Prenatal Counseling for Pregnant Women: A Survey of General Dentists

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Objective: *To assess the attitudes, behavior, and demographics of general dentists in the state of Nebraska with regard to overall prenatal oral health counseling for pregnant women.* ***Study Design:*** *The survey asked for demographic information, number of years practicing dentistry, and patient base. The survey also asked questions about prenatal oral health counseling for pregnant women. A self-addressed stamped envelope was enclosed for dentists' returned responses.* ***Results:*** *Out of the 800 surveys sent, 371(46.4%) were returned. Nearly 50% of general dentists in Nebraska who responded to the survey do not provide any prenatal counseling (45.6%) and 5.9% provide prenatal counseling only once a year. There were no correlations between providing prenatal counseling and age of general dentists, gender of general dentists, type of practice, and length of time in practice or additional training completed. When asked why they do not provide prenatal counseling, 19.7% say that it is not a priority for the office and 9.5% do not provide prenatal counseling because they are not reimbursed by a third party payer.* ***Conclusions:*** *Fifty percent of general practitioners do provide prenatal counseling. The most common reason for not providing prenatal counseling was it is not a priority for the office and the parents are not interested.*

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INTRODUCTION

A woman's preconception and pregnancy experience with the two most prevalent diseases of the mouth, periodontal disease and dental caries, can adversely influence her oral health status, her risk of systemic diseases, (such as atherosclerosis and diabetes) and gestational risks such as pre-term and low birth weight deliveries.[1-5] In addition, to impacting birth outcomes, maternal oral health can adversely impact infant oral health by increasing the risk of developing early and severe dental caries.[6-9] The combination of high prevalence of periodontal disease and caries, insufficient treatment rates, missed preventive opportunities, and intermittent symptoms led the US Surgeon General to publish a report in 2001 on oral health in America characterizing dental and oral disease as a silent epidemic.[10] The ability to effect appropriate public health change through preventive interventions is bolstered by evidence that points to an expectant mother's heightened readiness to learn and be motivated to care for her own health and that of her baby.[11] In a study of pregnant women and the influence of an oral health and pregnancy brochure on oral health care seeking behavior, 81.8% of respondents planned to seek dental treatment during their pregnancy.

The study brochure influenced this decision in 42.4% of those surveyed.[12] Furthermore, only 53.8% of the prenatal caregivers said they currently incorporate oral health care and its importance into the prenatal care of their pregnant patients. All caregivers surveyed (100%) indicated they would give this information to their patients if it were made readily available. A review of the literature shows that prenatal oral health counseling as part of a preventive program has been associated with improved oral health outcomes in children. In a study of the effectiveness of primary prevention and oral health care to pregnant women and their children from birth to age 4, all 3-year-old children of the study group showed a caries-free primary dentition, a salivary *streptococci mutans* (*SM*) score of 0 and excellent dental hygiene.[13] By age 4, only 8.5% of the children showed initial caries in fissures of primary molars and generally increasing salivary *SM* scores. In comparison to the control group, the results showed a substantial improvement of the oral health

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of the mothers in the study and a statistically significant decrease in dental caries in their children after four years. The authors concluded that pre- and postnatal prevention programs may significantly improve the oral health of mother and child.[13] Another study utilizing only a single lecture on oral health content improved dental knowledge scores and decreased disparities in short-term knowledge between Hispanics of Mexican origin and African American expectant women.[14] Gomes, Weber and Emilson evaluated the effectiveness of a prenatal and postnatal prevention program and found that after the first four years, 97% of the children were caries free compared with 77% in the control group.[15] Of specific note, the authors concluded that the preventive dental program was effective in inhibiting caries in preschool children, even in a population already receiving the benefits of community water fluoridation.[15] In a related study Gomez and Weber, evaluated the effectiveness of a prenatal oral health program by comparing the caries prevalence of the participating mothers and their children after six years. The study found more carious lesions in the control group of both 5 and 6 year olds than children in the study group.[16] Combining minimally invasive chemotherapeutic regimes of 0.12 percent chlorhexidine and 0.05 percent sodium fluoride during pregnancy also significantly reduced the level of *SM* in the mother and delayed the colonization of bacteria in their children for about four months.[17] Investigators reported that the use of microbiological information to motivate subjects during the study probably contributed to the success of the chemotherapeutic preventive protocol.[17]

Successful preventive programs require a multidisciplinary team that includes the obstetrician, family practice physician, pediatrician, pediatric dentist and general dentist.[11] A consistent and reinforcing educational message to expectant mothers combined with preventive care that improves the oral and overall health of both mother and fetus appears critical to success.[11] Prenatal oral health counseling, the first pillar of anticipatory guidance, allows the general and pediatric dentist as a member of the health care team to be an important interventionist and advocate for children.[6,11] While such counseling is often common place in pediatric dental offices, the delivery of such information by generalists is somewhat in question. In a German study, 71% of pregnant women received no pre-natal counseling regarding their oral care.[18]

Given the shortage of pediatric dentists, both in numbers and distribution, there is a greater need for generalists to treat a higher percentage of children in their offices[19] and subsequently perform some of the pre-natal and early childhood counseling usually performed by pediatric dentists. General dentists, have a great opportunity, especially with first time mothers, to introduce preventive programs to help reduce early childhood oral disease. To that end, more research needs to be done to evaluate access to and the nature of prenatal oral health counseling offered to pregnant women by general dentists. This survey was given to general dentists in the state of Nebraska to collect information on clinician demographics, as well as to assess the frequency and type of educational information given to pregnant women. Also, the survey sought to identify reasons why the clinician does not offer this specific counseling.

METHOD

This research project and survey cover letter was approved by the university institutional review board (IRB). A 13-item survey (questionnaire) and accompanying cover letter was mailed to 800 licensed general dentists in the state of Nebraska in February of 2008. The list was obtained from the Health Professions Tracking Center (HPTC); Nebraska Medical Center. General dentists were selected because they constitute the largest number of primary care dentists within the state thereby creating access points for pregnant women. They see the same group of patients within their practice on a regular recall basis and they display the attitudes and behaviors the study seeks to evaluate regarding prenatal oral health counseling.

The survey asked for demographic information such as sex, age, number of years practicing dentistry, type of practice (Solo, Partnership, Public Health, Faculty practice, Other), the county or counties where the practice is located, the population size of the community served, additional training completed {General Practice Residency (GPR), Advanced Education in General Dentistry (AEGD)}, and patient base (Insurance, Self-pay, Medicaid). The survey also asked about the frequency of prenatal counseling, the length of time scheduled for prenatal counseling sessions, the particular groups offered prenatal counseling, the associated fees for prenatal counseling, and the major reason(s) for not providing prenatal counseling. A self-addressed stamped envelope was enclosed for dentists' returned responses. Responses to the questionnaire were tabulated and percent frequency distributions for each item were computed. Descriptive statistics and chi-square tests were used to analyze data. All tests utilized a 0.05 level of statistical significance.

RESULTS

Out of the 800 surveys sent, 371(46.4%) were returned. Approximately, 317 (85.4%) of the respondents were male and 53 (14.3%) were female. One respondent did not specify gender. All ages were well represented: 7.5% (28) of the respondents were between 24-30 years old, 15.6% (58) were 31-40 years old, 20.2% (75) were 41-50 years old, 37.5% (139) were 51-60 years old and 18.3% (68) were more than 60 years old. Three respondents (0.8%) did not provide responses. Most respondents reported being solo practitioners (249 respondents, 67.1%), but 23.2% (86) were reportedly in a partnership. Public health, faculty practice and other types of practice represented only 1.1% (4), 2.7% (10) and 5.4% (20) respectively. Two respondents (0.5%) did not respond. Surveys were returned from 60 of the 93 counties in Nebraska. Of the surveys returned, 24.3% were from Douglas County and 16.7% (62) were from Lancaster County. All other counties each represented less than 4% of the surveys returned. As one would expect, many of the respon-

dents were from communities with a population greater than 50,000 (45.8%). Approximately, 19.1% of respondents reported serving communities with a population of less than 5,000. Additionally, 9.7% report serving communities of 5,000-9,999, 6.5% report serving communities of 10,000 to 19,999, and 17.5% report serving communities of 20,000-49,999. Most respondents had not completed any advanced training beyond their doctorate (307, 82.7%), but 12.4% (46) had completed a General Practice Residency and 4.0% (15) had completed an Advanced Education in General Dentistry Program. A large percentage (239, 64.4%) of respondents had been in practice more than 20 years, with only 8.4% (31) reporting being in practice less than 5 years, 10.5% (39) reporting being in practice 6-10 years, 6.5% (24) reporting being in practice 11-15 years and 9.2% (34) reporting being in practice 16-20 years. Nearly all survey respondents report seeing patients with private insurance (361, 97.3%) and self-pay patients (357, 96.2%), while 74.4% (276) report seeing Medicaid patients.

Figure 1 illustrates how often general dentists provided prenatal counseling to their patients. Nearly 50% of general dentists in Nebraska who responded to the survey do not provide any prenatal counseling (45.6%), 5.9% do prenatal counseling for their patients once a week, 16.2% do prenatal counseling once a month, 11.6% do prenatal counseling once every six months, 5.9% provide prenatal counseling only once a year, 1.3% provide prenatal counseling more than 10 times a month, 2.2% more than 10 times every six months, and 1.3% more than 10 times per year. There were no correlations between providing prenatal counseling and the age of general dentists, gender of general dentists, type of practice, and length of time in practice or additional training completed.

More than 50% of practitioners who returned the survey did not answer the question regarding how long they schedule for prenatal sessions (Figure 2). Many dentists in this group wrote comments indicating that they do not "schedule" time for prenatal counseling or do not do prenatal counseling. Of the practitioners who answered the question, 60.2% schedule less than 5 minutes for prenatal counseling and 30.9% schedule between 5 and 20 minutes. 3.3% schedule between 21 and 30 minutes, 1.7% schedule more than 30 minutes and 3.9% reported they schedule no time at all. There were no correlations regarding the amount of time scheduled for prenatal counseling sessions and the age of general dentists, gender of general dentists, type of practice, or length of time in practice. Practitioners who completed additional training were more likely to schedule more time for prenatal counseling. Furthermore, the more prenatal counseling a practitioner reported, the more time they were likely to schedule for prenatal counseling.

When asked about the groups to whom they directed their prenatal counseling efforts, 34% said none, and 43.9% said for expectant mothers in their practice. Approximately, 1.6% provided counseling at prenatal classes, 1.3% provided prenatal counseling to other healthcare providers and 0.8% provided prenatal counseling through Women, Infants, and Children (WIC) Program (Figure 3). Slightly over, 22% (22.1%) of respondents did not answer this question.

With respect to charging for prenatal counseling services, 53.4% did not answer the question, 4% charge a fee in the office, 1.1% had a pre-negotiated fee when offering counseling outside the office setting and 43.4% provide pre-

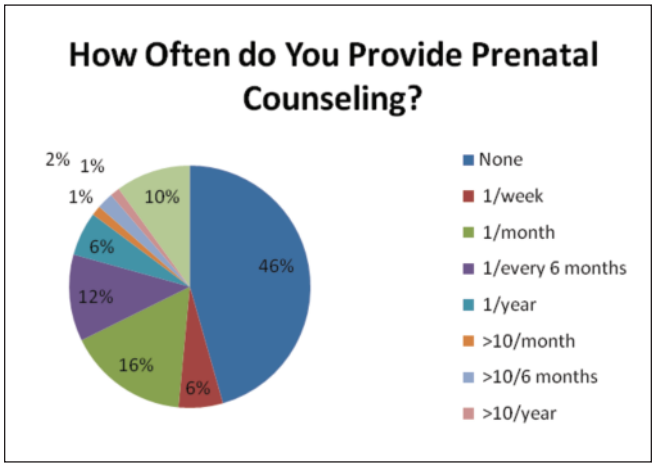

Figure 1. Response to the question "How often do you provide prenatal counseling?"

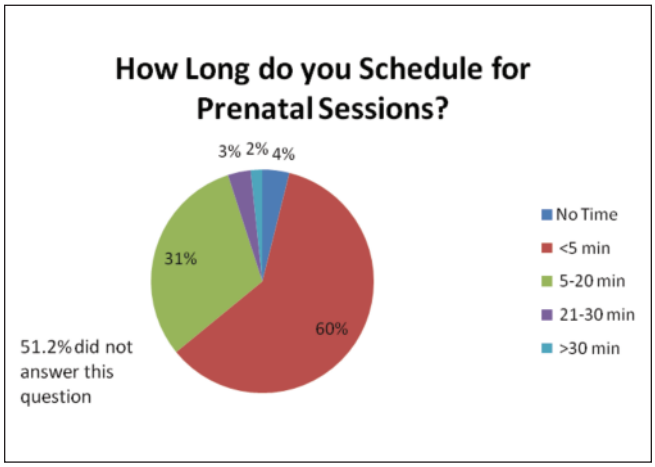

Figure 2. Response to the question "What is the length of time scheduled for prenatal counseling sessions?"

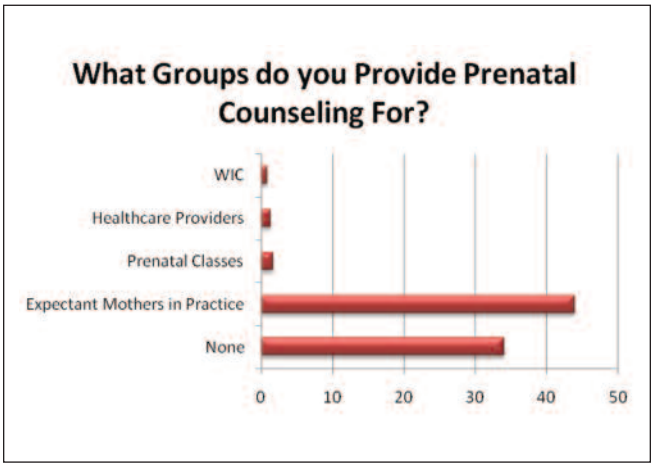

Figure 3. Response to the question "What groups are counseled for prenatal counseling?"

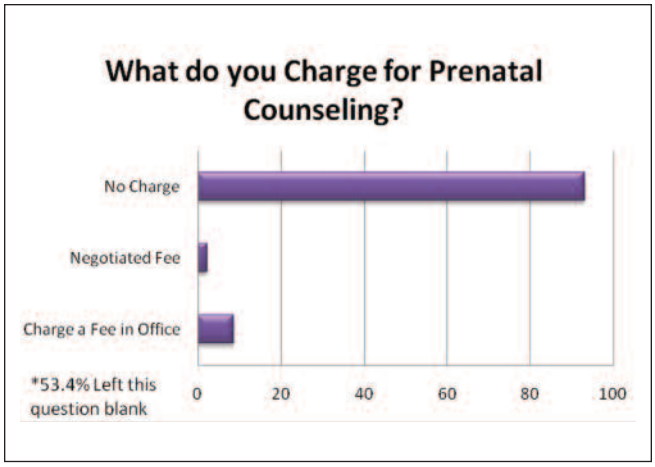

Figure 4. Response to the question "If you provide prenatal counseling, do you charge?"

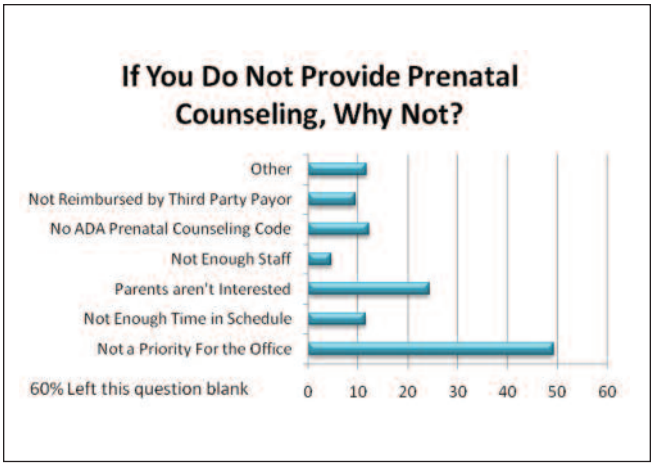

Figure 5. Response to the question "If prenatal counseling is not given to mothers in your practice, why not?"

natal counseling at no charge (Figure 4).

When asked why they do not provide prenatal counseling, 60.1% of respondents did not answer this question. Of those responding, 19.7% stated that it was not a priority for the office, 11.5% stated that they did not have enough time in their schedule, 24.3% indicated that the parents were not interested, 4.5% did not have enough staff, 12.2% did not provide prenatal counseling because of the lack of an ADA code, and 9.5% did not provide prenatal counseling because they are not reimbursed by a third party payer (Figure 5). Other reasons for not providing counseling accounted for 11.6% of responses and included such comments as: "this should be the physician's role," "not sure what to tell them," and "not adequately trained." Several respondents noted that they had never thought of providing prenatal counseling but will start doing this in the future.

DISCUSSION

Maternal oral and systemic health, along with diet, self-care, and lifestyle can adversely impact fetal and early childhood dentition and oral outcomes.[11] As a critical early intervention tool, prenatal counseling holds promise for improving the oral health of mother and child. A number of early interventions, such as reducing or postponing the transmission of maternal oral microflora, implementing the use of chemotherapeutics (fluorides, chlorhexidine), or providing oral hygiene instructions, feeding considerations, caries risk assessment and information regarding caries development are important in improving the infant's oral health status and maternal education.[1,6,11]

To better treat mother and child, a multidisciplinary approach with a firm oral health foundation needs to be constructed in the health care community. General dentists, working in tandem with other health care professionals (medical and dental), have a great opportunity to introduce preventive programs to help reduce early childhood caries. Hospitals and other health care settings along with general dentistry offices are natural points of contact for women in need of prenatal counseling. However, these resources may not be actively providing this information or the level of quality care that can influence outcomes. As a community resource, the generalist is an important conveyor of such information and little is known about this service area. This survey explored the opinion of the general dentists regarding their experiences and attitudes regarding prenatal counseling while trying to assess the frequency or number of interventions that are being performed, the time spent in counseling, the variety of counseling settings being utilized, and barriers to counseling. Such information is critical to strengthening the generalist's commitment to this public health issue as well as serving as a basis for further study.

In the present study, 54% of general dentists who responded indicated that they were providing some form of prenatal oral health counseling, with over 60% (62.2%) scheduling less than 5 minutes for the interaction. Having 1 out of every two respondents indicating that they were providing counseling was deemed a significant finding on general review of the data but no information was gathered regarding the effectiveness of these interventions especially considering that the majority of sessions were less than 5 minutes in length. Surprisingly, over 31% were providing sessions of 5 to 20 minutes in length; a significant time commitment in a generalist's schedule. Furthermore, of the 54% providing counseling, sessions generally occurred from one per month (16%), one every six months (12%) to once a year (6%). It is difficult to assess whether or not this frequency is typical for the practice of general dentistry, but it is postulated that the frequency is dependent upon the practice demographics, practice focus and maternal-neonatal pediatric knowledge/skill set of the generalist. When looking at indicators representing such pertinent practice variables, the study found no correlations between providing prenatal counseling and the age of general dentists, gender of general dentists, type of practice, and length of time in practice or additional training completed. Also, there were no correlations regarding the amount of time scheduled for prenatal counseling sessions and the age of general dentists, gender of general dentists, type of practice, or length of time in

practice. The study did show that practitioners who completed additional training were more likely to schedule more time for prenatal counseling. Furthermore, the more prenatal counseling a practitioner reported, the more time they were likely to schedule for the interaction.

The ability to introduce oral health counseling to women early in their pregnancy, is conflicted by historical practices in dentistry and medicine regarding pregnancy. With respect to dental care during pregnancy, Strafford, Shellhaas and Hade compared the opinions of dentists, obstetricians, and patients, and found differences regarding the safety, accessibility, and necessity of prenatal dental treatments between the professions.[20]

Most providers rated prenatal dental screening as an important health intervention, agreeing that poor dental hygiene was related to adverse pregnancy outcomes. In general, obstetricians were more comfortable than dentists regarding patients undergoing dental procedures and medication usage, but reported recommending routine prenatal dental care less often than their dental counterparts. The study found that obstetricians and dentists agreed that pregnant patients could undergo dental cleanings, caries treatments, and abscess drainage, but disagreed regarding the safety of X-rays, periodontal surgery, amalgam placement, and narcotic usage.[20] With respect to patient opinion, the study found that 84% of pregnant patients reported dental visits as safe, but only 44% received care; often sighting financial reasons as the limiting factor.

These findings are reinforced by international and United States studies of the dental experiences of pregnant women. In a study conducted in Kuwait, pregnant women were asked about their oral health, oral hygiene habits, and frequency of visits to a dentist.[21] Half of the women had visited a dentist during pregnancy, mostly for dental pain. A large proportion of the women had oral health problems. Half reported not seeing a dentist during their pregnancy and most had received no instructions concerning oral health care and their pregnancy. With respect to vulnerable populations, a study of national and state-specific estimates of dental care use among adult pregnant women in the United States found that most pregnant women receiving dental care were non-Hispanic white and married, and had more than a high school education.[22] Pregnant women, who were minority, with low educational and socioeconomic backgrounds, not only received less dental care during pregnancy but also had children at a high risk for early childhood caries. Across groups, income and smoking status were found to be significant predictors for not using dental care. Additional obstacles for pregnant women receiving preventive and prenatal counseling were past adverse dental experiences and a general disregard for the primary dentition by the parent. Despite these hindrances, new mothers appear very open to acquiring information and strategies regarding safe and healthy deliveries and improved health of their child; including reduction of early childhood caries.[23] Therefore, it would be very advantageous for this high-risk population to receive prenatal anticipatory guidance information through multiple access points within the health care community.

To make that information sharing more productive, and to overcome the presence of differing perceptions related to the safety of specific dental procedures that could be hindering professional referrals and patient care, enhanced education and training of health care providers should be undertaken concerning oral health and pregnancy.[24] The American Dental Association (ADA) and American Academy of Pediatric Dentistry (AAPD) should assist primary care providers in both the medical and dental communities with the establishment and awareness of professional guidelines about oral health screening in pregnancy, the safety of dental procedures and prenatal oral health counseling. Such multidisciplinary efforts appear to be even more significant considering that once the mother delivers, pediatricians see infant and toddlers more than general dentists and have more frequent exposure to mother and child for oral counseling efforts.[25] Furthermore professional organizations should advocate for coverage of prenatal oral health counseling by Medicaid and other insurance providers. Reimbursement for these services may significantly encourage their provision among general dentists and pediatric dentists.

CONCLUSIONS

These data indicate that more than 50% of general practitioners provide prenatal counseling. Practitioners who completed additional training were more likely to schedule more time for prenatal counseling. The most common reason for not providing prenatal counseling was that it was not a priority for the office. Other reasons cited were there is not enough time in the schedule, the parents are not interested, there are not enough staff, there is a lack of an ADA code, and there is no reimbursement by a third party payer. Several respondents noted they had never thought of providing prenatal counseling, but will start doing so in the future. The ultimate goal of the general dentist, obstetrician, family practice physician, pediatrician and pediatric dentist is a safe delivery for every mother and child. The hope is that the child will grow to be healthy, active and caries-free child. It is important that general dentists and other heath care professionals work with ADA, AAPD and corresponding medical organizations to help address the questions regarding why prenatal counseling is not offered to pregnant women and to determine what is needed to provide this service in the future.

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