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Advancing Dental Hygiene Education to Affect Earlier Diagnosis, Better Treatment, and Appropriate Referrals for Specialist Care of Periodontal Disease, Part 2

This month, at the 81st Annual Session of the American Dental Hygienists' Association in Dallas, Texas, the concept and educational framework for an advanced-practice dental hygienist will be introduced. As recognition of the need for this new health care provider is gaining momentum, its relevance, specifically to the field of periodontics is becoming increasingly evident.

In the May 2004 Perio Pathways column, I cited 2 of the most significant problems I believe we face in addressing the epidemiological trends in periodontal disease—underdiagnosis and the failure to educate patients regarding the difference between periodontal health and disease. Epidemiological research that highlights the disparity between estimates of the prevalence of periodontal disease and the number of cases that are actually being diagnosed were discussed. Other research included Cobb and colleagues' recently reported trends in referrals to periodontists, which calls into question the ability of general practice clinicians to diagnose early stage periodontal disease, perform appropriate treatment, and/or identify cases that should be triaged to periodontists in a timely manner.[1]

The fact is that with the exception of periodontal maintenance procedures, most nonsurgical periodontal treatment is being performed in general practice settings (Figure 1).[2] However, a number of researchers and academicians have questioned whether the nonsurgical procedures performed in general practice setting, are being done according to standards of care.[3-5]

Cobb and colleagues emphasized that "...the parameters of care and responsibilities inherent in diagnosis and treatment of periodontal diseases do not differ for general practitioners and specialists."[1] Although this precept is often ignored, general practices that seek to be credible providers of comprehensive periodontal care must have knowledgeable clinicians who are serious about making patient-centered, evidence-based decisions regarding treatment plans and they must have expert technical skills because they are held to the same standard of care as a periodontist.

As a follow-up to Cobb and colleagues' findings, McGuire and Scheyer wrote a guest editorial in the *Journal of Periodontology* that speculated on the reasons why referrals to periodontists have been so negatively impacted.[4] *"Today, it is not uncommon for general dentists to proclaim that they can identify and treat all their patients' periodontal needs. Since 1980, practice management seminars have been encouraging general practitioners to partake in soft tissue management protocols, and nonsurgical treatment is looked upon as a much more important income center in the business model of today's general practice than it was 20 years ago….Many...may delay their referrals to maintain their revenue stream with soft tissue management programs."*

I wish I could argue otherwise, but McGuire and Scheyer are right in their observation. Unfortunately, many practice management consultants and industry leaders advocate turning hygiene departments into profit centers by ramping up the number of periodontal procedures preformed. Sadly, they often fail to provide adequate information about the science of nonsurgical periodontal therapeutics, which has received consensus opinion. Many general practitioners gravitate to periodontics as a revenue model, claiming that they can manage all their patients' periodontal needs and have clinicians who lack the depth and breadth of the scientific knowledge necessary to sustain positive therapeutic outcomes over the long term. As a result, there often is a recurrence of periodontal disease progression in patients.

This article will briefly discuss how the trends in dental hygiene education may be compromising dental hygienists' ability to fulfill our important role as primary care providers in diagnosis and treatment or referral of periodontal disease. In a future issue of *Contemporary Oral Hygiene*, the third part of this 3-part series will address the questionable ethics of focusing on the profit incentive related to nonsurgical periodontics with disregard for evidence-based, patient-centered standards of care and conclude by offering some ideas that may advance education for dental hygienists who aspire to practice as periodontal therapists.

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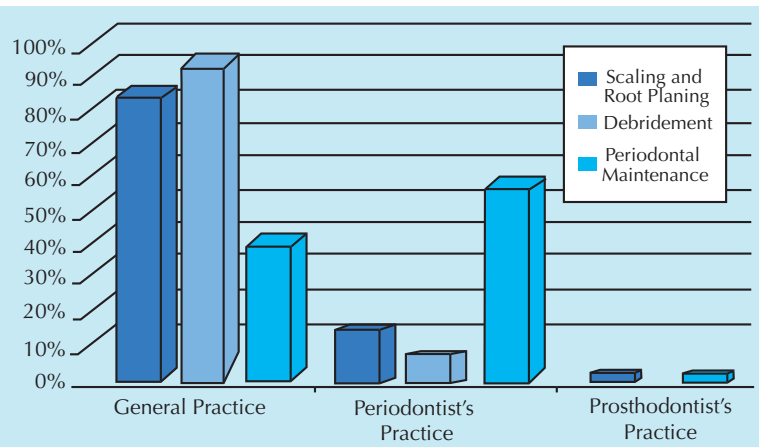
The Burden of Care

Who will assume the burden of periodontal care in this millennium? As far back as 1981, the Subcommittee on Preventive Periodontics of the American Association of Public Health Dentists (AAPHD) advocated the dental hygienist as the "critical" element "in the global scheme of preventive periodontics."[6] The subcommittee also noted that "because of complex social, political, legal, and economic factors, however, the full potential of the hygienist resource has not been brought to bear optimally on the nation's primary oral health problem."[6]

Given state dental practice acts that place artificial limitations on state-funded dental hygiene programs—states that disallow dental hygienists' placement of site-specific antimicrobials and giving local anesthetic, organized dentistry's push for alternative pathways for dental hygiene education, and the threat to accreditation—many are concerned that developing dental hygienists as the "critical" element "in the global scheme of preventive periodontics" will never be realized. But if you consider the facts that follow, it becomes clear that dental hygienists are the health care providers who are best positioned to respond to this call.

- There are currently close to 60 million people with some level of periodontal disease in the United States.[7]
- Currently, there are approximately 4,000 active periodontist members of the American Academy of Periodontology.[8] Meeting all the needs for nonsurgical care cannot be done by periodontists alone.
- For the 2001-2002 academic year, the average undergraduate dental school curriculum clocked 4,888 hours. Only 295 of those hours, or roughly 6% of curriculum time, was dedicated to periodontics.[9]
- Accreditation standards of dental hygiene pro-

Percentage of Nonsurgical Periodontal Procedures Performed within Various Practice Settings



Source: American Dental Association, Survey Center. *National Estimates of Dental Services Completed by Private Practioners, 1999. Survey of DentalServices and Distribution of Dentists in the United States by Region and State, 1999.* Chicago, Ill: American Dental Association; 1999.

***Figure 1**—Most periodontal care is performed in general practice settings. Are general practice clinicians trained well enough?*

grams mandate that first year clinical dental hygiene students must have at least 8 to 12 hours of clinical practice per week, and second year clinical students are required to have 12 to 18 hours of practice per week. Although some of these clinical hours may be spent on training in preventive care, such as pediatric dentistry, hygiene students spend a significantly greater amount of time refining their technical skills in periodontics.[10]

- Between 1985 and 1995, the annual numbers of dental school graduates declined by 23% while the number of graduating dental hygienists grew by 20% (Figure 2). That rate of hygiene graduates continues to substantially outpace the rate of dentist graduates.[11]
- There are many pockets of underserved areas, which range from inner cities to rural areas. The number of Designated Dental Health Profession Shortage Areas (D-HPSA) has increased to 2,477, encompassing over 40,000,000 people. Dental hygienists will increasingly extend the accessibility of oral health care, which will make a significant difference in the dental profession's responsibility to address the prevalence of periodontal disease in these underserved populations.[12]

The Impact of Educational Trends on the Prevalence of Periodontal Diseases

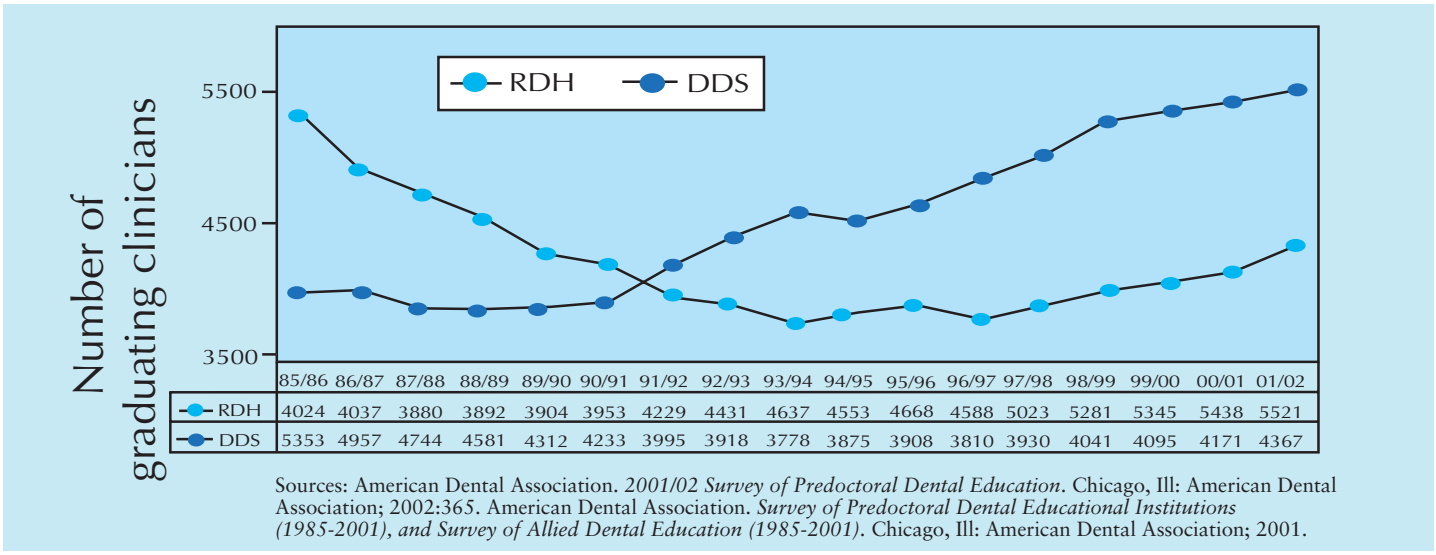
There is a growing awareness that transfer of research-based knowledge and technology to practicing dental professionals has lagged behind the expansion of the knowledge for the etiology of dental diseases and methods of treatment.[13] Ironically, this lag in transfer of research-based knowledge comes at the same time that dental hygienists are being encouraged by public health mandates to "step up to the plate." The Surgeon General's 2000 "Oral Health in America" report stated, "The mouth is the center of vital tissues and functions that are critical to total health and well being across the life span…the mouth is a mirror of health or disease, as a sentinel or early warning system, as an accessible model for the study of other tissues and organs, and as a potential source of pathology affecting other systems and organs."[14] Who are better positioned than dental hygienists to intercept periodontal disease as a potential source of pathology of systemic consequences? If dental hygienists are to assume this front-line responder role, they must be educationally empowered to fulfill this responsibility.

Faculty shortages, state funding deficiencies, and attempts to undermine accredited education are limiting the availability of baccalaureate degree and postgraduate degree programs.[15] During its 2003 Annual Session, the American Dental Hygienists' Association held a forum designed for clinicians and academicians to discuss how to overcome the gap between what is taught and what we need to learn to be effective in today's clinical practice. The findings of this meeting helped point out some very significant challenges that academicians currently face in preparing dental hygienists for future practice and in ensuring viability in the higher education community.[16] Some of the constraints educators currently face are[16]:

- competition in dental and dental hygiene schools for clinical facilities.
- declining budgets for renovation or purchase of new technologies.
- limitations in the number and types of periodontal patients as a result of the competing clinical requirements of dental students.
- conflicts related to the institution's philosophies on what constitutes the level of periodontal care that should be rendered by a dental hygienist.
- inadequate time to provide long-term care and/or follow-up on periodontal cases.
- a shrinking supply of qualified dental hygiene faculty and limited experience by many current faculty members in advanced nonsurgical periodontal therapeutics within private practice settings.

These constraints make it challenging to educate students in core competencies, let alone periodontal disease etiology, periodontal medicine, new technologies, pharmaceutical treatment modalities, and the increasingly complex needs of an aging and diverse patient population. The implication of the lag research-based knowledge in educational programs has a tremendous impact on our ability to prepare dental hygienists for practicing at the level necessary in this millennium. As a result, the survival of a vibrant profession may be compromised. Most troubling is the fact that though research indicates that many dental hygiene educators have made strides in creating evidence-based philosophy within their curriculum, the strides are small compared with where we need to be.[17]

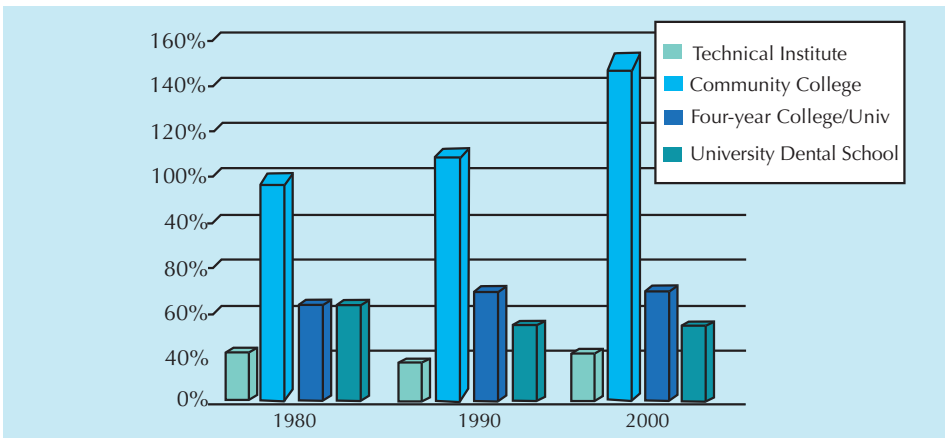
Given the constraints educators face in evidence-based skill training, it would appear that insufficient numbers of new graduates may lack the critical thinking and problem-solving skills necessary for practicing advanced periodontal therapeutics.[18,19] Many educators are strongly



	85/86	86/87	87/88	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	96/97	97/98	98/99	99/00	00/01	01/02
RDH	4024	4037	3880	3892	3904	3953	4229	4431	4637	4553	4668	4588	5023	5281	5345	5438	5521
DDS	5353	4957	4744	4581	4312	4233	3995	3918	3778	3875	3908	3810	3930	4041	4095	4171	4367

Sources: American Dental Association. *2001/02 Survey of Predoctoral Dental Education*. Chicago, Ill: American Dental Association; 2002:365. American Dental Association. *Survey of Predoctoral Dental Educational Institutions (1985-2001), and Survey of Allied Dental Education (1985-2001)*. Chicago, Ill: American Dental Association; 2001.

***Figure 2**—Between 1985 and 1995, the annual numbers of dental school graduates declined by 23% while the number of dental hygienists grew by 20%. The rate of dental hygiene graduates far outpaces the rate of dentist graduates, which places the burden for periodontal care on the dental hygiene profession.*



Source: American Dental Association. *Survey of Predoctoral Dental Educational Institutions (1985-2001), and Survey of Allied Dental Education (1985-2001)*. Chicago, Ill: American Dental Association; 2001.

***Figure 3**—The trend in dental hygiene education over the last 20 years has been a dramatic increase in the number of 2-year programs at community colleges, an increase in 2-year programs at technical institutes, and a decrease in the number of baccalaureate programs.*

supportive of the dental hygiene accreditation standards, which mandate that hygiene students are taught to be self-directed, problem-solving, critical thinkers who have lifelong learning skills.[20]

Indeed, without advanced education for dental hygienists who want to practice as periodontal therapists, we have to rely on a rigorous course of independent self-study that will require critical thinking skills. It is important to underscore the need to constantly survey and verify leading edge scientific information, pass it through a filter for validity, significance and relevance, and finally transfer only scientifically founded information and treatment modalities into everyday dentistry.

Another issue is curriculum requirements that may even now be "over the top" for 2-year programs, not to mention the possibility of adding more advanced scientific information. The closing of many baccalaureate programs and the growth of 2-year programs may be making it difficult to educate new dental hygienists to the optimal knowledge level.[20] There is also concern that the expanding number of 2-year programs in community colleges and technical schools lowers the educational standing of dental hygiene among other allied health disciplines (Figure 3).[20] Many educators believe that dental hygiene curriculum is so full that most dental hygiene programs require more than 2 years to complete an associate's degree and that 4-year dental hygiene programs have strength because of their breadth and depth of courses.[20] As a result, there seems to be increased interest in trying to achieve some level of national consensus in identifying appropriate curriculum content for associate and bachelor's degree programs.[20]

Conclusion

The ADHA's 81st Annual Session is an unprecedented time for dental hygienists with diverse backgrounds to offer testimony that will formulate changes in our profession that have the potential to be of groundbreaking magnitude. Whether the diversity of opinions in dental hygiene education can be melded together is anyone's guess at this time. However, what we can be sure of is that we are at a critical point in advancing the profession of dental hygiene. Unity and willingness to compromise on certain issues by putting the profession first will be important. The opportunity to advocate for an advanced-practice dental hygienist level that includes nonsurgical periodontal therapeutics may be one of the most promising things we can do to move dental hygiene to absolute recognition as a profession. And, as dental hygienists are called on to provide comprehensive, state-of-the-art, nonsurgical periodontal care to populations with increasingly complex needs, there has never been a better time to adopt the model of the advanced-practice dental hygienist who specializes in periodontics. COH

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