

Dental Care Use and Self-Reported Dental Problems in Relation to Pregnancy

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One of the Healthy People 2010 objectives is to increase the proportion of adults who use the oral health care system each year.¹ Prevalence rates of dental care use during pregnancy have been reported to range from 23% to 43%.^{2,3} Previous studies indicate not only that pregnant women underuse dental care but that poor women disproportionately fail to obtain such care.^{2,3}

Although there have been recent increases in research on maternal oral health during and after pregnancy,^{4–11} little is known about amenable factors that could be addressed during the prenatal period by maternity care clinicians, dental care providers, public health policymakers, and women themselves. Only 2 studies to date, to our knowledge, have examined predictors of dental care use during pregnancy.

A population-based cross-sectional study conducted in North Dakota revealed that young women, women in poverty, and women with Medicaid coverage were at increased risk of not having a dentist visit during their pregnancy.³ In another study, Gaffield et al. analyzed Pregnancy Risk Monitoring System data from 4 states.² They found a modest increase in risk of dental care underuse associated with poverty, Medicaid coverage, and late-onset prenatal care among women who reported having a dental problem during pregnancy. However, neither of these studies accounted for confounding variables likely to distort the actual relationship between such factors and dental care use.

In 2000, the surgeon general issued a call for action to expand research efforts aimed at improving oral health; this report indicated the need for studies describing the magnitude of the problem, assessing care delivery characteristics, and identifying mitigating factors that promote or hinder good oral health.¹² Many factors associated with dental care use during pregnancy are not amenable to intervention; however, provision of counseling on

Objectives. We examined the relationships between risk factors amenable to intervention and the likelihood of dental care use during pregnancy.

Methods. We used data from the Washington State Department of Health's Pregnancy Risk Assessment Monitoring System.

Results. Of the women surveyed, 58% reported no dental care during their pregnancy. Among women with no dental problems, those not receiving dental care were at markedly increased risk of having received no counseling on oral health care, being overweight, and using tobacco. Among women who received dental care, those with dental problems were more likely to have lower incomes and Medicaid coverage than those without dental problems.

Conclusions. There is a need for enhanced education and training of maternity care providers concerning oral health in pregnancy. (*Am J Public Health.* 2004; 94:765–771)

oral health care by maternity care providers is a simple, low-cost intervention.

In addition, increased understanding of mutable factors such as obesity and smoking could offer the potential for developing prenatal screening and referral strategies.^{13,14} Clinicians and public health care providers who care for women during pregnancy need new practical information concerning factors that affect dental care use to allow development and implementation of oral health counseling, screening, and referral strategies. The present study was undertaken to examine the association between selected sociodemographic, pregnancy, and health service factors amenable to intervention and the likelihood of dental care use during pregnancy.

METHODS

Data for this study were derived from the Washington State Department of Health Pregnancy Risk Assessment Monitoring System (PRAMS). The PRAMS surveillance project study methodology has been described in detail previously.¹⁵ Briefly, the study involved a cross-sectional, population-based mail/telephone survey of a stratified systematic sample of Washington mothers who had recently delivered a live-born infant. Washington State birth certificates were the sampling frame source; women from minority racial/ethnic

groups were oversampled. Seventy-four percent of the 2147 women who delivered a live-born infant between January 1 and December 31, 2000, responded to the Washington PRAMS survey (n=1592). Comparisons of birth certificate information among respondents and nonrespondents showed that the latter were more likely to be multiparous, unmarried, and Black and less likely to have completed high school.¹⁶

In January 2000, several dental care questions were added to the Washington PRAMS survey. The revised survey assessed the care of women's teeth during their pregnancy by asking whether they (1) had needed to see a dentist for a problem, (2) had visited a dentist or dental clinic, or (3) had discussed with a dental or other health care worker how to care for their teeth and gums. Eighty-four percent (n=1343) of the respondents completed all 3 questions on dental care use during pregnancy, and 95% (n=1513) answered 2 of these questions. Information on sociodemographic, prenatal, and health service factors was taken from the PRAMS questionnaire.

We assessed women according to reported absence or presence of self-reported dental problems. Analyses focusing on women with no reported dental problems examined the association between receipt of preventive care and selected risk factors; the goal of analyses focusing on women with reported dental problems separately was to help provide an

understanding of the association between receipt of dental care and selected risk factors. In addition, we examined the association between receipt or nonreceipt of care and reported dental problems to assess the risk factors associated with such problems.

In terms of dental care use variables, women were categorized as follows: (1) those who reported that they had no dental problems yet had received dental care; (2) those who reported that they had no dental problems and did not receive dental care; (3) those who reported that they had dental problems and received dental care; and (4) those who reported that they had dental problems but did not receive dental care. The primary risk factors of interest were household monthly income; participation or nonparticipation in the Special Supplemental Nutrition Program for Women, Infants, and Children; type of prenatal care insurance coverage; trimester in which prenatal care was initiated; prenatal care site; counseling on oral health care; body mass index; smoking status before the pregnancy; smoking status during the final 3 months of the pregnancy; and history of ever having smoked.

We conducted unconditional logistic regression analyses to estimate, by means of odds ratios (ORs), associations between risk factors and dental care use during pregnancy according to self-reported dental problems. We also evaluated the relationship between risk factors and risk of reported dental problems according to receipt or nonreceipt of dental care. Estimates of model parameters were computed via maximum likelihood techniques, and 95% confidence intervals (CIs) were based on coefficient standard errors and the normal approximation.

Established and suggested risk factors were evaluated as potential confounders, including maternal age, marital status, race/ethnicity, educational level, income, parity, body mass index, and smoking status during the final 3 months of pregnancy, along with infant birthweight and estimated gestational age. Those risk factors that resulted in changes of 10% or more in dental care use odds ratio estimates were included in the covariate-adjusted model.

Stata version 7.0 (Stata Corp, College Station, Tex) software was used to account for the complex multistage sampling design implemented to produce population estimates in the modeled analyses. Specifically, individual

PRAMS respondents are assigned an analysis weight that is the product of the sampling weight, the nonresponse weight, and the frame noncoverage weight. Sampling weights are calculated by dividing the number of women in the sample frame for a given stratum by the number of women actually sampled in that stratum. These weights are then adjusted by the response rates and noncoverage rates associated with each stratum.

RESULTS

Overall, 58% of the pregnant women surveyed here reported receiving no dental care during their pregnancy. Fifteen percent of the respondents reported that they had no dental problems but received dental care; 38% reported that they had no dental problems and did not receive dental care; 26% reported that they did have dental problems and received dental care; and 21% reported that they had dental problems but did not receive dental care. Table 1 shows the distribution of selected sociodemographic, prenatal, and health service characteristics according to self-reported dental problems and receipt of dental care. Women who had no dental problems but received dental care were more likely than women in the other groups to be older, married, White, and primiparous; to be at higher educational and income levels; to have private insurance coverage; and to have received care from a private physician or a health maintenance organization. They were less likely to be obese or to smoke.

We examined the association of potential risk factors with receipt of dental care among women who did not report dental problems during pregnancy and those who did report such problems (Table 2). Among women reporting no dental problems, those who did not receive dental care were at markedly increased risk, relative to those who did receive care, to have not been counseled on oral health care during their pregnancy (OR=22.32; 95% CI=14.22, 35.02) (Table 2).

In addition, among women without dental problems, risk of not receiving dental care was significantly associated with body mass index. The odds ratio among overweight women receiving no dental care was 1.9 (95% CI=1.1, 3.1), and the same odds ratio was observed among obese women who did not receive

dental care (OR=1.9; 95% CI=1.1, 3.3). Among women with no dental problems, measures of smoking appeared strongly associated with risk of not receiving dental care; smoking during the final 3 months of pregnancy was associated with a 3.5-fold increase in risk of not receiving care (95% CI=1.5, 8.1). The results for women who had ever smoked were similar (OR=3.6; 95% CI=1.6, 8.1).

We also examined whether the association between selected risk factors and receipt of dental care during pregnancy varied among the women who reported having dental problems during their pregnancy (Table 2). Nonreceipt of counseling on oral health care during pregnancy was associated with a high risk of not receiving dental care (OR=26.42; 95% CI=12.46, 56.02), and this was the most significant factor of those listed in Table 2. None of the other associations between risk factors and nonreceipt of care were statistically significant.

In an effort to assess risk factors associated with self-identified dental problems during pregnancy, we stratified women according to receipt and nonreceipt of dental care (Table 3). In the analysis involving women who received dental care during their pregnancy, low monthly income (in the \$1200 to \$2099 range) was the factor most strongly associated with an increased risk of reports of dental problems (OR=2.32; 95% CI=1.01, 5.3) (Table 3). The results were similar (2-fold increased risk) among women with Medicaid coverage and among women who reported ever having smoked (OR=2.64; 95% CI=1.13, 6.19). Finally, no measures of selected risk factors were significantly associated with the presence or absence of reported dental problems among the subgroup of women who did not receive dental care during their pregnancy.

DISCUSSION

In this cross-sectional survey, we identified previously unreported factors potentially amenable to clinical and public health interventions. Among women without reported dental problems, elevated risks of not receiving dental care were associated with not being counseled on oral health care, obesity, and either smoking during the final 3 months of pregnancy or ever having smoked. Obe-

