

REVIEW ARTICLE

EVIDENCE-BASED DENTISTRY: ITS PROBLEMS AND PROSPECTS

Vatsul Sharma¹, Nidhi Gupta², Preety Gupta³, Vikram Arora³, Nishant Mehta⁴

¹Senior Lecturer, Department of Public Health Dentistry, Sri Sukhmani Dental College & Hospital Dera Bassi, Mohali district, Punjab-140507, ²Professor and Head, ³Senior Lecturer, Department of Public Health Dentistry, Swami Devi Dyal Hospital and Dental College Barwala, Panchkula district, Haryana-134118, India, ⁴Senior Resident, Oral Health Science Centre, Postgraduate Institute of Medical Education & Research, Sector-12, Chandigarh-160012, India

ABSTRACT:

Evidence Based Dentistry (EBD) has gained much importance in recent years. Along with, bridging the gap between dental practice and clinical research, it has also led to improvement in Health care service management. The evolution of Evidence Based Dentistry has opened new vistas and prospects for the dental professionals. Besides adding new scope, EBD also faces some potential barriers and problems. This review paper aims to discuss the concept of EBD, its problems and prospects. To improve the quality of dental care provided to the patient, EBD should be incorporated into routine dental practice and new skills need to be developed in order to minimise the problems associated with it.

Keywords: Evidence Based-Dentistry, health care, future prospects

Corresponding author: Dr. Vatsul Sharma, Senior Lecturer, Department of Public Health Dentistry, Sri Sukhmani Dental College & Hospital Dera Bassi, Mohali district, Punjab-140507,

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INTRODUCTION

As healthcare providers, it is important that physicians and dentists offer the best possible care for their patients. This requires not only a sound educational base but also a good source of current best evidence to support their treatment recommendations¹. In order to do this successfully, certain skills need to be acquired by the dental professionals to fulfil the basic intention of evidence-based dentistry, which is providing better information for the clinician, improved treatment for the patient, and consequently an increased standing of the profession². In many countries, there has been growing concern about the use of Evidence-Based Practice (EBP) in oral health care³. According to Azarpazhooh A et al., Evidence Based Practice is a process of lifelong, self directed learning in which providing health care creates the need for important information about diagnosis, prognosis, treatment, and other clinical and health care issues⁴.

The American Dental Association defined Evidence Based Dentistry as an approach to oral healthcare that requires the judicious integration of systematic assessment of clinically relevant scientific evidence relating to the patients oral and medical conditions and history, with the dentists' clinical expertise and the patients' treatment needs and preferences⁵. Evidence based dentistry is the application of high quality evidence to the care of individuals with dental disease. Much is known about the potential benefits of Evidence Based Dentistry. Despite these benefits, EBD also faces some difficulties. This paper aims to explain the concept of EBD, along with the common problems it faces and its future prospects.

HISTORY

The knowledge base has evolved in how knowledge has been created, synthesized, and disseminated. Four eras can be delineated in evolution of the knowledge base. They are: 'Age of the expert', 'Age of professionalization', 'Age of science' and 'Age of evidence'. Dental knowledge base first began to develop during 'Age of the expert'. Dentistry emerged in the middle ages as a guild of "barber surgeons" and "itinerant dentists." Knowledge creation was experimental and no systematized information was available⁶.

Around the middle of eighteenth century, dental knowledge base entered second era, the "Age of professionalization", during which Fauchard had published his text book, representing his observations and of other experts. This led to better access to knowledge but still it was simply a compilation of the experiences of others. This age also saw the establishment of dental schools and publication of dental journals in the 1840s. At the dawn of the twentieth century the dental knowledge ushered in to the third era "Age of Science". This involved a gradual shift of profession from proprietary education to university based institutions⁶.

Knowledge synthesis evolved slowly from expert's experience to available knowledge in scientific literature. This phase marked the period of most knowledge dissemination, with rapid growth of university based dental curricula, proliferations of journals and organized continuing dental education in journals. There is no doubt that dental knowledge base is now entering into a new era the "Age of Evidence." Knowledge creation in this era can be characterized by dominance of

randomized clinical trials. It is claimed that the origin of Evidence Based Practice dates back to mid-19th century⁷.

NEED FOR EVIDENCE-BASED DENTISTRY

Health care has witnessed great advances in basic, applied as well as pharmacological research since the Second World War. Health care decisions depend upon opinions of experts or with attention to evidence from research available from literature or the Internet. In order to make the best decisions in our day to day patient care, strong and valid information is needed. The conventional sources for this information are either inadequate or outdated (textbooks), frequently biased (experts), maybe ineffective (didactic) or impracticable merely due to their huge volume (medical journals)⁸.

In order to orient the practitioners with the vast amount of scientific information and to support clinical decisions, there is a pressing need for evidence in every branch of medicine. There is an overwhelming amount of evidence that comes from research and policy-making organizations, but there is no one organization that synthesizes and assesses all this evidence.

Advances in dentistry are usually first reported in dental journals, and in order to keep up with new research, healthcare professionals need to feel confident that they can read and evaluate dental papers. Keeping abreast of new developments through reading current literature can seem onerous and hard to combine with a heavy clinical workload. Fortunately, having an understanding of how to interpret research results, and some practice in reading the literature in a structured way, can turn the dental literature into a useful and comprehensible practice tool. Nowadays the practice of dentistry is becoming more challenging and complex because of the information explosion regarding dental materials and equipment, increasing need for continuous professional development and an increasingly litigious society. Hence there has been a paradigm shift towards evidence-based healthcare⁹.

Evidence-based dentistry has been gaining even more importance in recent years in order to reduce the gap between clinical research and actual dental practice. It aims at the systematic literature review which collects the best evidence and forms the basis for clinical practice guidelines. Clinical research, which is the basis for EBD, allows us to make decisions about causes of and treatments for disease, while allowing for the natural differences between people.

Evidence-based dentistry can help in bringing uniformity in patient care and in reducing the impact of the following four factors : the quality of science underlying clinical care, the quality in making clinical decisions, the variations in the level of clinical skill and the large and increasing volume of literature¹⁰.

EBD: THE PROBLEMS

The EBD movement is at a nascent stage. The methods to formulate clinical questions, finding the current best evidence, critically appraising as well as applying the evidence, and knowing how to report clinical researches

in a methodical and transparent manner according to current best standards are very much basic and essential learnable skills. There are many challenges in implementing evidence-based dentistry, producing high-quality systematic

reviews and developing useful evidence based guidelines. Barriers to using evidence-based methods in everyday practice include lack of appropriate skills for formulating clear questions, executing efficient electronic searches and evaluating the literature. Since, it is not a part of undergraduate or postgraduate courses, its applicability at this stage is not possible. It is a recent concept, so most of the dental professionals have had little or no exposure to EBD themselves, and thus are a bit sceptical about its possibilities. EBD is an interdisciplinary approach, the training requires the participation of dentists, statisticians, epidemiologists and social scientists. A major problem lies in the amount of evidence. There is a shortage of coherent and consistent scientific evidence. Currently thousands of dental articles are published annually in a lot of journals. Clearly not all of these articles are relevant to all areas of dental practice, nor can one hope to read a lot of them. Other significant problem is the quality of evidence. A number of publications that are widely read in dentistry are not subjected to peer review. There also occurs publication bias when there is the tendency both by researchers and by editors to publish positive reviews.

Negative trials can be equally valuable and concerns have been revised that increasing sponsorship of medical trials by commercial concerns could result in non-publication of negative or unhelpful findings. Unless good methods of dissemination are available, even where there is good evidence, it takes many years for a particular treatment to become the norm. The use of techniques or therapies based on the views of authority rather than evidence may lead to the wrong treatment being performed. There is limited evidence of positive patient outcomes following EB interventions and limited access to resources to provide timely access to evidence in clinical settings¹¹.

EBD: FUTURE PROSPECTS

Evidence-based dentistry approaches continue to increase in popularity in India. It is vital to make the research evidence available especially at the point of care, or the value of the new evidence can never be realized. Research workers are responsible for producing evidence. The evidence obtained can be used to improve clinical practice and to improve health service management. Evidence-Based Clinical Practice is an approach to decision making where a clinician uses the best evidence available, in consultation with the patient, to decide upon which option best suits the patient. One of the strategies used to implement this is the Physician-Patient Partnership Program (PPPP), which is based on the concept of patient-centered care and the idea of the physician and the patient being partners in problem solving.

Decision makers and managers who are responsible for health care have to make evidence-based policy decisions in order to allocate funds, purchase or manage resources. Instead of relying solely on accumulated personal experiences to determine which clinical techniques are most effective, individual clinicians using EBD will be able to draw upon the objective experience of many researchers working with accepted scientific standards of evidence and relate this evidence to an assessment of the patient's circumstances and the practitioner's clinical experience. Improved efficacy should also promote greater efficiency by allowing doctors and hospitals to filter scarce resources away from ineffective clinical practices and toward practices whose effectiveness has been conclusively shown. EBD should also promote greater uniformity by limiting idiosyncrasies in particular clinical procedures or in the rate at which procedures are performed. In addition, EBD promises to create better-informed patients and clinicians by offering collectively agreed-upon and publicly available information about treatment options¹³. While there will never be enough research to provide answers to every possible clinical question, evidence-based practice emphasises using the best research evidence available and acknowledges the need to draw on expert opinion where research does not exist. Further, clinical experience, which is one of the key components of evidence-based practice, must be relied on even more where there is a lack of evidence or uncertainty. Further, it must be borne in mind that clinical practice guidelines have a "shelf life" due to constant change in medical knowledge and practice environment. They should therefore be reviewed at regular intervals¹⁴.

CONCLUSION

For implementation of EBD, support for dental practitioners, educators and students is needed to develop skills, and to evaluate available evidence, including information provided to assist in the application of this evidence to individual patients. There is a need to develop new skills in identifying answerable questions, searching for and critical appraisal of the evidence. Evidence based dentistry is relatively a new paradigm in dentistry and thus may not be a well-known concept to every dental graduate. Potential barriers exist in practice of evidence based dentistry. There should be an adequate program developed in the form research workshops on evidence based dentistry to overcome the barriers perceived by the postgraduates in practice of evidence based dentistry, thereby integrating the concept of evidence based dentistry into routine clinical practice, which improves the quality of dental care provided to the patient.

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