

An Oral Health Education Program for Latino Immigrant Parents

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ABSTRACT: A high prevalence of dental caries in the pediatric population is a major health problem. At highest risk are low-income minority groups, including refugee and immigrant populations. Consequences of oral disease include pain, difficulty eating and speaking, poor school performance, and poor self-esteem. Parent involvement in oral health education is crucial. This program provided oral health education for Latino immigrant parents in a northern California school district. A pretest–posttest was administered to measure changes in oral health knowledge and reported oral health behaviors following two sessions of oral health education. This program provides a framework for school nurses who are in an ideal position to implement similar programs that address the oral health needs of the pediatric population, particularly those of the Latino immigrant community.

KEY WORDS: caries, dietary habits, oral health behavior, oral health knowledge

INTRODUCTION

In 2000, the U.S. Surgeon General issued a report calling for the development of a National Oral Health Plan to address health disparities and to improve the quality of life for all Americans (Evans & Kleinman, 2000). Although the report highlights significant gains in the oral health status of the U.S. population over the last 50 years, it also emphasizes the need to reduce the disparities in dental care among different population groups. Recent reports show that dental caries are disproportionately concentrated in children from low-income households and ethnic minority groups (Watson, Horowitz, Garcia, & Canto, 2001). The Dental Health Foundation (2000) identifies California's children as having twice as much dental disease as the

national average, including twice as much untreated decay as their national counterparts. According to the Dental Health Foundation studies, about 40% of preschoolers and 65% of elementary school children of color need both urgent and nonurgent dental care.

Numerous factors contribute to the high prevalence of oral disease in California's pediatric population, including lack of dental insurance, cultural barriers associated with poor access to dental care, lack of fluoridated water in some communities, and poor dietary and oral hygiene habits (Dental Health Foundation, 2000; Yehieli & Koch, 1999). Refugees and immigrants are among the populations most at risk as a result of the combination of untreated oral conditions prior to emigration and the presence of multiple barriers to good oral health in the United States (Yehieli & Koch).

This oral health education program was designed for recent Latino immigrant parents whose children attend a northern California elementary school district. Most of the students were from low-income families, as reflected in the high percentage of the student population enrolled in the free lunch program (Nudelman, Director of Even Start Literacy Program, Redwood City School District, personal communication, November 30, 2003). Reports of a high incidence of dental caries from the San Mateo County Dental

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Health Coalition, combined with evidence of severe caries based on examinations conducted by the school nurse, supported the need to address the problem of poor oral health in this population. Over the past 5 years, the school nurse focused primarily on oral health education for the children through lessons she provided in the classroom. This approach, however, did not resolve the problem. Therefore, the school nurse attempted to address the issue by providing parent education in oral health. The program addressed the problem of pediatric oral disease using a preventive approach. It included education about oral hygiene, nutrition, dietary practices, fluoride treatment, and regular dental checkups as a means of reducing the high incidence of dental caries and periodontal disease commonly found in children of recent immigrants. The desired outcomes were increased knowledge and awareness for the parents and improved oral health for the children.

LITERATURE REVIEW

A review of the literature indicated a need to address the problem of disparities in oral health from a variety of perspectives. Research has shown that increasing access alone does not improve oral health among the lower socioeconomic populations, and efforts should focus on educating the public and changing social policy to promote oral health (Ismail & Sohn, 2001; Sheiham, 2000). In a cross-sectional study of 1st-grade students in Nova Scotia, Canada, Ismail and Sohn found that universal access to dental care did not reduce the disparities in dental caries between children from families with low educational levels and

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children from families with high educational levels. The study indicated that oral health in children is determined by numerous factors, including access to optimal concentrations of fluoridated water, oral hygiene habits, age of first dental examination, frequency of dental examinations, and parents' level of education. Findings of a correlation between parents' level of education and extent of dental decay in children indicate the value of oral health education for parents as a means of improving oral health in children.

In the evaluation of a school-based health education program targeting at-risk students in the District of Columbia, Legg and Grigoriev (2003) identified parental involvement as the most essential component

of a program. Reasons given included parents' impact on their children's habits through role-modeling healthy behaviors and supporting the behaviors taught in the health education program. According to Legg and Grigoriev, the best way to disseminate health information to parents is through parental discussion groups and pamphlets sent home with children.

Wierzbicka, Petersen, Szatko, Dybizbanska, and Kalo (2002) conducted a study of the occurrence of dental caries over time among Polish school-age children in urban and rural areas, as well as the oral health behavior of the students and their mothers, the knowledge and attitudes of the mothers in comparison with the students' teachers, and the effect of mothers' educational level on oral health knowledge, attitudes, and practices in the home. The purpose was to identify baseline data for the planning and evaluation of a school health education program in Poland. Oral epidemiological surveys were performed annually during the years 1995–2000 with randomly selected children ages 6 and 12 years. The survey data on dental caries was collected by clinical examinations in accordance with the World Health Organization recommendations and criteria (World Health Organization, 1987, 1997, 1999, as cited in Wierzbicka, Petersen, Szatko, Dybizbanska, & Kalo). Additionally, a questionnaire survey of mothers' dental knowledge, attitudes, and oral health practices related to self and child was administered. Teachers also were given a questionnaire about dental knowledge and attitudes.

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The findings of Wierzbicka and colleagues (2002) indicated a positive correlation between educational level of mothers and their dental knowledge and attitudes. Dental knowledge of mothers was found to be comparable to that of teachers. However, more teachers than mothers believed that children needed adult assistance with oral hygiene. The teachers expressed support for prevention and their involvement in classroom oral health education. Findings of this study included (a) the value of population-directed and high-risk strategies in school-based oral health programs in reducing caries and promoting positive oral health habits, (b) the significant role that teachers play in teaching oral health in school, and (c) the importance of parent education and parental participation in the oral health program to achieve the best outcomes (Wierzbicka and colleagues).

Frencken and colleagues (2001) examined the effectiveness of an oral health education program in a school-age population in Zimbabwe. The longitudinal study conducted over 4 years used an experimental group and a control group consisting of 439 boys and 526 girls in grades 2 and 4. Convenience samples were chosen based on the ability of teachers to participate in a 3-day oral health workshop that covered several areas of oral health education. The dependent variables, plaque accumulation and caries increment, were measured annually in the experimental group, whose teachers participated in the workshop, and in the control group, whose teachers did not. No significant difference was found between the plaque accumulation of the experimental and control groups. Additionally, the effectiveness of the program on caries increment was inconclusive. The findings indicated that the one-time intervention designed to assist teachers in providing oral health education to students was not effective. Research has shown that reinforcement through multiple exposures to the health message is important for an intervention to be effective (Watson and colleagues, 2001; Legg & Grigoriev, 2003). Therefore, a one-time intervention is not an appropriate method of education when retention of knowledge and change in behavior are the intended goals.

Watson and colleagues (2001) used a community approach in a research project intended to improve oral health knowledge and practice in an inner-city Latino community in Washington, DC. A pilot project was conducted to explore the feasibility of developing and implementing an oral health community participatory program. The target population, pregnant mothers and parents of preschool children, was selected based on research indicating that childhood caries are more prevalent among children of low socioeconomic status, particularly those children from African American and Hispanic ethnic backgrounds (Kaste and colleagues, 1996; Vargas, Crall, & Schneider, 1998, as cited in Watson and colleagues, p. 34). However, because this project was inclusive, segments of the population in addition to mothers and children were educated about oral disease. A steering committee consisting of dentists, other health professionals, educators, and representatives from community organizations was established to identify needs, to set priorities, and to plan the program. A needs assessment, using input from the steering committee, as well as focus groups selected from the target population, revealed a need for oral health promotion interventions at many levels. With emphasis on preventive activities such as media campaigns, oral health presentations at schools, day care centers, and health fairs, and oral health clinics where sealants and fluoride treatments were provided free of charge, a culturally appropriate approach to health education was implemented by a variety of organizations and professionals throughout the community.

The overall impact and usefulness of the program were evaluated by the steering committee through an anonymous, open-ended questionnaire and a survey. Additionally, a convenience sample from a local Latino health fair provided validation data by responding to a survey about outreach issues. Based on activities considered most successful, Watson and colleagues (2001) developed a plan to continue parts of the program beyond the expiration of funding and were able to establish the feasibility of providing culturally appropriate, community participatory, oral health education programs with a preventive approach.

The findings from this literature review support the use of a multifactorial approach to decrease disparities in oral health among the pediatric population. Classroom education for students is one component of an oral health education program that can be implemented by the school nurse, as it had been in this program, but studies emphasize that parent involvement is a critical component to the success of any health education program. Given that parent knowledge and attitudes regarding oral health affect health

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outcomes for their children, one approach for addressing the disparity in oral health in the school-age population is to provide culturally appropriate, preventive education for parents that will increase knowledge and improve oral health behavior related to their children.

CONCEPTUAL FRAMEWORK

Malcolm Knowles's cognitive learning theory (Knowles, 1970) provides a framework for teaching strategies utilized in this oral health education program. Knowles contends that teaching the adult learner requires different strategies from those strategies applied to children. His theory is based on the assumption that adults are autonomous and self-directed, and therefore require specific conditions that recognize these qualities. Knowles's conditions for learning are as follows:

- (a) the learners feel a need to learn, (b) the learning environment is characterized by physical comfort, mutual trust and respect, mutual helpfulness, freedom of expression, and acceptance of differences, (c) the learners perceive the goals of a learning experience to be their goals,

(d) the learners accept a share of the responsibility for planning and operating a learning experience and therefore have a commitment toward it, (e) the learners participate actively in the learning process, (f) the learning process is related to and makes use of the experience of the learners, and (g) the learners have a sense of progress toward their goal. (pp. 52–53)

Knowles's cognitive learning theory was an appropriate framework for this program, because the population consisted of adult parents for whom a sense of autonomy and control were important. This goal was accomplished by creating an informal learning environment that allowed for input and discussion from the learners. Parents were encouraged to share their knowledge and experiences, and to discuss barriers to their children's oral health. Communication and teaching were enhanced by utilizing an interpreter who was already part of their community and who had worked with the population on a regular basis. Her involvement also was beneficial because it decreased the communication and cultural barriers between the school nurse educator and the learners, and possibly increased the level of trust and comfort among the learners.

THE ORAL HEALTH PROGRAM

The program, designed to improve the oral health knowledge and oral health behavior of the participants, consisted of two 1–1.5-hour lessons in pediatric oral health offered over 2 consecutive weeks. Course content included lessons in nutrition and dietary habits and oral hygiene, as well as the benefits of fluoride treatments and regular dental checkups. Lessons were conducted in Spanish by the school nurse, with the assistance of a bilingual instructor who had practiced dentistry in Mexico, whose primary language was Spanish and who regularly worked with the group of women in the capacity of an instructor in the Even Start Program. Visual aids, including a dental caries prevention slide series, handouts, and a model of the mouth, were used as teaching strategies to enhance learning. The materials were in both English and Spanish, which increased the likelihood of student comprehension and lowered the possibility of errors related to language, while simultaneously increasing literacy skills in English.

The first session began with a pretest, followed by an introduction to the topic of pediatric oral health utilizing the dental caries prevention slide series "Una Boca Saludable" ("A Healthy Mouth") that had been developed as an educational tool for a similar study and target population in Washington, DC (Watson and colleagues, 2001). This series of 23 slides uses diagrams, photographs, and a script to convey comprehensive pediatric oral health education, including nutrition and dietary habits that promote oral health in children, proper oral hygiene technique for children and infants, the importance of assisting young chil-

dren with toothbrushing and flossing, and the value of early dental examinations that include the application of dental sealants and fluoride. A total of 1 hour and 30 minutes was sufficient time for the presentation and discussion of the topics in greater detail.

The second session included a detailed 30–45-minute discussion about nutrition and dietary habits that promote oral health, including the importance of minimizing sugar-containing snacks, offering several servings of fresh fruits and vegetables daily, providing whole grains and sufficient amounts of dairy products, and limiting the frequency of snacks throughout the day. Parents were asked to break into groups to create meal plans for their families and then to share their meal plans with the class. The beneficial and detrimental effects of specific food products commonly consumed by this population were discussed by the group, as well as the risk of dental caries resulting from the use of baby bottles to pacify infants. Additionally, a detailed oral hygiene lesson was provided that included a demonstration of proper toothbrushing technique, the use of a soft cloth to cleanse a baby's mouth, and the proper use of dental floss. Educational pamphlets and children's toothbrushes were distributed at the end of the lesson.

The Participants

The participants were Latin American immigrant parents designated as having a low socioeconomic status. Twenty women enrolled in Even Start, a California statewide literacy program that targets Latin American immigrants, were invited to participate. All the participants were parents of children enrolled in the local schools of a northern California school district, but several participants also had infants and preschoolers.

The Setting

The program took place in the Even Start classroom located on the campus of one of the local schools. The setting and format were informal, allowing for comments, questions, and discussion. A nutritious breakfast prepared by the school nurse and offered prior to each lesson served several purposes, including (a) creating an informal tone and a sense of caring, (b) offering an incentive for participation, and (c) providing an example of the type of nutritious breakfast that could be made at home.

Program Evaluation

A pretest and equivalent posttest, developed in collaboration with a dentist, were administered to measure change in knowledge and reported behavior over the course of the program. The test was in both English and Spanish, which increased the likelihood of comprehension and lowered the possibility of errors

related to language. The pretest was administered at the beginning of the first session of the program to establish baseline data regarding oral health knowledge and behavior. Participants' knowledge was measured by scoring their responses to a set of 13 questions about oral hygiene, nutrition, and dietary habits. Oral health behavior was measured by evaluating the participants' responses to 11 questions related to oral health practices in the home. The posttest was administered a week after the last session to determine change in knowledge and reported behavior.

The test was divided into two sections; the first section assessed participants' oral health knowledge, and the second section assessed participants' oral health behavior at home (Appendix). The knowledge component, requiring true/false responses, included 13 questions about the prevention of tooth decay in children's teeth. Questions were related to toothbrushing, the use of fluoride toothpaste, the effects of using a baby bottle filled with various beverages throughout the day to pacify a baby, and the importance of primary teeth.

The second section of the test was composed of 11 questions; 8 required yes/no responses and 3 were multiple choice. The participants were asked to report practices at home related to the frequency and timing of toothbrushing, the use of fluoride toothpaste, the consumption of sweets, the frequency of between-meal snacks, and dental examinations.

Of the 20 participants, all but one scored between 9 and 13 points on the knowledge component of the pretest, with most scoring between 11 and 13 points. Six participants failed to take the posttest. However, 10 demonstrated an improvement of 1–5 points in knowledge. Of those 10, 7 attained a perfect score of 13 on the posttest. Two of the participants scored 2 points lower on the posttest than the pretest. Aside from the six who failed to take the posttest, five participants showed an improvement in reported behavior scores from the pretest to the posttest. Nine participants obtained equivalent reported behavior on pre- and posttest scores.

CONCLUSION

Given the high incidence of dental caries among low-income children in the Latino population, it is critical to identify all possible strategies to address this serious problem. Although oral health education for parents is only one approach, it is an essential component of any oral health program. It can serve as both a primary and secondary form of prevention by providing education to parents whose children are at risk and by motivating the parents to change practices that result in dental decay.

IMPLICATIONS FOR SCHOOL NURSING PRACTICE

This oral health education program provides a framework for similar programs designed to include

parents in an effort to reduce caries incidence in the pediatric population, particularly in the Latino immigrant community, where early childhood caries is extremely prevalent. The program addresses several health practices that affect oral health, including nutrition, dietary habits, oral hygiene, early visits to the dentist, fluoride treatments, and dental sealants.

The educational materials and incentives used in this program serve as useful tools for providing oral health education to Latino immigrant parents. They include bilingual educational pamphlets acquired from the county public health department, as well as toothbrushes donated by corporations such as Oral B. The dental caries prevention slide series, "Una Boca Saludable" (Watson and colleagues, 2001), is an excellent tool for teaching about the impact that nutrition, eating habits, oral hygiene, early visits to the dentist, fluoride, and dental sealants can have on oral health. The slide series is available in English and in Spanish, with a script for the instructor in the appropriate language. It can be obtained by contacting the author, Dr. Maria Watson, at mwatson@umaryland.edu.

The pretest–posttest was useful to evaluate parents' oral health knowledge. However, reported behavior has limitations because self-reporting can result in inaccurate data. Modifications should be made to the test to increase the level of accuracy and to eliminate ambiguity to the greatest extent possible. Additionally, the tests should be brief to minimize participant attrition.

Oral health education for parents can be implemented in a variety of settings. Head Start, preschools, and day care settings provide excellent facilities for early childhood preventive health education. Literacy programs such as Even Start, as well as state-run programs such as Healthy Families, contain the resources for outreach to low-income, immigrant populations. Evening educational events offered through students' schools are another means of disseminating information to parents.

Oral health is critical to general health and well-being. Children who suffer from poor oral health are at risk for performing poorly in school and for experiencing problems with eating, speaking, and self-esteem.

Although school nurses are in an excellent position to provide oral health education to parents, it is essential that the program be culturally sensitive to the target population. Suggestions for working with Latino immigrant parents include using a Spanish-speaking educator, as well as having a familiarity with the customs, practices, and patterns of interpersonal com-

munication in this population. Improved oral health knowledge and behavior are more likely to occur in an environment that offers minimal language and cultural barriers.

Oral health is critical to general health and well-being. Children who suffer from poor oral health are at risk for performing poorly in school and for experiencing problems with eating, speaking, and self-esteem. School nurses working with at-risk populations are in an ideal position to provide early childhood education in oral health and to implement culturally sensitive programs that increase parents' knowledge of oral hygiene, nutrition, dietary habits, and the importance of regular dental examinations. This approach, combined with other strategies, has the potential of reducing the high incidence of dental caries in low-income households and ethnic minority groups.

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Appendix Pretest/Posttest: Questions About Oral Health

For the following questions, please circle "T" if true and circle "F" if false:

- | | | |
|---|---|---|
| T | F | 1. There are measures parents can take to help prevent their children's teeth from decaying. |
| T | F | 2. Since baby teeth are only temporary and are replaced by the permanent teeth, it is not important to take good care of them. |
| T | F | 3. A fluoride toothpaste is more effective in preventing tooth decay than one without fluoride. |
| T | F | 4. Giving a baby a bottle with milk, juice, sweetened water, or soda for several hours during the day or night does no harm. |
| T | F | 5. If a child cannot brush with toothpaste after a meal or snack, brushing without toothpaste or rinsing the mouth with water is better than doing nothing. |
| T | F | 6. To prevent decay, the most effective time to brush the teeth is right after eating. |
| T | F | 7. It is important to help toddlers and small children with brushing their teeth. |
| | | 8. The following activities help to prevent tooth decay: |
| T | F | a. brushing right after meals. |
| T | F | b. rinsing the mouth after eating when away from home. |
| T | F | c. chewing gum. |
| T | F | d. flossing the teeth. |
| T | F | e. drinking Gatorade and other flavored beverages. |
| T | F | f. brushing at bedtime. |

Please answer the following questions by stating what you actually do in your family:

- Does your child have his/her own toothbrush?
Yes ___ No ___
- Does your child brush his/her teeth after eating snacks?
Yes ___ No ___
- Does your child brush his/her teeth before going to bed?
Yes ___ No ___
- Do you help your child with toothbrushing at least once a day?
Yes ___ No ___
- Does your child use fluoridated toothpaste to brush his/her teeth?
Yes ___ No ___
- Has your child ever been to a dentist?
Yes ___ No ___
- What was the reason for your child's last visit to the dentist?
Routine checkup ___ Toothache ___
Other problem (please specify) _____
- Does your child eat sweets such as candy, cookies, or cake between meals?
Yes ___ No ___
- Many families have soda and other sweetened beverages with their meals and during the day. What do your children drink? Place a check mark next to all that apply:
Soda ___ Gatorade ___ Milk ___ Juice ___ Water ___
Other (please specify) _____
- Many mothers let their babies suck on a bottle filled with juice, a sweetened beverage, or milk for several hours during the day or at night. Do you?
Yes ___ No ___
- Which of the following would you feed your baby? Place a check mark next to all that apply.
Milk with chocolate powder ___ Plain milk ___ Juice ___
Soda ___ Sweetened water ___ Plain water ___

Thank you so much for your responses. One more request . . . please tell us the ages of your children.