

The Evidence-Based Approach to Prosthodontic Practice and Research

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“Medicine is a science of uncertainty and an art of probability,” according to the well-known Canadian physician William Osler. Are our prosthodontic theories and practices truly based on this principle, or is prosthodontics based on a fundamentalism that one must adhere to before being invited into a guild? This essay attempts to explain this phenomenon in light of the structural and philosophical changes in society and medicine. It is suggested that an approach to patient care based on evidence-based principles is the appropriate common denominator that should embrace prosthodontics on a global scale. Differences in clinicians’ perceptual and judgemental abilities and dissimilar treatment thresholds explain the variations in treatment decisions. At least 3 other factors heavily influence daily treatment decisions, whether consciously or unconsciously: (1) current philosophical trends, (2) the arrival of medical textbooks approximately 40 years ago that severely criticized the current health systems, and (3) the application of clinical epidemiology into clinical reasoning. These factors call for a rational strategy to cope with continuous changes. This strategy is coined evidence-based health care, practice, medicine, dentistry, and many other variations.

There are deep cultural and structural criticisms of the ontology and epistemology of modern western philosophy. Examples of such trends are evident in many new scientific articles, even without the authors being consciously aware of them. Two such trends are modernism, strongly influenced by Ihab Hassan, Karl Popper, and Thomas Kuhn, and postmodernism, influenced by Jean F. Lyotard. A third trend is poststructuralism, represented by Michel Foucault and Jacques Derrida, which focuses on theoretical deconstruction-ism in multiethnic, multicultural societies that are rapidly merging and changing.

Intensified cultural and structural criticisms have also become apparent in medicine. In 1962, Thomas McKeown¹ asked what the role of medicine is when improvements in health are due as much, if not more, to social and environmental changes than to health care. The first book to discuss the basis and process of clinical decision making in medicine was written in 1967 by Allan Feinstein.² Another essential book, by Archie Cochrane in 1972,³ questioned the knowledge base of

medicine and called for rigorous evaluation of the effectiveness of interventions. Finally, the first publication of “Our Bodies, Ourselves: A Book by and for Women”⁴ in 1973 seriously challenged the male-dominated medical services in North America and called for women to empower themselves.

Reflected in these central textbooks are severe criticisms of medical care effectiveness, health equity, costs, and priorities in health and research. Moreover, these textbooks served as calls for awareness regarding the ineffectiveness of many health care interventions, as well as the lack of evidence of effectiveness of other interventions.

Some assign the current lack of understanding regarding adequate and inadequate scientific papers to inappropriate training of physicians and dental clinicians, which in many parts of the world continues to replicate a curriculum suggested in 1910 (!), ie, the Flexner Report.⁵ This report mandated that all curriculums should be based on pathophysiologic underlying principles, because many diseases and interventions at the time were poorly understood, and thus the answers would be found in the laboratories and not by direct patient observation and experimentation. While of course great progress has been made in laboratories over the centuries, experimental clinical research has been stifled in academic settings.

How have dental clinicians, particularly prosthodontists, been trained to identify pertinent clinical research, appraise papers for validity and generalizability, and continuously incorporate necessary changes into clinical practice? In medicine, at least one university in Canada, the McMaster University, scrapped the century-old teaching style and adopted an approach based on evidence-based medicine.⁶ One essential characteristic is the notion that pathophysiological reasoning alone cannot guide clinical practice, and it is nonsense to imagine that undergraduate students can continue to absorb the increased load of theoretic curriculums. Furthermore, science progresses so fast that what is taught in medicine may be outdated by the time students graduate. Thus, a more proactive way to prepare students for life-long learning is to teach them how to identify and critically appraise the scientific literature that the practicing clinician will encounter.

The biggest misunderstanding of EBM is that it is only concerned with the effectiveness of interventions and randomized controlled trials. Of course, there are appropriate study designs for all if not most research questions in prosthodontics. We should never forget that our main actions as prosthodontists can best be described according to words of the French physician Ambroise Paré (1510–1590): *Cure occasionally, relieve often, console always.*

References

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