

Decreasing barriers to oral health: Results of a Maryland survey of nurse practitioners' knowledge and practices related to dental caries prevention

Laura W. Koo, MS, RN, CRNP, FNP-BC; Alice Horowitz, PhD; Min Q. Wang, PhD; and Dushanka V. Kleinman, DDS, MScD

Access to dental caries preventive regimens and treatment for poor and Medicaid-dependent children has been one of several reasons for disparities in dental caries. Fluoride varnish application was previously provided only by dental professionals before regulations in Maryland changed in 2009 to provide Medicaid reimbursement to nurse practitioners and physicians for fluoride varnish application. Nurse practitioners can play a key role in early childhood caries (ECC) prevention through assessment, patient/caregiver education, prescribing fluoride supplements, and applying fluoride varnish.

We surveyed Maryland nurse practitioners about their knowledge of childhood dental caries prevention strategies and fluoride use as part of the 2010 statewide Maryland oral health literacy assessment of healthcare providers including physicians, dentists, and dental hygienists.

We mailed NPs licensed in Maryland an anonymous postage-paid 27-item self-report questionnaire containing 11 items about dental caries prevention. Descriptive statistics, correlations, and logistic regression assessed characteristics of the subset of respondents who reported treating children/youth in their practice (n=171). A composite fluoride knowledge scale assessed knowledge of fluoride use for dental caries prevention (Cronbach's alpha =.87). Logistic regression was performed to examine predictors of assessing children's sources of drinking water.

NP respondents had a moderately low composite fluoride knowledge level (mean score 22, possible range 0-48). Slightly more than half (55.6%) of the NPs reported asking the source of children's drinking water. All respondents (100%) who prescribed fluoride drops or tablets reported assessing children's sources of drinking water. Respondents who reported having a child patient present with ECC over the past year, compared with those who did not, were 12.5 times more likely to report assessing children's sources of drinking water. Respondents who reported feeling "sure" of their ability to prevent ECC, compared with those who did "not know" or were "unsure", were almost 12 times more likely to report assessing children's sources of drinking water. Ten percent of respondents reported that a provider in the practice applies fluoride varnish to patients ages six months to two years; less than nine percent reported it for children ages three to six years.

Conclusions: Respondents had a moderately low knowledge level of dental caries preventive regimens. Within a year after the Maryland Mouths Matter program launched, findings suggest that less than ten percent of practices with NPs who treat children were providing fluoride varnish applications. Findings suggest that caring for children with dental caries and feeling confident about helping to prevent caries increases the likelihood of assessing children's source of drinking water. Assessing drinking water is an important step in assessing for adequate fluoride intake to prevent dental caries. Low fluoride knowledge levels may be the reason that knowledge was not a predictor of assessing children's sources of drinking water. These preliminary findings suggest that NPs could benefit from continuing education and formal education regarding fluoride use and dental caries prevention strategies to contribute to decreasing the barriers to oral health care.