Conference Paper

Dental Education and Special-needs Patients: Challenges and Opportunities

Dennis J. McTigue, DDS, MS

Abstract: *Pediatric dentists have, by tradition and default, provided care for persons with special health care needs (PSHCN), regardless of age. Deinstitutionalization of PSHCN in the 1960s, however, overwhelmed the dental care system, and oral health care became one of the greatest unmet needs of this population. This presentation follows the history of training for dentists in this aspect of care, from the first demonstration programs in the 1970s to the current educational programs in U.S. dental schools. Today's dental students must be competent in assessing the treatment needs of PSHCN, but accreditation standards do not require competency in the treatment of this group of patients. Recommendations to rectify this include revising dental school curricula to be more patient-centered, improving technology in schools, earlier clinical experiences for dental students, and the use of community-based clinics. (Pediatr Dent 2007;29:129-33)*

KEYWORDS: PERSONS WITH SPECIAL HEALTH CARE NEEDS, DENTAL EDUCATION, ACCREDITATION, EDUCATIONAL STANDARDS

Formal dental education in the treatment of persons with special health care needs (PSHCN) has evolved over the last half century. In 1957, Cosmo Costaldi reported that a course in the treatment of "handicapped children" was relatively new to the dental curriculum.[1] Prior to that time, the few practitioners who recognized the tremendous dental needs of these patients struggled by trial and error to provide care. "Pedodontists" were most likely to treat these patients because most PSHCN didn't live beyond childhood. If they were fortunate, those who lived into their adult years with nonprogressive conditions such as cerebral palsy, mental retardation, and autism continued with the dentists who treated them as children. More seriously disabled people were institutionalized and did not seek dental care in the community. What oral health care they received was provided through their institution's medical care system.

This changed in the early 1960s when deinstitutionalization began mainstreaming patients into the community. The few dentists who had previously treated PSHCN were not able to meet the demand, and the resulting lack of access quickly made oral health care one of their greatest unmet health needs.[2]

Insufficient training of dental care providers was identified as one of the major barriers preventing access to care for this population.[3,4] In an effort to address this problem, the Robert Wood Johnson (RWJ) Foundation in 1973 funded a 4-year demonstration grant that supported model educational programs in 11 dental schools. These programs were designed to:

1. heighten students' awareness of the dental problems of PSHCN;
2. improve their technical skills in treating PSHCN; and
3. positively influence them to accept PSHCN in their practices.[5]

The early reviews of this experiment were wildly optimistic, prompting one author to declare "We may conclude that the principal barrier to dental care for the handicapped—an inadequate supply of providers—has virtually been eliminated as a result of this demonstration program."[5] If only that were true.

The Robert Wood Johnson program and the enthusiasm it engendered, however, did put treatment of PSHCN on the academic map. The American Dental Association adopted a resolution to support training programs for PSHCN, the American Association of Dental Schools (now the American Dental Education Association [ADEA]) developed curriculum guidelines. Importantly, the Council on Dental Education—precursor to the Commission on Dental Accreditation (CODA)—also included education on PSHCN in accreditation standards. This action was key because, resolutions and guidelines notwithstanding, the only way to mandate inclusion of a topic in a dental education program is to incorporate it into accreditation standards of the discipline in question. Then, theoretically, the institution is held to the standard through review by a site visit team every 7 years.

Dr. McTigue is professor, Department of Pediatric Dentistry, College of Dentistry, The Ohio State University, Columbus, Ohio.
Correspond with Dr. McTigue at mctigue.1@osu.edu

Getting a desired topic into accreditation standards is just a first step, however. Prior to the late 1990s, programs only needed to demonstrate that a topic was taught to meet the standard. They didn't have to show that students actually learned the topic or could complete a technical procedure. Furthermore, there were many standards and common accreditation practice was to grant full accreditation to programs even if they did not meet them all. The programs were required to report their progress in complying, but it was not uncommon in those days to see similar deficiencies in academic programs persist from accreditation cycle to accreditation cycle.

In 1998, the accreditation of dental education programs changed dramatically with the adoption of competency-based curricula. No longer was it acceptable to include a list of clock hours taught or numbers of procedures completed. Now, dental schools had to identify outcomes measures and demonstrate that their students actually learned required concepts and could perform specified tasks. The US Dept of Education (USDOE) raised the stakes for accreditation when it forced accrediting organizations, including CODA, to grant full accreditation only to only those schools that met every standard. The modern concept was for each program's faculty to define the core expected educational outcomes and then build the dental curriculum to prepare students to perform the necessary skills independently to meet those outcomes upon graduation.[6]

What did this move to competency-based dental education do for PSHCN or their access to oral health care? It is very difficult to tell. CODA continues to conduct clock-hour surveys to record the content of dental programs, and the average number of lecture hours devoted to PSHCN populations deceased 60% in the 1990s.[7,8] Furthermore, almost 70% of dental schools reported fewer than 10 hours of clinical instruction in this area.[9] More current data show a continued decline in the last 6 years.[10,11] The ADEA survey of senior dental students graduating in 2005 noted that the provision of oral health care to PSHCN is among the top 4 topics in which they are least prepared.[12] Notably, a recent survey of general dentists found that only 10% routinely treat children with special needs and only a quarter of those reported receiving any hands-on experience with PSHCN in dental school.[11]

There are also excellent examples of predoctoral programs providing significantly greater amounts of instruction both didactically and clinically[13] and some data demonstrating that the graduates of those programs provide more care to PSHCN in their practices[14,15] Several authors have reported that prior experience with a disabled population led students to be more likely to feel comfortable providing their care.[16-18] Kuthy showed that students were 10 times more likely to see mentally retarded patients in their offices if they had had previous experience.[18] Clearly, it is critical that dental students are taught to treat PSHCN—but how does one assure that it occurs in every dental school?

As noted earlier, the only way to mandate inclusion of a topic in a dental education program is to incorporate it into accreditation standards. In the 1980s through the mid mid-1990s, the standards explicitly stated that programs must provide "(a) clinical experience designed to complement didactic instruction in the dental management of handicapped and medically compromised patients...".[19] With the move to competency-based curricula and the USDOE requirement to meet every standard, however, any specific reference to the treatment of PSHCN was lost and the new language in 1998 stated that schools must ensure that:

> "(a)t a minimum, graduates are competent in providing routine care within the scope of general dentistry, as defined by the dental school, for the child, adolescent, adult, geriatric and medically compromised patient...".[20]

Given the wide latitude afforded dental faculties in determining competency-based curricula, many felt that this new language diminished education in the treatment of special needs. To address that concern, a group of dentists under the auspices of the Special Olympics petitioned CODA in 2001 to add rigor to the standards by explicitly including treatment of PSHCN in the general competency statement. They requested that the standard be modified to read:

> "At a minimum, graduates must be competent in providing routine care within the scope of general dentistry, as defined by the dental school, for the child, adolescent, adult, geriatric, medically compromised and mentally/physically disabled patient..."

The review committee that considered this request was comprised primarily of dental deans. It told the commission it believed that dental programs did include treatment of disabled patients in their didactic and clinical curricula. The review committee was also concerned that not all programs would be able to provide enough significant patient experiences to assure that each graduate is competent in the treatment of both mentally and physically disabled patients.[21] It recommended that the proposed change to add explicit language on PSHCN be rejected, and a majority of the commission agreed. Dissenters on the commission, however, were able to convince the group to seek alternative language assuring that institutions included special needs in their curricula. A separate new standard was drafted, and after 2 years of open hearings, committee meetings, and a survey of dental schools' curricula, the commission adopted the following compromise language[22]:

> "Graduates must be competent in assessing the treatment needs of patients with special needs."

The accompanying intent statement for this standard is:

> An appropriate patient pool should be available to provide a wide scope of patient experiences that includes patients whose medical, physical, psychological, or social situations may make it necessary to modify normal dental routines in order to provide dental treatment for that individual. These individuals include, but are not limited to, people with developmental disabilities, complex medical problems, and significant physical limitations. Clinical instruction and experience with the patients with special needs should include instruction in proper communication techniques and assessing the treatment needs compatible with the special need. These experiences should be monitored to ensure equal opportunities for each enrolled student.

Additionally, the commission adopted the following definition:

> Patients with special needs: "Those patients whose medical, physical, psychological, or social situations make it necessary to modify normal dental routines in order to provide dental treatment for that individual. These individuals include, but are not limited to, people with developmental disabilities, complex medical problems, and significant physical limitations."

This action of CODA was a strong step forward because it highlighted special needs issues in a separate standard and added a definition to clarify the targeted population, but even this was a compromise. The original language proposed for this new standard stated that students must be competent to treat PSHCN. This stronger statement was opposed because of a concern that not all dental schools would be able to provide care to a needy population without adequate funds to cover costs. Since the 1970s and the Robert Wood Johnson attempt, dental schools have seen resources devoted to dental health of the public rapidly decrease. State support of public schools has been slashed, and while Medicaid reimbursement for the care of adult disabled patients varies among states, it is essentially nonexistent. Furthermore, the Graduate Medical Education funds for dental school-sponsored general dentistry and specialty education programs have been eliminated. Clearly, the financial disincentives discourage dental schools from providing services to vulnerable population groups, including those with complex needs and limited resources.

Dental schools must provide affordable, quality education about PSHCN, but that is not likely to occur with today's curriculum. It is badly in need of reform, and there are significant challenges to overcome in making the needed changes. Many of these are noted in the Institute of Medicine's 1995 report, *Dental Education at the Crossroads: Challenges and Change*.[23] Among them are the need for much greater integration of dentistry with medicine and health care at all levels. Oral-systemic interactions are significant for the SHCN population, and our curricula must begin to address the need for interdisciplinary care.[24] Clearly, medical practitioners could include oral health promotion in their interactions with these patients. Dentists with better education regarding the systemic health of these patients will be more likely to treat them in their practices.[18] An innovative program designed by the American Academy of Developmental Medicine and Dentistry seeks to address this need by establishing post-residency fellowships for dentists and physicians.[25]

Our dental curricula continue to be largely procedure-based rather than patient-centered. The technical expertise required by clinical licensing exams that every dentist must take to practice continues to drive this phenomenon. The very tangible outcome of board pass rates leads dental curriculum planners to devote enormous portions of the predoctoral curriculum to technical skill acquisition. Complicating this dilemma is the challenge in just 4 years to incorporate abundant new information into the curriculum while continuing to teach procedures which, though declining in frequency, are still in clinical use.

Improving technology may allow schools to increase the efficiency of their technical instruction. Data indicate that laboratory simulators can quickly identify both technically gifted and challenged dental students. This could enable faculty to more rapidly advance some students while targeting resources for more technically needy students.

Clinical education should be incorporated into the dental curriculum in the first year. While Part I of the National Board Dental Examination drives most schools to load didactic courses in the first 2 years, interaction with SHCN patients where they live or work could do much to educate students about their needs. Exposing students to persons with disabilities early in their training and allowing them to observe those who treat them is as important as their providing the dental treatment themselves. The clinical skills they acquire treating able patients are essentially the same for PSHCN, but early exposure to an experienced clinician who demonstrates the willingness to listen to a caregiver and to be patient, flexible, innovative, and creative in providing customized care for the patient based on his/her needs is critical.

Using community-based clinics remote to the dental school can increase the efficiency of the clinical years (ie, have students go where the patients are rather than having these patients go to special clinics. Bertolami supports such a distributed method of clinical education where a mentor-protégé system is used similar to the medical model.[26] In other words, a professor-practitioner mentors a small group of students and may provide the clinical care or supervise

care completed by a student. Furthermore, there is evidence that students working in well-run community clinics can significantly increase their productivity.[27]

A mandatory postgraduate year (PGY 1) for all dentists has been suggested to enhance the residents' education and to increase access to patient care through their training programs.[28] The premise that better-trained dentists will treat more disabled patients, however, remains unproven. Indeed, in 2004, Casamassimo et al reported that dentists with 1 year of general practice residency or advanced education in general dentistry were not more likely to care for children with special needs than dentists without this education.[11]

Declining faculty numbers pose a further challenge to implementing significant curriculum change. Given the current curriculum model, will there be enough faculty to teach treatment of PSHCN to dental students?

Clarification is needed regarding what to teach dental students about PSHCN. There is currently a dearth of well-documented evidence on the appropriate care for these patients relative to the type of treatment, alternative treatments, and behavior management, among many other issues. A comprehensive review of the current "best practices" in managing sick or disabled patients is needed, and those recommendations should be widely circulated.

Data clearly show that students exposed to both didactic and clinical education are more likely to treat PSHCN upon graduation than those who are never taught. But will increasing the exposure to all dental students compel them to accept these patients in their offices, or will some actually be dissuaded based on their exposure?[29] One answer may be to develop selective/elective programs on the clinical care of PSHCN and award credit toward graduation to those students inclined to treat these patients.

Summary

Predoctoral or postgraduate dental education, no matter how comprehensive or well designed, cannot alone solve the access problem until the enormous financial factors affecting both the patient and the dentist are addressed. A large percentage of the PSHCN is dependent on public financing for medical and dental care, and these resources have continued to decline. Care of PSHCN will not occur without better education at the predoctoral level, but education alone does not guarantee that dentists will treat PSHCN in their practices. Until the reimbursement system is fixed, access problems are certain to continue.

References

1. Castaldi CR. Preparation for the undergraduate student to render care for the handicapped child. J Dent Educ 1957;22:66-70.
2. Nowak A. Dental care for the handicapped—past, present, future. In: Nowak AJ, ed. Dentistry for the Handicapped Patient. St. Louis, Mo: CV Mosby Co; 1976:3-20.
3. Miller S. Dental care for the mentally retarded: A challenge to the profession. J Public Health Dent 1965;25:3.
4. McConnell B. Survey of undergraduate and graduate educational exposure of treating handicapped children in dental school. In: Grewe JM, ed. Curriculum Workshop on Undergraduate and Graduate Dental Education Concerning Dental Treatment for Handicapped People. Minneapolis, Minn: University of Minnesota Press; 1967.
5. Campbell J, McCaslin C. Evaluation of a dental training program for care of the handicapped. Spec Care Dentist 1983;3:100-7.
6. Hendrickson W, Cohen P. Oral health care in the 21st century: Implications for dental and medical education. Acad Med 2001;76:1181-1206.
7. Fenton S. 1993 survey of training in the treatment of persons with disabilities. Interface 1993;9:1-4.
8. Fenton S. People with disabilities need more than lip service. Spec Care Dentist 1999;19:198-9.
9. Romer M, Dougherty N, Amores-Lafleur E. Predoctoral education in special care dentistry: Paving the way to better access? J Dent Child 1999;66:132-5.
10. Wolff A, Waldman H, Milano M, Perlman S. Dental students' experiences and attitudes toward people with mental retardation. J Am Dent Assoc 2004;135:353-7.
11. Casamassimo P, Seale N, Ruehs K. General dentists' perceptions of educational and treatment issues affecting access to care for children with special health care needs. J Dent Educ 2004;68:23-8.
12. Chmar J, Weaver R, Valachovic R. Annual ADEA survey of dental school seniors: 2005 graduating class. J Dent Educ 2006;70:315-39.
13. Waldman H, Fenton S, Perlman S, Cinotti D. Preparing dental graduates to provide care to individuals with special needs. J Dent Educ 2005;69:249-54.
14. Ferguson F. Dentists' willingness to provide care for patients with developmental disabilities: A survey of the graduates of the State University of New York at Stony Brook. Spec Care Dentist 1991;11:234-7.
15. Dao L, Zwetchkenbaum S, Inglehart M. General dentists and special needs patients: Does dental education matter? J Dent Educ 2005;69:1107-15.
16. Wolff A, Waldman H, Milano M, Perlman S. Dental students' experiences and attitudes toward people with mental retardation. J Am Dent Assoc 2004;135:353-7.
17. Block M, Walken J. Effect of an extramural program on student attitudes toward dental care for the mentally retarded. J Dent Educ 1980;44:158-61.

18. Kuthy R, McQuistan M, Riniker K, Heller K, Qian F. Students' comfort leveling treating vulnerable populations and future willingness to treat: Results prior to extramural participation. J Dent Educ 2005;69:1307-14.
19. Commission on Dental Accreditation. Accreditation Standards for Dental Education Programs. Chicago, Ill: American Dental Association; 1986.
20. Commission on Dental Accreditation. Accreditation Standards for Dental Education Programs. Chicago, Ill: ADA; 1998.
21. Commission on Dental Accreditation. Consideration of the Ad Hoc Committee Report to Study the Accreditation Standards Related to Dental and Dental Hygiene Students' Experiences Treating Mentally/Physically Disabled Patients. Chicago, Ill: ADA; 2002.
22. Commission on Dental Accreditation. Documentation Committee's Report on Proposed Standard 2-27 of the Accreditation Standards for Dental Education Programs, Standard 2-18 of the Accreditation Standards for Dental Hygiene Education Programs, and the Definition of "Special Needs Patient." Chicago, Ill: ADA; 2004.
23. Field M, ed. Dental Education at the Crossroads: Challenges and Change. Washington, DC: National Academy Press; 1995.
24. Mouradian W, Corbin S. Addressing health disparities through dental-medical collaborations, Part II. Cross-cutting themes in the care of special populations. J Dent Educ 2003;67:1320-6.
25. Fenton S, Hood H, Holder M, May P, Mouradian W. The American Academy of Developmental Medicine and Dentistry: Eliminating health disparities for individuals with mental retardation and other developmental disabilities. J Dent Educ 2003;67:1337-44.
26. Bertolami C. Rationalizing the dental curriculum in light of current disease prevalence and patient demand for treatment: Form vs content. J Dent Educ 2001;65:725-35.
27. Bailit H. Community-based clinical education programs: Major findings and recommendations. J Dent Educ 1999;63:981-9.
28. Bailit H, Beazoglou T, Demby N, McFarland J, Robinson P, Weaver R. Dental safety net: Current capacity and potential for expansion. J Am Dent Assoc 2006;137:807-15.
29. Casamassimo P. The great educational experiment: Has it worked? Spec Care Dentist 1983;3:101-6.

Abstract of Science of Literature

Preterm Birth Weight and Periodontal Disease

This study explored the effect of non-surgical periodontal treatment on preterm birth. Women between 13 and 17 weeks of gestation were recruited to undergo scaling and root planing either before 21 weeks (413 patients in the treatment group) or after delivery (410 patients in the control group). The gestational age at the end of pregnancy was the prespecified primary outcome. Secondary outcomes were birth weight and the proportion of infants who were small for gestational age. Results: In the follow-up analysis, preterm birth (before 37 weeks of gestation) occurred in 49 of 407 women (12.0%) in the treatment group (resulting in 44 live births) and in 52 of 405 women (12.8%) in the control group (resulting in 38 live births). Although periodontal treatment improved periodontitis measures (P<.001), it did not significantly alter the risk of preterm delivery (P =.70; hazard ratio for treatment group vs. control group, 0.93; 95% confidence interval [CI], 0.63 to 1.37). The authors concluded that treatment of periodontitis in pregnant women improves periodontal disease and is safe but does not significantly alter rates of preterm birth, low birth weight, or fetal growth restriction.

Comments: *This was an NIH sponsored, multi-center study with a sample size of 823 patients. The results clearly demonstrate no association between maternal periodontal health and the risk of pre-term or low birth weight. This calls into question the role of pediatric dentists in counseling expecting mothers regarding the periodontal disease-low birth weight relationship until future studies prove otherwise. As a separate issue, the treatment of periodontal disease is safe during pregnancy.* ***SL***

Address correspondence to Dr. Bryan S. Michalowicz, 17-116 Moos Tower, 55 Delaware St. SE, Minneapolis, Minn 55455; email: micha002@umn.edu

Michalowicz BS, Hodges JS, DiAngelis AJ, et al. Treatment of periodontal disease and the risk of preterm birth. N Engl J Med. 2006 Nov 2;355:1925-7.

35 references