Parental Health Literacy and Children's Dental Health: Implications for the Future

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Abstract

Health literacy—or the lack thereof—is now seen as a major impediment to the successful implementation of many health programs. Every day, parents make decisions, take actions, and consider issues that influence not only their own health, but also that of their children. Unfortunately, it is just being recognized that the reading skills of a significant proportion of American adults are below what is necessary to understand most of the educational materials they are provided. Without the ability to read these materials, parents lack the possibility of understanding the materials and implementing any recommendations to prevent or treat disease. The goal of this paper was to introduce pediatric dentists to the scope of the problem and acquaint them with some of the efforts they can undertake to promote health literacy in their own practices. (Pediatr Dent 2006;28:72-75)

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While great strides have been made to improve the oral health of American children, dental caries continues to affect a significant proportion of children. According to the Surgeon General's report on oral health in America, dental caries is the most common chronic childhood disease.[1] It is estimated that 40% of children are affected by the time they enter kindergarten.[2] In addition, 75% to 80% of the most severe dental caries occur in only 20% to 25% of children.[3] These affected children are often found in the lower socioeconomic strata and commonly develop caries early in life, often at less than 2 years of age.[4-6]

Recognizing early education and intervention as being the key to preventing dental caries—particularly in young children—the American Academy of Pediatric Dentistry has developed the Clinical Guideline on Infant Oral Health.[7] This document recognizes and advocates the necessity of early risk assessment to screen and identify parent-infant groups who are at a higher risk for the development of early childhood caries (ECC) and who would benefit most from early aggressive preventive interventions. The keystone of these early interventions is the timely delivery of educational information to the parents. Early education and implementation of preventive measures could reduce the necessity for later surgical intervention. Delivery of the information, however, is only half the equation. Once delivered, the parent must then be able to read the material, comprehend the instructions that are being provided, and then implement them as part of the child's preventive dental health regimen. Unfortunately, many American adults have poor health literacy skills. Consequently, the possibility of implementing an effective caries preventive program in their children is remote at best.

Health literacy in America: The scope of the problem

While similar to general literacy, health literacy includes additional characteristics that differ from conventional literacy skills. Health literacy has been defined as "the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions."[8] Berkman et al also states that health literacy is a "constellation of skills"[9] that includes not only the ability to function in a health care environment but to also act on the information being provided. Improving health literacy among America's adult population has emerged as a major focus of the research agenda of public health and a major goal of Healthy People 2010.[10,11] Poor health literacy is associated with poorer perceptions of health, less utilization of services (particularly those related to disease prevention), and poorer understanding of verbal and written instructions for self-care.[11-17] Thus, it is logical to extrapolate that parents with poor health literacy skills could also negatively affect their children's health.

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Recognizing parents with low literacy skills

If poor literacy skills are common among American adults, what are the potential characteristics of this population that will allow pediatric dentists to identify parents who may require additional assistance? While members of minorities—especially those who consider English a second language—are likely to perform at the 2 lowest literacy levels,[11,18] many adults found to be functionally illiterate or only marginally literate are white, native-born Americans.[19] Once thought of as a clear indicator of literacy skills, educational attainment has been found to not correlate to the ability to read or comprehend written material.[8,14] Research indicates reading ability may be 5 grade levels lower than the grade level completed.[16]

Also, many adults with poor literacy skills do not consider themselves to have poor skills and believe they can read and write English very well.[10] Many are also reluctant to admit that they have difficulty and to ask for help[20] for fear of discrimination or stigmatization.[16] Therefore, the problem is not only an issue of identifying those with low literacy skills, but also making those with poor skills recognize that they may need help. According to Wilson, "…experts advise approaching all patients, or in this case, parents as if they have a lower level of functional health literacy and communicating accordingly…"[19]

A recent study by Bennett et al indicated that a short 3-question screening tool could be used effectively in a busy primary care setting to identify parents of pediatric patients with low functional literacy skills.[21] Affirmative answers to at least 2 of the questions were found to have a sensitivity of 0.84 and a specificity of 0.56. The positive predictive value was considered acceptable, especially when used in populations where illiteracy is known to be high. The questions were:

1. How many years of school have you completed?
2. Is your child's other parent living with you now?
3. Do you ever read books for fun?

Communicating with parents

If parents are identified as having low literacy skills, what can be done to be more effective in communicating information to them? Ebeling suggests communicating "with all patients on a basic level, without jargon, give the patient a chance to explain his/her story uninterrupted, limit new concepts to a maximum of 3 per visit, use pictures, graphics, and real devices for demonstration, ask questions beginning with 'how' and 'what' to ensure comprehension, convey most material orally, and use written material mostly as a backup." Rather than having the parent sit and listen to an educational presentation, the dentist should actively involve the parent to assess their level of understanding and to provide additional information as needed. An effective tool is to ask the parent to repeat the information provided in his or her own words."[22]

Assessing written informed-consent statements and dental education materials

While not as extensive as the medical literature, the dental literature indicates that the reading level of many educational materials commonly used by dentists require a high level of literacy.[23-25] The studies unanimously concluded that, in many cases, dental education materials were commonly written at levels much higher than most patients could comprehend. In the study by Alexander, 24 educational materials were analyzed using a common literacy formula.[25] Reading levels were found to vary from third- to 23rd grade level, with an average of seventh- to ninth-grade level. As most common reading materials (such as newspapers) are usually aimed at a sixth-grade level of education, it has been recommended that educational materials and informed consents be presented at a similar readability level.[10,15,26]

One method of assessing the readability of informed consent statements and written educational materials is the Simple Measure of Gobbledygook (SMOG). SMOG uses the number of polysyllabic (3 or more syllables) words from 30 randomly selected sentences in the document to derive a score and a grade level of education. SMOG has been tested extensively and is recommended as being suitable for testing reading levels of informed consent statements and pamphlets. Further information concerning evaluating written documents using SMOG and a calculated table of education levels needed to understand a document is provided at http://www.sph.emory.edu.

Besides assessing the readability of written documents, attention must also be paid to a suitability assessment of materials (SAM).[27] Recognizing that other factors may impact the ability of the reader to comprehend written materials, SAM is designed to measure organization layout and design of written materials. SAM scores these materials in relation to content, graphics, layout, typography, learning stimulation, and cultural appropriateness. It then rates each category as superior, adequate, or not suitable. This tool can be used to identify specific shortcomings of written, video, and audio materials.

Connection between parental health literacy and children's dental health

Data are available in the medical literature indicating a relationship between higher levels of health literacy having a positive impact on an individual's health and their health care. There are, however, currently insufficient data concerning the relationship of health literacy and dental health to determine if a similar relationship exists. Are higher levels of health literacy and good oral health related? Zero et al, in a systematic review of the literature concerning caries risk indicators, concluded that parental education was one of the primary factors for caries prediction in primary teeth.[28] A number of studies have concluded that higher education levels coincide with positive dental health beliefs. Additionally, an increased likelihood of parents turning their dental knowledge into preventive care for their child.[29-31]

As stated earlier, however, educational attainment may not necessarily coincide with levels of reading comprehension and understanding.[8,11] Therefore, more research is needed to determine the impact of health literacy on the dental health of young children.

Conclusions

Pediatric dentists must be aware that many of the written materials commonly provided to parents may surpass the capabilities of their readers, and they should make all efforts to identify and assist those with poor health-literacy skills.

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Abstract of the Scientific Literature

A "Protocol" for Ketamine Sedation in Children

The purpose of this study was to present an evidence-based clinical practice guideline for the administration of the dissociative agent ketamine for emergency department pediatric procedural sedation and analgesia. Substantial research in recent years has necessitated updates and revisions to the widely disseminated 1990 recommendations. The authors critically discuss indications, contraindications, personnel requirements, monitoring, dosing, coadministered medications, recovery issues, and future research questions for dissociative sedation.

Comments: Ketamine has been used in various dental settings in the past, but its use is widely restricted because it is classified as a general anesthetic agent. Many anesthesia textbooks recommend that only anesthesiologists administer ketamine, and this recommendation has been based on older anesthesia literature. This is an excellent paper that outlines a clear protocol for using ketamine safely. The authors suggest that ketamine be classified differently than other sedation agents because of a fundamentally different mechanism of action in which the thalamoneocroticcal and limbic systems are "disconnected," effectively dissociating the central nervous system from outside stimuli. Pediatric dentists would be wise to review this and other recent papers about ketamine and to promote changes to pediatric dental residency sedation programs so that the next generation of pediatric dentists will have this drug in their armamentarium. **ARM**

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Green SM, Krauss B. Clinical practice guideline for emergency department ketamine dissociative sedation in children. Ann Emerg Med 2004;44:460-471.

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