducted in other states,[10] many Rhode Island women may not be aware of the importance of maintaining good oral hygiene and controlling oral disease during pregnancy.

In addition, less than optimal prevalence among Rhode Island women for visiting the dentist during pregnancy may be attributed to a lack of oral health care information and counseling in the prenatal health care setting. As found in this report and other studies, prenatal professionals (obstetricians, family physicians, and other prenatal care providers) do not routinely introduce oral health care topics, screen women's oral health care needs during prenatal care, or refer their patients to a dentist or dental clinic for examinations, preventive services, or required treatment.[11] Oral health education should be included as an integral part of prenatal care, and patients should be informed about the importance of maintaining good oral health during pregnancy and the relationship between maternal oral health status and future caries risk of their child.

Oral health professionals must address unnecessary treatment delay or deferral. Dentists often postpone treatment for pregnant women because they may not fully understand the physiological changes that occur during pregnancy and fetal development, or have misconceptions about the effect of dental treatments on pregnant women and their fetuses.[12] However, most dental problems can be treated with no alteration or modification of routine dental procedures. Further, the benefits of providing oral health care during pregnancy far outweigh potential risks when compared to the risk of not providing care. Evidence-based practice guidelines are currently available for dental and prenatal care providers.[12,13,14]

The prenatal period is an opportune time for women to access oral health services, particularly for low-income women who receive Medicaid/RIte Care dental insurance benefits only during their pregnancy. Financial barriers can be reduced or eliminated for these women by the comprehensive dental care benefit provided by Rhode Island Medicaid/RIte Care. However,

according to 2009 PRAMS data, the dental care benefit was not effectively utilized by Medicaid/RIte Care participants. Additionally, education efforts must be maintained and expanded for pregnant women who may not be aware of the covered dental services or who may face additional barriers, such as finding a dental provider or lack of transportation, to ensure all pregnant women receive preventive oral health services.

Conclusion

All pregnant women should obtain oral health services and oral health promotion/disease prevention education. Controlling oral diseases and improving oral health during pregnancy not only enhances women's overall health but also contributes to improving the oral health of their children. The Rhode Island Oral Health program promotes the integration of oral health into prenatal care. Prenatal care providers can play an important role in raising awareness about the importance of oral health during pregnancy and removing barriers to oral health care. Prenatal health care providers are encouraged to identify risk factors for oral disease, make a timely referral to an oral health professional for comprehensive evaluation during pregnancy, and promote completion of all necessary treatment during pregnancy. A coordinated effort between dental and prenatal professionals can benefit maternal and child health outcomes.

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Authors are affiliated with the Oral Health Program, Division of Community, Family Health and Equity, Rhode Island Department of Health. Junhie Oh, BDS, MPH, is the Oral Health Epidemiologist, Laurie Leonard, MS, is the Program Director, Deborah Fuller, DMD, MS, is the Public Health Dentist/Dental Sealant Coordinator, and Katherine Miller is the Program Coordinator/ Fluoridation Coordinator.

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Correspondence

Junhie Oh, BDS, MPH
Division of Community, Family Health & Equity
Rhode Island Department of Health
3 Capitol Hill, Room #309
Providence RI 02908
phone: (401) 222-5931
fax: (401) 222-1442
e-mail: Junhie.Oh@health.ri.gov