

Establishing Your Personal Vision for Professional Practice through Application of Periodontal Science

I began writing Perio Pathways for *Contemporary Oral Hygiene* 2 years ago. Since that time, I have received many questions about the best path for professional development. To answer those queries, I hope readers will give me the liberty to begin this article by sharing my journey in establishing a personal vision for my own professional practice. Establishing your vision is a very valuable exercise in bringing about career growth and, hopefully, my journey might inspire other dental hygienists to do the same.

Although dentists are often encouraged by management consultants to establish a professional mission for their practices, few dental hygienists recognize this as essential to their own growth and forfeit this valuable opportunity. As a result, their dreams are usually never realized.

My journey within the dental hygiene profession can be described as anything but linear growth. When I received my bachelor of science in dental hygiene from West Virginia University in 1974, my classmates and I received one of the best educations offered in dental hygiene. Thirty years ago, we assumed that a plaque-free mouth equaled a disease-free mouth, and that periodontal disease was the natural progression of etiological events for any patient with plaque and calculus. We also assumed that everyone was universally susceptible to periodontal disease. What we learned was grounded in the *nonspecific plaque hypothesis*, which meant mastering the mechanical art of chasing down microbial plaque, planing root surfaces to a glassy finish, and coercing our patients into flossing.

During my first few years of clinical practice and teaching, I became frustrated that the endless intervals of 6-month prophies made little difference in averting periodontal disease in many of my patients. After several years of being conditioned to accept less than ideal clinical outcomes (no accountability for care), I began to feel like a “cleaning lady”; this is not an unusual feeling for many dental hygienists who aspire to practice excellence in periodontal therapeutics.

My disillusion was so great that I decided to depart dentistry and begin a career in business. I was so sure of my decision that I even declined to renew my licenses in 5 states. I was so certain dental hygiene was not for me that I also tried to dissuade my younger sister, Jacque, from applying to dental hygiene school.

Ten years later, Jacque became the quintessential periodontal therapist and urged me to rejoin the dental hygiene profession. In 1990, she challenged me by saying, “Dental hygiene is really different...we’re practicing more as scientists now and

less like ‘cleaning ladies.’” I gave this serious thought, but I recognized that the price for my re-entry into dental hygiene would be steep.

Sitting again for my Northeast Regional Board (NERB) exams after leaving dentistry so many years ago would be a scary experience. To put this into perspective, the last time I practiced was when clinicians were not wearing gloves or masks and the AIDS epidemic was still relatively remote. I was unfamiliar with all of the new universal precautions, etiological theory, treatment modalities, and this new thing called *soft-tissue management*. When I weighed my odds of being able to successfully pass the NERB exams, I knew I would have to strategically isolate my clinical weaknesses.

After I identified the gap in my education and current scientific research, I knew I had to update my knowledge and skill set to a level I was certain would allow me to pass the written and clinical exams. I felt strongly that if I was going back into dental hygiene, I was going back as more of a scientist and not as a “cleaning lady.” That determination allowed me to score significantly higher on the NERB exams than when I was tested 15 years previously. It was then that my personal vision for a professional practice started to take shape.

When I began clinical practice shortly thereafter, I realized that my passion was in perfecting the outcomes of my nonsurgical periodontal cases. This was about the same time that we began to hear about a concept called evidence-based decision-making (EBDM) in dentistry. The time seemed ripe for me to start specializing in nonsurgical periodontal therapy and it was at this point that my schedule was appointed exclusively with periodontal patients.

I chose to practice with dentists who valued dental hygienists who were self-directed, independent learners and preoccupied with establishing clinical protocols that produced predictable outcomes in periodontal care. These dentists placed essential trust in my ability to make autonomous decisions regarding treatment modalities that had enough strong scientific evidence to support their transfer

into everyday practice. It has been that pursuit of the best scientific evidence and its integration into clinical practice that has driven my success as a periodontal therapist.

As a result, closing the gap between what is known in research and how I practice became my personal vision for my own professional practice. EBDM is the mechanism for fulfilling this vision. By incorporating EBDM in periodontal therapeutics, I began to rely more on valid, scientific findings than my past clinical experiences to substantiate my recommendations for patient treatments. Over time, I could see that EBDM minimized the number of cases of “zero sum” treatment I had (ie, treatment that neither benefited nor harmed patients). I could also see that EBDM increased the number of cases I could claim that had predictable, positive clinical outcomes.

The Promise Scientifically Driven Decisions Holds for Private Practice

The hard reality is that given the scientific findings in periodontology that continue to pour through the research pipeline, no one clinician can stay current. As a result, what we are witnessing is a mounting delay in transferring highly relevant information and adopting promising treatment modalities into private practice settings. However, EBDM provides the mechanism for systematically finding, appraising, and using current research to guide clinical decisions to ensure we offer the best care possible to patients.

EBDM requires we seek to understand new concepts that may often supplant traditional paradigms and what we once learned in school. In this regard, incorporating the various levels of evidence related to periodontal-systemic links into private practice has begun to mentally stretch us. In a public opinion survey published in 2000, the American Dental Association (ADA) examined the respondents’ level of agreement with statements concerning the importance of maintaining oral health as it relates to whole body health.¹ When respondents were asked if “prevention of ‘gum disease’ is an important step in maintaining overall health,” 1.2% did not have an opinion.¹ But for those who did, 97.8% of those surveyed agreed somewhat or strongly agreed with the statement.¹ Respondents also acknowledged the existence of “a link between ‘gum disease’ and other health problems”; 90.5% of those with an opinion on this matter agreed somewhat or strongly agreed that there is a link.¹

It is hardly a secret that there may be a link between periodontal disease and systemic conse-



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quences, yet many clinicians feel they are going out on a limb when discussing periodontal infection as an independent risk factor for systemic implication. Clinicians today must become knowledgeable about the investigations into preterm delivery of low birth weight babies, atherosclerosis, cardiovascular disease, stroke, nosocomial bacterial pneumonia, chronic obstructive pulmonary disease, and challenges with metabolic control of diabetes associated with chronic periodontitis to accurately communicate this information to patients.

Failure to step back from the technical aspects of mechanical dentistry and read consensus reports will compromise clinicians' ability to integrate appropriate evidence of periodontal-systemic links into daily general practice environments, which may become a liability in the near future. EBDM also requires that we not rely on anecdotal experiences at the cost of ignoring strong scientific evidence, and that we have a commitment to learn new skills, such as assessing risk for periodontal disease and calibrated evaluation of clinical outcomes.

Basing Treatment Decisions on the Best Available Evidence

In spite of the fact that EBDM is endorsed by the ADA, the American Association of Periodontology, the American Dental Hygienists' Association, and other professional organizations, there is concern that EBDM may erode clinical freedom and dehumanize patients by promoting a cookie-cutter approach to the process of care.² This perception seems entirely misguided because scientific evidence is considered only one part of the decision-making process. The ADA defines *evidence-based dentistry* as "an approach to oral health care that requires the judicious melding of systematic assessments of clinically relevant scientific evidence, relating to the patient's oral and

medical condition and history, with the dentist's clinical expertise and the patient's treatment needs and preferences."³

The importance of considering the relationship between scientific evidence, clinicians' experience and judgment, patients' preferences and values, and patients' clinical status when making evidence-based decisions is illustrated in the Figure on this page. So what is the implication of this for seasoned clinicians with a ton of experience? Does that mean patient factors are given equal weight as the science?

When using the evidence-based approach to treatment decisions, if new scientific evidence seems to contradict a traditional approach we have used in the past, we must defer to those new findings, regardless of the depth and breadth of our clinical experience. Information derived from scientific inquiry is given more weight than information based on intuition, authority, or custom.⁴ The issue of when to recommend a new procedure or apply scientific findings to individual patients is the responsibility of clinicians based on their experience and judgment.² Clinicians also are responsible for integrating the patient's values, preferences, and oral/medical condition into appropriate treatment plan options.²

Patients' values and preferences include patient priorities, motivational level, financial limitations, or cultural biases. Overlooking these factors takes on an ethical dimension if clinicians insist on any one treatment irrespective of the preferences and values of patients. A good example of this is a practice that refuses to honor the request for a regular 6-month prophylaxis from a patient who has previously been diagnosed with periodontal disease and who denies periodontal treatment.

Consideration of patients' oral/medical conditions are important because there are certain

oral/medical conditions that may contraindicate certain procedures and preclude ideal treatment. For example, alterations in the self-care recommendations a clinician may make to a patient with physical limitations imposed by rheumatoid arthritis, or the recommendation of host modulatory therapy to a diabetic with chronic periodontitis and poor metabolic control of diabetes. "Clinical judgment required to make use of the evidence in the face of particulars about patients is [also] captured within the 'art' of clinical practice."²

Accordingly, the recommendations for full-mouth reconstruction offered to a smoker

with advanced chronic periodontitis who refuses to stop smoking would likely be different than the recommendations we make to a past smoker with moderate loss of periodontal support with regard to treatment that involves surgical interventions.

All dental care providers have a professional obligation to provide patients with current, unbiased information and alternative options to treatment, allowing them to make choices that are in their own best interest. Clinicians are considered the primary conduit through which this scientific evidence is communicated to patients.

Because of the uniqueness of the one-to-one clinician-patient relationship, some have ethical concerns related to whether clinicians are sufficiently enlightened to interpret and disseminate evidence without bias and in such a way that patients understand the implication of research findings well enough to make educated decisions regarding treatment.⁵ It is my experience that given the difficulty many private practice clinicians have in collecting current scientific information and critically assessing research findings, those ethical concerns seem valid.

The principles of evidence-based methodology being advocated for clinicians in private practice include⁶:

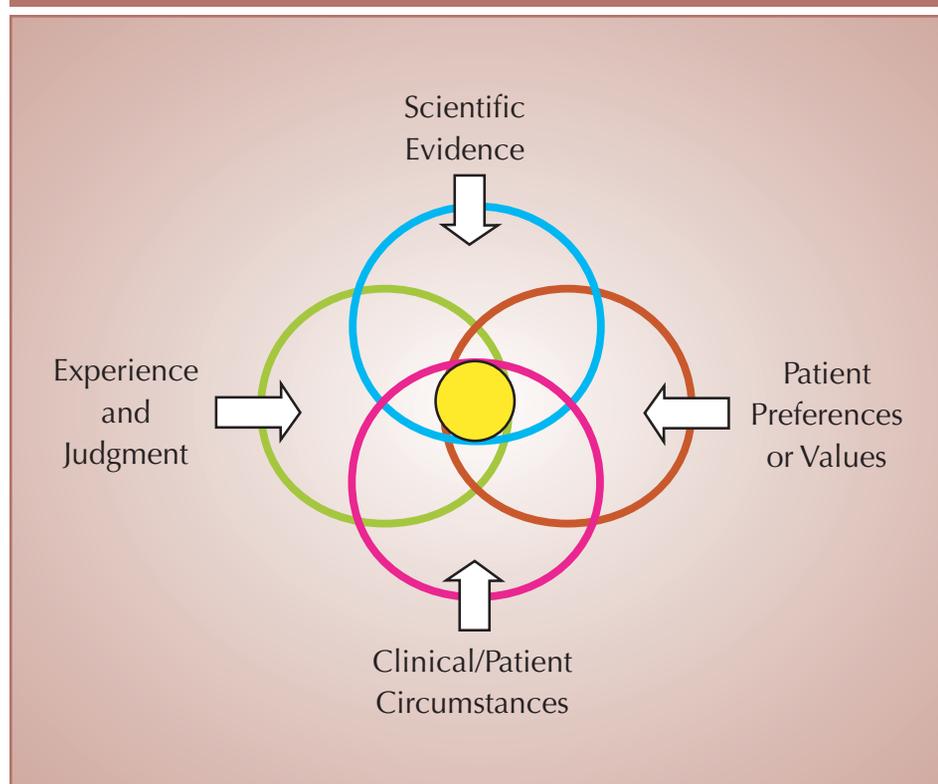
- clearly stating the question being studied.
- using comprehensive search methods to locate relevant studies.
- using explicit methods to determine which articles to include.
- carefully assessing the validity of the primary studies with methods that are reproducible and free from bias.
- ensuring that the conclusions are supported by the data cited.
- determining the relevance of the findings.
- applying relevant findings and taking action.
- evaluating performance.

Although I will always promote the ideal within our profession, I strongly believe that we are deluding ourselves by thinking that this intensive kind of effort will be performed in everyday practice for a multitude of reasons. Many of these reasons are related to practice management issues, which are discussed at the end of this article, and educational issues, which are discussed below.

Clinicians are expected to provide safe and effective care based on evidence derived from research, but the truth is the skills to do so have not necessarily been taught in all dental hygiene programs to the extent defined by EBDM methodology.⁶ Although the majority of dental hygiene programs incorporate evaluations of research findings for clinical application, even many recent graduates lack the critical thinking skills necessary to appropriately evaluate research, not to mention the clinicians who were educated before EBDM became a part of curriculum.⁶ The end result is that it may be unrealistic to expect clinicians to use the EBDM approach at this time because they have not been adequately prepared to do so.⁶

Dentistry is not alone in this. Literature from many health care disciplines is replete with examples of new research findings that are not being widely used in decision-making.⁷⁻¹⁰ There may be a way around these limitations though, such as dis-

Figure—The evidence-based decision-making process. The target for clinical decisions is the confluence of the circles depicting the relationships between 4 distinct components of the decision-making process.⁶



Table—The Evidence Hierarchy: Comparison of Methodology for Collecting and Assessing Information to Determine Strength of Evidence¹¹

| Method of Collecting and Assessing Information | Purpose | Strength of Inference for Clinical Decision-making |
|---|---|--|
| Surveys | Determines practice patterns, attitudes. | Weak |
| Expert opinions | Provides guidance in areas in which data may be inadequate. | Weak |
| Narrative literature review | Overview of reviewers' interpretation of the subject. Collection of evidence is determined by reviewers' personal experience. | Moderate |
| Systematic evidence review | Comprehensive, objective search and analysis of all evidence including unpublished data. More reliable and accurate conclusions and inferences. | Strong |
| Consensus based on evidence-based systematic review | Combines expertise of multiple stakeholders with systematic review. Highest level of evaluation and most useful. | Strongest |

semination of research findings that are considered, by consensus findings, as the best available evidence.

What Is the Best Available Evidence?

Because of the overwhelming amount of scientific findings that continue to emerge, it is clear that we need a standard, unbiased method to evaluate information that allows policymakers, patients, and clinicians to make treatment decisions based on the best available evidence. For more than 50 years, extensive information on periodontology—surveys, expert opinions, literature reviews, and systematic evidence reviews—has provided a rational basis for choosing the best treatment for patients. However, the strongest method of collecting and assessing information is *consensus opinion based on systematic review* because of the combined expertise of multiple stakeholders that participate in the scientific process (Table).¹¹

Consensus opinion based on systematic review was the basis for the consensus reports from the Workshop on Contemporary Science in Periodontology conducted in July 2003 (available in the *Annals of Periodontology*).¹² The workshop generated objective consensus opinions related to many key research issues under recent investigation, including host modulation, periodontal-systemic associations, anti-infective agents, and tissue engineering for natural teeth and implants, giving clinicians reliable, cut-to-the-chase information that can be readily integrated into clinical practice.¹²

Although the *Annals of Perio-*

dontology bridges a gap in what is known in science and what is practiced at this time, the information contained in this publication will be replaced by new scientific findings, meta-analysis of those findings, and updated consensus opinions. By its sheer nature, scientific inquiry is meant to stimulate new research and development to provide us with more information on the pathogenesis of periodontal disease and to give us innovative treatment modalities that target newly discovered etiological components of disease. There is no particular way to stay abreast of the science. Academicians and authors have suggested a host of good ideas for self-directed learning, including continuing education, networking with colleagues at professional meetings, study club participation, and subscription to professional journals.

I also suggest that dental hygienists who are serious about wanting to specialize in nonsurgical periodontal therapy attend the continuing education offered at the annual session of the American Academy of Periodontology (visit www.perio.org for more information). I recommend reading articles from journals outside the dental hygiene profession, such as the *Journal of Periodontology*, the *Journal of Clinical Periodontology*, and the *New England Journal of Medicine*, among many others.

Ethical Implications of Disregarding Scientific Evidence

When scientific evidence is available, dental hygienists have a responsibility for sharing this information

with their patients and incorporating clinical research into patient care. To do otherwise would be like a medical care provider neglecting to tell you about a new diagnostic test to detect the presence of a life-altering disease. The Code of Ethics for Dental Hygienists states that we should “provide clients with the information necessary to make informed decisions about their oral health and encourage their full participation in treatment decisions and goals.”¹³

Barriers to implementing scientific evidence into private practice are often the result of coexisting constraints. At the dental team level, changes the practice may make are often influenced by group behavior or the opinion of an outspoken leader with varying degrees of knowledge that may not be scientifically founded. At the practice level, implementing new treatment strategies based on current science may require the purchase of new or different equipment or additional supplies, a different type of patient scheduling, additional human resources, and the new commitment to scientific justification and/or its associated cost that may be in conflict with the practice philosophy. At the level of professional community, implementation of new protocols based on science can often be jeopardized if general dentists rely on local expert opinions over the consensus opinions of recognized authorities.

Conclusion

Mahatma Ghandi once said, “We must become the change we want to see.” To that end, I want to encourage other clinicians to embrace the

science because of the promise it provides in bringing about sustainable health beyond the periodontium. However, knowing the science is not enough. We must make sure the science reaches its final destination—the patient. As more progressive clinicians transfer credible scientific findings beyond academic centers into everyday clinical settings we will reach a tipping point, after which this change in the private practice arena will gain exponential momentum. Take the time now to establish your personal vision for professional practice via the science. For those who have decided to do so, have an exciting journey.

Author's Note

For those readers who are interested in implementing EBDM in private practice, I welcome you to my Web site, www.pointperio.com, where you can access “Steps for Strategic Implementation of EBDM in Private Practice Environments” through the “Toolbox” icon. **COH**

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