FIRST NATIONAL WORKSHOP ON EVIDENCE-BASED DENTISTRY

10-11, March 2001

CENTRE FOR EVIDENCE-BASED DENTISTRY AND INFORMATICS
COLLEGE OF DENTAL SCIENCES
KARNATAKA, DAVANGERE 577 004, INDIA
URL: http://www/cods.net/cebd/

Centre for
Evidence-Based Dentistry & Informatics
College of Dental Sciences, Davangere
extends an invitation to the

Inaugural Ceremony

OF THE FIRST
NATIONAL WORKSHOP ON
EVIDENCE-BASED DENTISTRY

Chief Guest
Dr. S. Chandrashekar Shetty
Hon'ble Vice-Chancellor, RGUHS

Guest of Honour
Padmashree Dr. R. K. Bali
President, DCI

esided over by
ıri S. Shivashankarappa
ɔn. Secretary, BEA

Guest of Honour
Shri I. P. Vishwaradhya
Chairman, CODS

Special Invitees

: Derek Richards
rector, CEBD, Oxford
(

Dr. Asbjorn Jokstad
Member, FDI Commission
Norway

Dr. T. Samraj
Prof & Head, Dept. of Dental Surgery
Christian Medical College, Vellore

Saturday, 10th March 2001, 11.00 am
Seminar Hall, College of Dental Sciences

. V. V. Subba Reddy
airman, CEBD-*i*

Dr. Anmol S. Kalha
Chief Convener

PROGRAMME

DAY ONE: 10 March, 2001

0800 hrs	Breakfast and Registration
0900 hrs	**Orientation to EBD** The CODS-EBD Staff
1000 hrs	**EBD: Glossary of terms** Dr. Sukhdeep Singh
1030 hrs	Tea
1100 hrs	Inaugural Function
1230 hrs	**Why EBD?** Dr. A. S. Kalha
1300 hrs	Lunch
1400 hrs	**Introduction to EBD** Dr. Derek Richards
1430 hrs	**Asking the right question** Small group exercise
1515 hrs	**Levels and sources of evidence** Small group exercise
1615 hrs	Tea
1630 hrs	**Demystifying Computers & Internet** Dr R. V. Subramanyam
1645 hrs	**Searching for evidence** Small group exercise
1800 hrs	TEA
1815 hrs	Hands-on session continues
2000 hrs	BANQUET

DAY TWO: 11 March, 2001

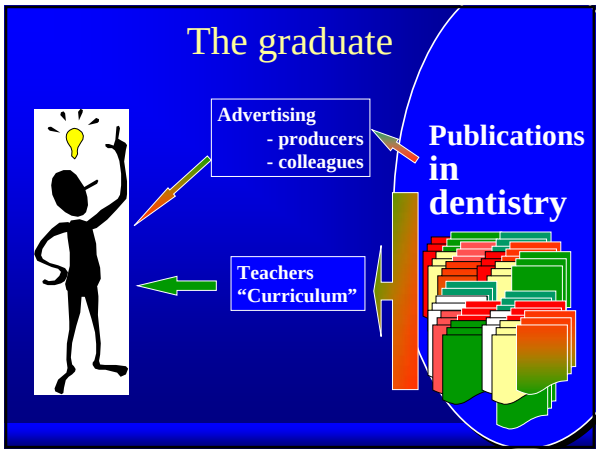
0800 hrs	BREAKFAST
0900 hrs	**Are you scared of numbers?** Dr. Shailesh M. Lele
0930 hrs	**Introduction to Critical Appraisal**
1035 hrs	**Appraising Randomised Clinical Trials (RCTs)** Hands-on course
1130 hrs	TEA
1145 hrs	**Feedback and Plenary on RCTs**
1300 hrs	LUNCH
1400 hrs	**Introduction to Systematic Reviews**
1500 hrs	Small group exercise
1545 hrs	**Feedback and Plenary on Systematic Reviews**
1630 hrs	Valedictory function

What about the evidence from non-randomised trials?

Asbjørn Jokstad
Institute of Clinical Dentistry
University of Oslo, Norway

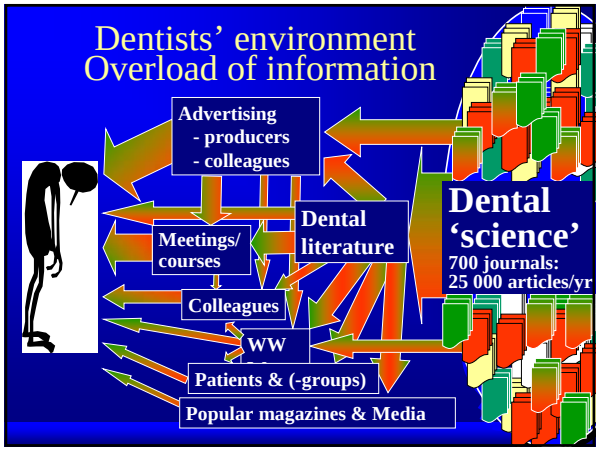
Http://www.odont.uio.no/prosthodont/india

Most publications in the dental literature is not high quality science!



The graduate

- Has been taught and can perform many basic clinical procedures - but not necessarily the most modern
- No hands-on experience with many procedures that are common in the modern dental clinic
  - from where and how can further training be obtained?
- Theoretic knowledge is at zenith, from now on there is less time - a question of priorities
- Already from day 1 the science base in dentistry advances further - how to stay updated?



We have to consider not only the amount of information we receive, but also the quality of this information

Dentists environment

WWW-medicine =/= clinical competence!

- General searching often very non-specific
- Takes much time
- Quality of information varies greatly
- Can't remember how to do effective search
- Medical metasite searches often superficial
- Unable to retrieve original article(s)
- How should the information be appraised and interpreted into clinical significance?

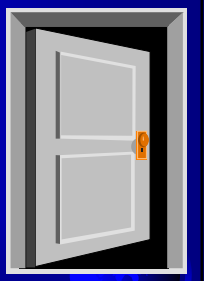
The situation for many dentists today

1. We need new information every day, but most of our needs are never met

2. consequently, our clinical knowledge and performance in the clinic deteriorate

3. and traditional instructional continuing education courses doesn't improve our performance.

Maybe this new thing EBM can be of any help?



Evidence Based Dentistry?!

An increasingly fashionable tendency of a group of young, confident, and highly numerate medical academics to defame the performance of experienced clinicians by using a combination of epidemiological jargon and statistical manipulation.

Evidence Based Dentistry?!

Arguments, usually presented with near evangelistic zeal, that no health related action should ever be taken by a doctor, a nurse, a purchaser of health services, or a politician unless and until the results of several large and expensive research trials have appeared in print and approved by a committee of experts

Evidence Based Dentistry?!

Replaces original findings with subjectively selected, arbitrarily summarised, laundered and biased conclusions of indeterminate validity or completeness.

It has been carried out by people of unknown ability, experience, and skills using methods whose opacity prevents assessment of the original data.

Evidence Based Dentistry?

A strategy for how to cope with changes

- not about knowing all the answers.

... it is not so much what you have read in the past, but about how you go about identifying and meeting your ongoing learning needs and applying your new knowledge appropriately and consistently in new clinical settings.

Two reasons for practicing Evidence Based Dentistry

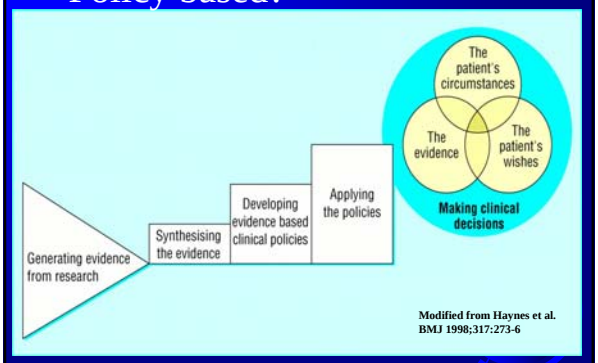
- A strategy for solving clinical problems on a daily basis.
  - a practical aspect
- A strategy for being reasonably certain that my advises and treatment are the best available to my patients.
  - an ethical aspect

How can we integrate evidence-based dentistry in our daily practice?

How can we apply EBD in our daily practice?

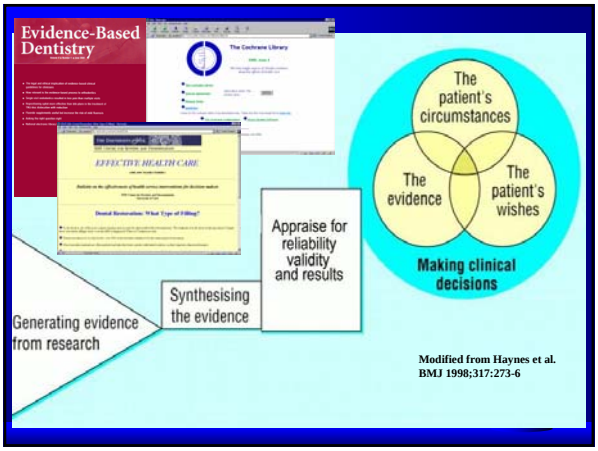
1. By accepting and applying practice protocols, policies and guidelines based on evidence-based principles

Policy based?



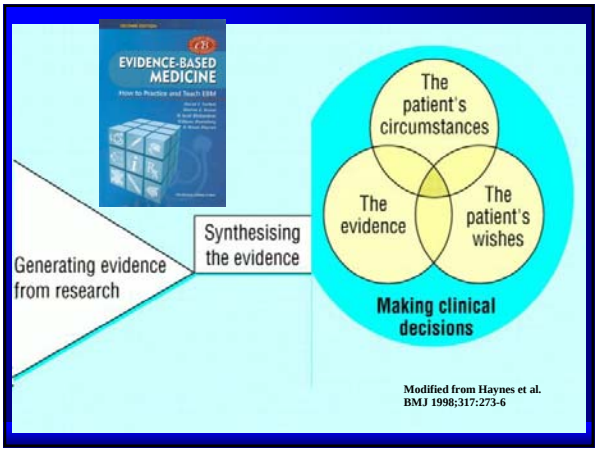
How can we apply EBD in our daily practice?

1. By accepting and applying practice protocols, policies and guidelines based on evidence-based principles
2. By seeking and applying evidence-based oral medicine summaries generated by others
   - Journals that critically appraise primary studies
   - Systematic reviews: e.g. Cochrane Collaboration / NHS R&D / SIGN /

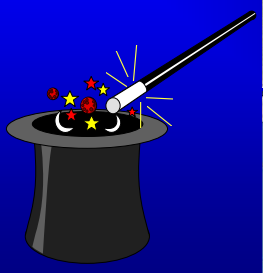


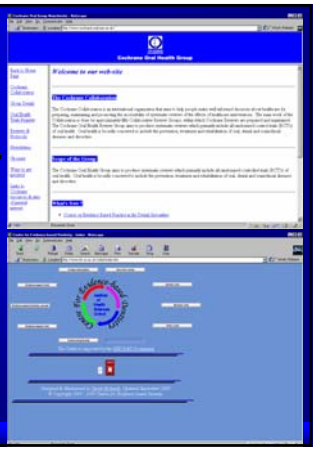
How can we apply EBD in our daily practice?

3. By learning how to practice evidence-based oral medicine ourselves
   - Seminars
   - Books
   - Internett
     - On line courses
     - On line articles
     - Link banks
     - Journals



Tools and rules?





What is Evidence Based Dentistry?

Scientific studies can be graded according to the theoretical possibility of an incorrect conclusion.

This is reflected by the design of the study.

…we will never know exact answers in science….

Clinical trial terminology - tower of Bable?

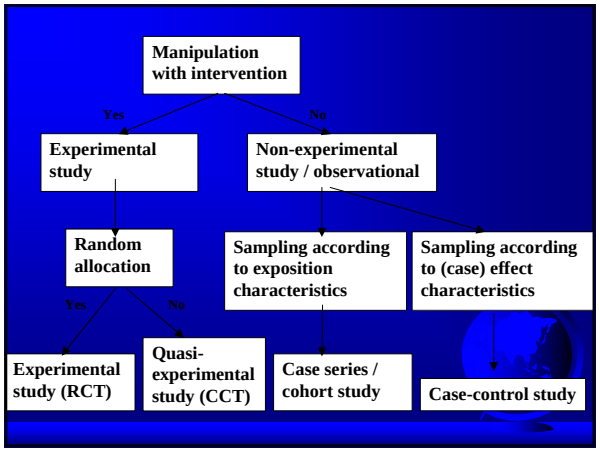
analytical study	ecological study	prospective cohort study
case control study (89)	etiological study	prospective follow-up study,
case serie	experimental study	observational or experimental
case study, case report	explorative study	prospective study (67)
cause-effect study	feasibility study (79)	quasi-experimental study
clinical trial (79)	follow-up study (67)	randomized clinical trial, RTC
cohort study (89)	historical cohort study	randomized controlled trial, RCT (89)
cohort study with historical	incidence study	retrospective cohort study
controls	intervention study	retrospective follow-up study
controlled clinical trial (95)	longitudinal study (79)	retrospective study (67)
cross-sectional study (89)	N=1 trial	surveillance study
descriptive study	non-randomized trial with	survey, descriptive survey
diagnostic meta-analysis	contemporaneous controls	therapeutic meta-analysis
diagnostic study	non-randomized trial with	trohoc study
double blind randomized therapeutical trial with cross-over design	historical controls	
	observational study	

Descriptions of clinical studies can be reduced to three questions

1. Study objective?
   - Descriptive, no comparison conducted
   - Comparison as process research
   - Comparison as cause-effect research
2. Procedure, intervention?
   - Experimental allocation of procedure
   - Survey
3. Data collection?
   - Retrospective
   - Cross-sectional
   - Prospective / Cohort / Longitudinal

Clinical study designs (MESH terms):

- (Case study/series)
- Case-Control Study
- Cohort Study
- Cross-Sectional Survey
- Randomised Controlled Trial



Etiology - causation

- clearly identified comparison group for those at risk for, or having, the outcome of interest
- masking of observers of outcomes to exposures
- observers of exposures masked to outcomes for case-control studies and subjects masked to exposure for all other study designs;
- interpretation of the diagnostic standard without knowledge of the test result;
- a statistical analysis consistent with the study design.

Prognosis

- An inception cohort of persons, all initially free of the outcome of interest
- Follow-up of at least 80 per cent of patients until the occurrence of either a major study endpoint or the end of the study
- A statistical analysis consistent with the study design.

Clinical findings/ Diagnostic tests/ Differential diagnosis

- Clearly identified comparison groups, at least one of which is free of the target disorder
- Either an objective diagnostic standard or a contemporary clinical diagnostic standard with reproducible criteria for any objectively interpreted component
- Interpretation of the test without knowledge of the diagnostic standard result
- Interpretation of the diagnostic standard without knowledge of the test result
- A statistical analysis consistent with study design

Therapy /Prevention Patient education

- Random allocation of the participants to the different interventions
- Outcome measures of known or probably clinical importance for at least 80 per cent of participants who entered the investigation
- A statistical analysis consistent with the study design.

Strength of evidence of treatment effects

US Agency of Health Care Policy & Research, 1992

Ia. Meta-analysis of randomized controlled trials

Ib. At least one randomized controlled trial

IIa. At least one well-designed controlled study without randomization

IIb. At least one other quasi-experimental study

III. Well-designed non-experimental descriptive studies, such as comparative studies, correlation studies and case-control studies.

IV. Expert committee reports or opinions and/or clinical experience of respected authorities

EBM Working Group, McMaster University 1993

Systematic reviews and meta-analyses

RCT with definite results
RCT with non-definite results

Cohort studies
Case-control studies
Cross sectional studies

Case reports

Strength of evidence of treatment effects

Richards & Lawrence, Br Dent J 1995;175:270

•at least one published systematic review of multiple well designed randomised controlled trials
•at least one published properly designed randomised controlled trial of appropriate size and in an appropriate clinical setting
•published well-designed trials without randomisation, single group pre-post, cohort, time series or matched case controlled studies
•well-designed experimental studies from more than one centre or research group
•opinions of respected authorities based on clinical evidence, descriptive studies or reports of expert consensus committees

Sackett et al., Editorial. EBM 1995;1:4

(I-1) 2 or more well designed randomised controlled trials (RCT), meta-analyses, or systematic reviews.
(I-2) a RCT.

(II-1) a cohort study.
(II-2) a case controlled study.
(II-3) a dramatic uncontrolled experiment.

(III) respected authorities, expert committees (consensus)etc.

(IV) ...someone once told me

Strength of evidence of treatment effects

CEBM, 2001. (http://cebm.jr2.ox.ac.uk/docs/levels.html)

1a. Systematic review (with homogeneity of RCTs)

1b. Individual RCT (with narrow confidence interval)

2a. Systematic review (with homogeneity) of cohort studies

2b. Individual cohort study (and low quality RCT; e.g.,<80% follow-up)

3a. Systematic review (with homogeneity) of case-control studies

3b. Individual case-control study

4. Case-series (and poor quality cohort and case-control studies)

5. Expert opinion without explicit critical appraisal, or based on physiology, bench research or “first principles”

Most publications in the dental literature are not RCTs

Cross-Sectional Survey

Advantages
1. cheap and simple
2. ethically safe

Disadvantages
1. establishes association at most, not causality
2. recall bias susceptibility
3. confounders may be unequally distributed
4. group sizes may be unequal

Case-Control Studies

Advantages:
1. quick and cheap
2. only feasible method for very rare disorders or those with long lag between exposure and outcome
3. fewer subjects needed than cross-sectional studies

Disadvantages:
1. reliance on recall or records to determine exposure status
2. confounders
3. selection of control groups is difficult
4. potential bias: recall, selection

Characteristics of a poor case-control study:

Failed to:

- clearly define comparison groups
- and/or failed to measure exposures and outcomes in the same (preferably blinded), objective way in both cases and controls
- and/or failed to identify or appropriately control known confounders.

Cohort Study

Advantages:

1. ethically safe
2. subjects can be matched
3. can establish timing and directionality of events
4. eligibility criteria and outcome assessments can be standardised
5. administratively easier and cheaper than RCT

Disadvantages:

1. controls may be difficult to identify
2. exposure may be linked to a hidden confounder
3. blinding is difficult
4. randomisation not present
5. for rare disease, large sample sizes or long follow-up necessary

Characteristics of a poor cohort study:

Failed to:

- clearly define comparison groups and/or failed to measure exposures and outcomes in the same (preferably blinded), objective way in both exposed and non-exposed individuals
- and/or failed to identify or appropriately control known confounders
- and/or failed to carry out a sufficiently long and complete follow-up of patients.

Randomised Controlled Trial

Advantages

1. unbiased distribution of confounders
2. blinding more likely
3. randomisation facilitates statistical analysis

Disadvantages

1. expensive: time and money
2. volunteer bias
3. ethically problematic at times