GUEST OPINION

NEED TO EMPHASIZE SCIENTIFIC BASIS FOR EVIDENCE BASED DENTISTRY

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Typical dentists of today, begin clinical practice after going through a pre-dental and dental curriculum. The admission to a dental college is partly based upon an acceptable performance in the science courses including biology, chemistry and physics. The dental curriculum usually begins with rigorous courses in anatomy, physiology, biochemistry, pathology, pharmacology and dental biomaterials, all requiring sound grounding of scientific principles. As the students progress through the clinical curriculum, the biomechanical, medical and surgical procedures are learnt and are used throughout their professional career.

Practicing dentists are expected to apply scientific principles to every aspect of their clinical work. At the same time, there is a necessity of being mindful of a wide, and a vast, range of factual information related to clinical procedures, diagnostic and therapeutic equipment as well as materials. Therefore, it is not uncommon to observe a certain lack of willingness among some dentists to give proper attention to the once-learned scientific principles. While such an attitude is understandable, given the circumstances, it is rather unfortunate that it might lead to decisions based on intuition and hearsay. This is not to say that every decision based on personal experience is not valid. Personal experience related to technique issues is, of course, necessary to perform various clinical tasks.

Consistent referral to the scientific principles during the decision making process has a particular significance in the current emphasis on evidence-based clinical dentistry. A strong need for meaningful evidence is decisively preferable to selection of treatment based on experience and empirical observations. While clinician's experience plays a crucial part in such a choice, it is no guarantee that a choice of treatment made for a given patient for a certain condition would be the right one and would meet with success for all other patients. On the other hand, a choice of treatment based on supportive, documented evidence is expected to possess greater probability of being successful. To be able to gather and comprehend the supportive evidence and to apply the knowledge gained to make the correct decision requires one to be well cognizant of the scientific principles. To be consciously aware of this fact is indeed an important aspect of dentists who, not unlike other professionals, are expected to be engaged in a lifelong learning process. Dental education based on scientific principles is undoubtedly the most desirable approach to produce competent practitioners who can deliver best possible care in ethical manner. The concepts of evidence-based dentistry have been extensively documented in dental literature .[1-7]

The need for dentists to be cognizant of the latest information on treatment modalities, equipment and materials cannot be overemphasized. The desirability of such an approach has been well recognized[8-9] and even mandated.[10o] Many dentists find it difficult to pursue the creed of life-long learning mainly because of the constraints of available free time. Also, for some of them, it might be difficult to access pertinent dental literature because of the remoteness of their location from the sources such as dental and medical colleges.

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Some of these individuals strive to get as much information as possible by attending various meetings and conferences arranged by dental organizations. Independent of the method by which the pertinent information is obtained, it is crucial for dentists to be able to distinguish between the disseminated information based on sound scientific evidence and the one presented as an anecdotal account. To be a sufficiently discerning listener, an individual needs to possess a broad background in understanding of basic sciences. In absence of such an approach one tends to rely on the information disseminated by popular speakers regardless of the fact that the speaker may have biased information for various reasons. It is, therefore, important for dentists to regard peer-reviewed journals as their main source of information. As reading individual articles is a time-consuming, participation in well organized journal clubs might be a viable answer to continued education. Obviously, the individuals spearheading such endeavors should be soundly familiar with the scientific method, critical thinking and skills of comprehending scientific articles .[11,12]

It is the responsibility of the educational institutions to inculcate the reliance on scientific basis and critical thinking. There is an old proverb, origins of which have been claimed by several ethnic groups. In essence, it states: Give a man some fish and he will have no worries about the dinner for the day but teach him how to fish and he will have no worries about the dinner for the rest of the year. Analogously, a dentist who takes case-specific advice from someone presenting anecdotal reports may or may not succeed in offering that treatment to some of his patients. On the other hand, the dentist who is well grounded in the scientific principles should be well poised to make decisions that can be applied broadly and with greater probability of success. It is becoming more and more important for dental educators to instill in the dental students the importance of relying on science rather than experience. In the context of oral healthcare delivery, science-based education rather than one relying on experience or faith is far superior. Continuing on this theme, it is necessary to generate culture of science early in the students' careers. And, in general, science literacy is indeed very important for the not only for the dental students but also for the school children who do not intend to pursue science related career and even adults who already have non-science related career.[13]

It must be acknowledged that dentists practicing in rural areas, where resources for information, equipment and materials are likely to be scarce, may not be able to always rely on scientific basis. The counterparts of these dentists in urban areas could set an example by adhering to the doctrine of "science first". As the improvement in general economy of many developing countries is rapidly taking place, the affordability and demand for increased dental care would follow. Science-based dentistry would become even more important if our self-regulated profession is to deliver ethical oral health to the masses.

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