

Perception of dental professionals towards evidence based dentistry

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Abstract

Evidence Based Dentistry (EBD) is a patient-centred approach to treatment decisions, which provides personalized dental care based on the most current scientific knowledge. Many dental professionals in India are never taught critical evaluation of research material in dental schools. The purpose of this study was to determine the perception of dental professionals towards EBD in dental institutes. This cross sectional questionnaire based study was conducted comprising of 11 questions rated on a standardised five point likert scale, designed to assess awareness, knowledge and attitude of Dental Professionals towards EBD in 3 teaching dental colleges in Nagpur, India. Of the 200 forms distributed, fully completed forms from 163 (81.5 %) candidates were obtained. Positive attitudes toward EBD were significantly lower among post graduate students than in the Staff ($p < 0.001$). The staff believed that patient care can be improved by EBD ($p=0.041$) whereas the post graduate trainees thought that EBD is of limited value in general practice ($p=0.00$) and places an extra demand over loaded practitioners ($p=0.006$). Other variables were not found to be statistically significant in this study.

There were significant differences in their attitudes and implementation of EBD. While both the groups were well aware of EBD, they unanimously perceived personal barriers and lack of training towards EBD. Therefore, strategies for enhancing EBD training and implementation should be delivered at the basic level for the growth and development of dental profession.

Key Words: Scientific evidence, Knowledge, Attitude, Awareness, Barriers

Introduction

It is believed that the more experienced a dentist is the better would be the quality of health care delivery. Inversely, a relationship between the number of years of practice and the quality of care provided has been established through recent studies. Knowledge and its judicious application are two separate yet interdependent concepts in dentistry that seek consideration in different specialties and clinical practice.

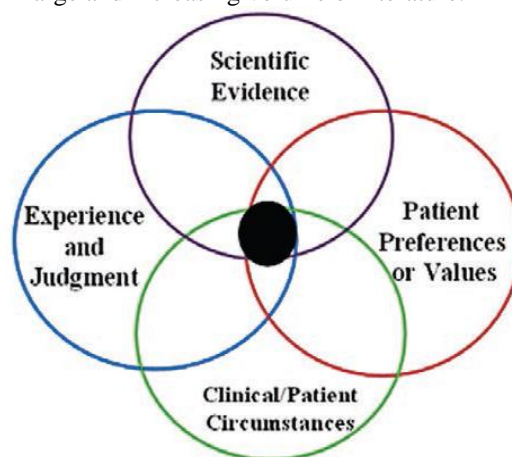
The American Dental Association (ADA) defines Evidence-based Dentistry (EBD) as “an approach to oral healthcare that requires the judicious integration of systematic assessments of clinically relevant scientific evidence, relating to the patient’s oral and medical condition and history, with the dentist’s clinical expertise and the patient’s treatment needs and preferences”. Changing socio-economic patterns, knowledgeable health care consumers, rapid technical advances and the information ‘explosion’ all place greater demands on clinical decision making.¹

Mosby’s Medical Dictionary has stated that evidence-based dentistry is “a systematic practice of dentistry in which the dentist finds, assesses, and implements methods of diagnosis and treatment on the basis of the best available current research, their clinical expertise, and the needs and preferences of the patient...”

It is expected of the dental practitioners that they are at par with the current needs and demands of the profession with the increase in the amount of accessible dental research.

Evidence-based practice (EBP) provides interventions that not only are scientific, safe, efficient but also cost effective. Evidence based dentistry serves to reduce the variation in opinion between dentists in the diagnosis, prognosis, treatment outcomes and cost of care for patient with similar diseases, it depends on four different factors:

1. Quality of science underlying clinical evidence
2. Quality in making clinical decisions
3. Variations in the level of clinical skill
4. Large and increasing volume of literature.²



Because we rely on well-designed research studies to demonstrate the efficacy and effectiveness of diagnostic tests, treatment strategies, new materials, and products, knowing how to find the scientific evidence is an essential component for clinical practice. Even though dental professionals are expected to sustain a high level of technical skills, critical evaluation of

research material is never taught in the dental schools of India. There has been increasing concern about the use of EBD to increase the effectiveness of dental care, which seems to face many obstacles.

EBD does not challenge the capabilities of practitioners; instead it aims at the betterment of the patient. Even though the term evidence based dentistry is widely used, it is not widely understood among post-graduates due to lack of in depth training to distinguish good science from the poor science. However, dental graduation training program in India is mainly targeted towards preventive and curative dental procedures; there is a lack of emphasis on the application of evidence based dentistry in clinical practice. Most of the post-graduate dental students' clinical questions and problems are solved by a combination of instructor's intuition, training and clinical experience, which may or may not be based on scientific evidence. This type of training which relies heavily on clinical experience and information learned in dental school, seminars or from colleagues can lead to inappropriate treatment outcomes.³

Evidence based dentistry may ultimately protect dental practitioners from litigation as practitioners who take an evidence-based approach to care will be able to provide evidence trails for their clinical decision making.

The purpose of this study was to determine the understanding, awareness and practice of EBD amongst dentists working at dental colleges in Nagpur, India.

Methodology

This cross sectional self-administered questionnaire based study was carried out on an English language comprising of 11 questions, designed to be rated on a standardised five point likert scale for assessing awareness, knowledge, practice and barriers to implementing EBD in three teaching dental hospitals in Nagpur, India. After obtaining approval from the Institutional ethics Committee and due permission from the three dental colleges, only post graduate students and teaching staff holding either a BDS or MDS degree, who agreed to participate in this survey were selected. After obtaining a written consent from all the participants, questionnaires were distributed. Performa's were filled up through personal visits. The

questionnaire was accompanied by an introductory letter stating the purpose of the study and promising confidentiality. Return of the completed questionnaire was considered consent to participate in the study. All questionnaires were anonymous. The period of the survey was from October 2015 to November 2015.

The content validity was examined experts with clinical experience. More than 200 participants agreed for the survey but only 163 participants responded back with accurately filled forms. The first part of the questionnaire included three questions to assess the awareness of EBD among the subjects. While the second part of the questionnaire included four questions aimed at evaluating the usage of EBD. The last part of the questionnaire with four questions evaluated the barriers towards EBD.

Statistical Analyses of the data were performed using statistical package for the social sciences (SPSS version 16). The descriptive statistics are presented as percentages and means. A mean EBD knowledge score for the group was obtained. Knowledge scores were found to be normally distributed. In relation to the mean group EBD knowledge score, using t-test and a two-tailed P-value <0.05 was considered statistically significant.

Results

Demographic data of this study comprised of 163 subjects that comprised of 114 post graduate students and 49 staff members. There were significant differences in their attitudes and implementation of EBD. While both the groups were well aware of EBD (student 87%; staff 90%), positive attitudes toward EBD were significantly lower among post graduate students than in the staff ($p < 0.05$). The staff 90% believed that patient care can be improved by EBD ($p=0.041$) whereas the post graduate trainees thought that EBD is of limited value in general practice ($p=0.00$) and places an extra demand over loaded practitioners ($p=0.006$) while 57% staff disagreed that it places an extra demand. They unanimously perceived personal barriers and lack of training towards EBD (student 83%; staff 65%). Other variables were not found to be statistically significant in this study.

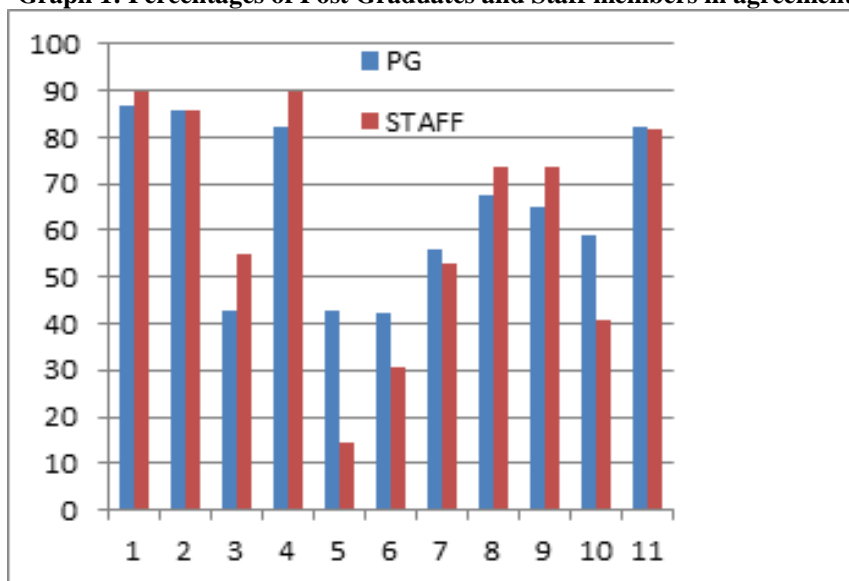
Table 1: Group statistics of responses of students and staff

| | Group | N | Mean | Std. Deviation | Std. Error Mean | T value | P value |
|----|---------|-----|------|----------------|-----------------|---------|---------|
| Q1 | Student | 114 | 4.04 | 0.763 | 0.072 | -0.979 | 0.329 |
| | Staff | 49 | 4.16 | 0.773 | 0.110 | | |
| Q2 | Student | 114 | 4.03 | 0.710 | 0.066 | -0.621 | 0.529 |
| | Staff | 49 | 4.10 | 0.684 | 0.098 | | |
| Q3 | Student | 114 | 3.25 | 1.009 | 0.095 | -2.596 | 0.010* |
| | Staff | 49 | 3.67 | 0.851 | 0.122 | | |
| Q4 | Student | 114 | 3.99 | 0.857 | 0.080 | -2.058 | 0.041* |
| | Staff | 49 | 4.29 | 0.791 | 0.113 | | |

| | | | | | | | |
|-----|---------|-----|------|-------|-------|--------|--------|
| Q5 | Student | 114 | 3.09 | 0.992 | 0.093 | 4.081 | 0.000* |
| | Staff | 49 | 2.41 | 0.934 | 0.133 | | |
| Q6 | Student | 114 | 3.23 | 0.863 | 0.081 | 2.796 | 0.006* |
| | Staff | 49 | 2.78 | 1.123 | 0.160 | | |
| Q7 | Student | 114 | 3.46 | 1.049 | 0.098 | 1.213 | 0.227 |
| | Staff | 49 | 3.24 | 1.090 | 0.156 | | |
| Q8 | Student | 114 | 3.65 | 0.862 | 0.081 | 1.213 | 0.227 |
| | Staff | 49 | 3.76 | 0.855 | 0.122 | | |
| Q9 | Student | 114 | 3.65 | 1.047 | 0.098 | 0.722 | 0.472 |
| | Staff | 49 | 3.84 | 0.921 | 0.132 | | |
| Q10 | Student | 114 | 3.54 | 0.742 | 0.070 | -1.086 | 0.279 |
| | Staff | 49 | 3.33 | 0.875 | 0.125 | | |
| Q11 | Student | 114 | 3.95 | 0.762 | 0.071 | 0.068 | 0.946 |
| | Staff | 49 | 3.94 | 0.689 | 0.098 | | |

*Statistically significant

Graph 1: Percentages of Post Graduates and Staff members in agreement



1. Process of making decision based only on scientifically proven evidence.
2. Useful in research findings in day-to-day management of patients.
3. Positive attitude of clinical practitioners towards EBD.
4. Patient care can be improved by EBP/EBD.
5. Limited value in general practice.
6. Places extra demands overloaded practitioners.
7. The best way to find evidence is by reading textbooks or asking experienced colleagues.
8. Various bibliographic database from google search can contribute to EBD/EBP.
9. Evidence from all published articles in scientific journals can be used in EBD.
10. Barriers to follow EBD/EBP.
11. Lack of training for EBD/EBP.

Discussion

This study was aimed to determine the understanding, awareness and practice of Evidence Based Dentistry (EBD) a total of 163 (81.5%) candidates were obtained.

According to Reza Pourabbas, Evidence-based periodontology attempts to implement the hypothesis-driven scientific processes to critically evaluate the research reports from design, methods, and data analysis points of view in order to produce the consensus of the best available evidence. The consensus declarations arise from the systematic review of the literature, and are supported by statistical analysis (e.g., acceptable sampling analysis, meta-analysis, etc.). However, the traditional approach is based on the individual efforts of research or observations without any judgment based on a critical appraisal—and this is the weakest level of evidence.⁴

In the present study, 87% of the respondents agreed that EBD is a process of decision making based on scientifically proven facts. In accordance with the study by Zamros Y.M. et al (2008), this finding is important as it reflects an essential quality of modern day clinician in which the changing socio-demographic patterns of the population and knowledgeable consumers have resulted in high demands for best practice and clinical decision making. In the current study 4% respondents did not agree that the scientifically proven evidence can be relied upon for decision making. This was higher than the study by Zamros Y.M. et al (2008) where only 2.2% were unaware of evidence based dental practice.⁵

Positive attitudes toward EBD were significantly lower among post graduate students than the Staff ($p < 0.001$). This is likely due to a long history of exposure of the staff and efforts to influence the use of EBP. The staff had more sufficient knowledge and clinical skills while the post graduates experienced unfavourable beliefs and attitudes towards EBD due to unfamiliarity with EBD. This may be because EBP is a part of the initial educational training for all staff members who have accomplished their masters. Other studies similarly indicated that EBP users have more favourable attitudes toward, knowledge of, and skills in EBP than non-users.^{6,7}

Positive perceptions and high self-efficacy appear to be primary influences on implementation. The staff believed that patient care can be improved by EBD ($p=0.041$) whereas the post graduate trainees thought that EBD is of limited value in general practice ($p=0.00$) and places an extra demand over loaded practitioners ($p=0.006$). A faculty position, educational training, and academic degree are important factors affecting implementation of EBP. Our previous study identified being a faculty member as a significant position from which to search for evidence-based information. Furthermore, our data showed that healthcare professionals with a high academic degree or

with educational training more often implemented EBP than those without either of these with 57% staff disagreeing that EBD is of limited use in day to day practise.⁸

Both the student 64% and staff 65% unanimously perceived personal barriers and lack of training towards EBD. This was in accordance with the study by Rets as A et al⁹ and Shuval K et al¹⁰ where they stated that insufficient knowledge and skills are significant barriers to EBP and negative predictors of EBD implementation. A few professionals think they know about evidence-based dentistry, and claim that they have been doing it all the time. They see nothing new in this concept, and thus, believe they do not need to change!

While a few others state frankly they have no idea about evidence-based practice, and are thus hesitant to touch it. They would rather keep their traditional approach, or at best, take a few steps in pondering the approach but turning back into the model of practice with which they are more familiar and comfortable.⁴

In our study 56% students believed that the best and the quickest way to find evidence was by reading textbooks and by asking colleagues. It was observed that the clinical judgment of the subjects was based on their practical experience or on their tutor/ supervisor knowledge. Text books have been considered as the most significant source of obtaining information.¹¹ A numbers of barriers were unique to organizational settings.¹² In particular; our survey found that lack of training was a significant barrier to our participants. The key tool in the evidence based approach is the systematic literature review for their explicit, well documented, scientific methodology in order to reduce errors or biases and to provide a more, objective, comprehensive view of the research literature.¹³

Advantages of EBP

- Attempts to implement the hypothesis-driven scientific processes to critically evaluate the research reports from design, methods, and data analysis points of view.
- Produce the consensus of the best available evidence.
- More objective yet thorough and compressive
- Aids to improve the quality of research works carried out by the students.
- Scientifically sound and transparent methodology-students and the entire dental team are informed about the latest available treatments.
- Incorporates a correct clinical judgement-treatment decisions are easier to justify to the students.
- Patient focussed - entire dental team provides the best available treatment to patients.

The limitation of the present study was that in this cross-sectional survey the responses were participants

self-report and self-judgement, not an audit of actual practice; the results might not reflect the realities of practice under routine clinical care. The frequencies of use of these electronic databases for solving the clinical problems were not recorded.

Also the other aids used by the postgraduates to resolve their clinical problems encountered were not recorded. We believe our respondents are a representative sample because their backgrounds were similar. The lower response of staff members can be attributed to the fact that the survey was carried out in the period of vacations leading to unavailability of staff.

In spite of these limitations, our survey presents several potentially useful findings. Our study differs from previous studies examining information searching patterns in that we evaluated self-reported EBP-related behaviours in the context of clinical decision making, which is a vital component in implementing research evidence into clinical practice.

Further studies are required to assess the use of other sources of information in resolving clinical problems among postgraduates, similar assessment is required among the faculties of various dental colleges and a special training program on evidence based dentistry has to be developed for the postgraduates to impart evidence based dentistry into their clinical practice.

Conclusion

The significance of the present study stems from its focus on evaluating implementation of EBP in daily clinical practice. Our data showed that faculty members more often integrate evidence into clinical decision-making when the following characteristics are present: positive perceptions toward EBP, high self-efficacy to perform EBP, educational training for EBP, and having a faculty position and a high academic degree. There were significant differences in the attitudes and implementation of EBD of post graduate students and staff members. They perceived personal barriers and lack of training towards EBD. Therefore, strategies for enhancing EBD training and implementation should be delivered at the basic level for the growth and development of dental profession.

Future Implications

To the extent possible, education and training may help to increase positive beliefs and attitudes regarding EBD among the young budding professionals who would address to the challenges of the field and ultimately take it to the next leading edge.

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