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Evidence-based healthcare: avoiding ivory tower research?

Evidence-based dentistry is much more than randomised controlled trials and must always be regarded as an adjunct to, and not as substitute for, sound clinical judgement and patient preferences.

Several individuals and organisations have gradually recognised the value of applying evidence-based health care in dentistry (EBD). The two centres focussing on EBD, The Center for Evidence Based Dentistry¹ and The Cochrane Collaboration Oral Health Group² are both located in UK. Thus far, much of the activity within EBD is centered in UK.³ A survey was therefore initiated to appraise possible EBD activities in main-Europe.

European Cochrane Centres were contacted for possible interest in EBD. In addition, a Medline search under the MeSH headings 'Evidence-based Medicine' and 'Dentistry' gave an overview of the present EBD activities. The members of the Cochrane Oral health group with a European address outside the UK were also contacted for details.

Very few activities in EBD in Europe could be identified. Two active EBD-groups were identified in Aarhus, Denmark and in Cork, Ireland. The Aarhus group is at present implementing a systematic review for the Cochrane collaboration on 'The effectiveness of potassium-containing toothpaste in treatment of dentine hypersensitivity'. The Cork group is setting up a pilot study to look at endodontics. Answers from individuals indicated an interest in specific fields of dentistry such as surgery (G. Camilleri, Malta), cost-efficiency (P. Sendi, Switzerland) and radiography (P. Mileman, Netherland).

A second EBD initiative in Europe was a meeting of the Scandinavian Society for Prosthetic Dentistry in August 1998. The main topic was EBHC applied to prosthodontics, with speakers invited to present existing evidence for choice among therapeutic modes, and alternative dental materials in prosthodontics.

On the whole, it appears that the dental

profession, clinicians as well as scientists so far hesitate to start to practice EBD. There may be several explanations for this. The most obvious explanation is the lack of information about EBD. Although there have been editorials and subsequent letters on the subject in some major journals, the topic has not been followed by more in-depth papers.

It is also possible that many still consider that the quality of research presented in dental journals is secured through existing systems for granting. Unfortunately, this is not necessarily so. It can even be argued that EBD is a misnomer because in our field 'everybody is aware of the requirements for presenting high quality research'. If this statement holds true, how do we explain the conflicting clinical conclusions drawn from the available 'scientifically based knowledge' presented in our field? However, there may also be more fundamental problems with implementing EBD in the dental profession.

The first step when practicing an evidence based approach is to be able to frame answerable questions from clinical problems.⁵ This step can be regarded as equivalent to the first step in problem based learning (PBL). However, on a world basis very few dentists have been trained to use PBL in their daily work-situations. Only recently, PBL has been implemented in the curriculum in some dental schools. The great majority of dental schools have based their curriculae on teaching and thinking identical to the Flexner reports at the beginning of this century. It may prove extremely difficult to persuade dentists to radically change their strategies to solve patient problems in clinical situations.

Due to the sheer volume of scientific information available, a computer is needed for accessing and sifting data.

Two problems are apparent. First, a functional computer-network infrastructure is required. This is at present available only in few countries or regions. Secondly, although the level of computer skill is increasing in the population, many dental professionals are still unfamiliar with advanced use of the computer. Although the future is here it just is not within everybody's reach yet.

EBD can so far offer only limited help in many clinical areas where there isn't evidence about a treatment. A striking feature of dentistry is that there is rather limited solid evidence for the majority of therapeutic interventions. More serious is that much of what is being presented to dentists as 'progress' can hardly be labeled scientific. For example, although it is agreed that the proper study design to evaluate therapeutic interventions is the randomized controlled trial (RCT), many journals still mostly publish 'follow-up' or 'what-we-have-done' retrospective studies.

The dental community should strive to document optimal evidence based practices in order to improve patient treatments. There are large gaps in our knowledge. The experts on clinical dentistry are, and have always been, the clinical practitioners. Basic problem formulations and identification of grey areas should come from the front line health workers and not from bureaucrats, physicists or statisticians. This implies further that the ideal environment for producing evidence-based research is the general dental practice,

not in the dental schools, not in the laboratories and not in institutions.

It may be argued that randomised controlled trials are usually carried out in controlled patient groups. Thus, the results may not be valid for the extremely heterogeneous group of patients encountered in a general practice. However, EBD is much more than RCT, and must always be regarded as an adjunct to, and not as a substitute for sound clinical judgement and patient preferences. Evidence based tools are still crude in helping dentists translate the results of studies into advice for individual patients. However, as the evidence based approach gains momentum, it is hoped that pertinent evidence can be generated through research. Perhaps some day there may be enough group data to be relevant for individual health care problems.

- 1 Centre for Evidence-Based Dentistry. University of Oxford. Available from URL: <http://www.bhaoral.demon.co.uk/>
- 2 The Cochrane Collaboration Oral Health Group. University of Manchester. Available from URL: <http://hiru.mcmaster.ca/cochrane/>
- 3 SCHARR. School of Health and Related Research, University of Sheffield. Available from URL: <http://www.shef.ac.uk/uni/academic/R-Z/schar/jr/hetting.html>
- 4 SSPD, Scandinavian Society for Prosthetic Dentistry. Available from URL: <http://www.odont.uio.no/prosthodont/sspd.htm>
- 5 Sackett D, Richardson WS, Rosenberg W, Haynes B. *Evidence Based Medicine*. London: Churchill Livingstone; 1997.

Citation of articles in Evidence-Based Dentistry

Material from a structured abstract

Raising lingual flaps increases the risk of nerve damage [Abstract]. *Evidence-Based Dentistry* 1998 November; 1: 14. Abstract of: Robinson P P, Smith K G. Lingual nerve damage during third molar removal: comparison of two surgical methods. *Br Dent J* 1996; 180: 456-461.

Material from a commentary

Creugars N. Commentary on: 'Two-thirds of fixed partial prostheses

(bridges) last 15 years'. *Evidence-Based Dentistry* 1998 November; 1: 19. Comment on: Scurria M S, Bader J D, Shugars D A. Meta-analysis of fixed partial denture survival: prosthesis and abutments. *J Prosthet Dent* 1998; 79: 459-464.

Material published in the 'Editorial' and 'Toolbox' sections

Richards D. Which journals should you read to keep up to date? *Evidence-Based Dentistry* 1998 November; 1: 22-25.