



Role of Evidence Based Dentistry in Day to Day Dental Practice-Perception of Postgraduate Dental Students and Clinical Practitioners - KAP Study

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Authors' contributions

This work was carried out in collaboration between all authors. Authors VA and NS designed the study, wrote the protocol and wrote the first draft of the manuscript. Authors SK and RDG managed conductance of the study. Authors VSP and RK managed the literature searches. All authors read and approved the final manuscript.

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ABSTRACT

Aim: To assess and compare the knowledge, attitude and practice of dental practitioners and dental postgraduate students towards the practice of evidence based dentistry (EBD).

Methodology: A random sample of 225 dental practitioners and postgraduate students were

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involved in the study. Participation was voluntary. A cross-sectional survey with self administered questionnaire was done. The questionnaire was loosely based on 3 categories; namely knowledge, attitude and practice. All questionnaire forms were distributed and collected by mail. Results were statistically evaluated using a t test.

Results: Most of the general practitioners seem to be less familiar with the concept of Evidence Based Dentistry (EBD). The trend is more predominant with BDS practitioners. Despite majority of the participants being MDS or postgraduate students, only 28.62% of the participants were thorough with the concept of EBD with 68.9% of the participants having a fair idea about it. Among these practitioners, majorities are resorting to help and advices from friends or colleagues. 91.1% of the respondents have shown interest in improvising their knowledge by practicing evidence based dentistry.

Conclusions: EBD is not a new concept but still most of the dentists are not familiar with. Majority of the dentists are even unaware of the terms used in EBD. Educational program regarding EBD targeted at general dentist population should be encouraged to enhance their knowledge and use of EBD in everyday practice.

Keywords: Evidence based dentistry; RCT; CONSORT; STARD; PICO.

1. INTRODUCTION

Patient satisfaction is of prime importance to the dentists of today. While patient expectations have gone up exponentially, so have the patients awareness of their own rights, and the different modalities of treatment available to them. Much of this revolutionary change can be attributed to the electronic boom, with knowledge being available to everyone just a click away. Information has become so easy available now that patients reporting for their routine appointments or consultations come with abundant information on the various treatment options available for their own dental problems, some of which even the treating dentist may be unaware of. It is hence imperative for all the dental practitioners of today to be up to date with all the recent advances knowing the pros and cons of each new technique [1].

In situations of doubt pertaining to treating any particular patient, practitioners often take the help of other fellow dentists, textbooks, colleagues, professors and/or electronic databases. However, other colleagues and senior practitioners' opinions and ideas may usually be influenced by their personal experiences and sometimes be even driven by economic factors. Also in the event of a medico legal negligence issue arising, these opinions and advices don't hold true unless backed scientifically. In such cases, it is evidence based dentistry (EBD) and not the opinions of others which can help [2]. This is the importance of evidence based practice (EBP). 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 preferences [3]. The importance of EBD lies in its multitude of advantages like enabling the practitioner to monitor and develop clinical skills, more effective use of resources and improved effective use of research evidence in clinical practice [4].

The aim of this study was to assess and compare the knowledge and attitude of general dental practitioners and postgraduate students towards the practice of EBD and reach conclusions on the need of EBD programs to educate them.

2. METHODOLOGY

A systematic questionnaire containing 20 questions was used to assess the knowledge, attitude and practice of general dentists regarding EBD. All the 20 questions were close ended ones. The questionnaire was divided into three categories based on knowledge, attitude and practice based on topics like PICO principle, systematic review, meta analysis, etc. A four point Likert scale was used in majority of the questions. Questionnaire was prepared based on previous studies done by Hendricson WD, et al. [5] and Risahmawati RM Risahmawati et al. [6]. Practitioners who got selected for the study were in random manner and also provided with a separate text section to make any comments on perceived impediments in the use of EBD. To check the quality and clarity of the questionnaire,

a pilot study was done with 10 participants. Minor changes were incorporated before it was used in a larger sample. Instructions for filling forms were provided along with the form. All questionnaire forms were distributed and collected by mail. Results were statistically evaluated using a t test.

The data were entered in a Microsoft XL spreadsheet and analyzed using the statistical package (SPSS version 21) for Windows 9.0. A coding system was used when the data was entered. The free text section was analyzed visually, by looking for common themes.

3. RESULTS

A total of 225 participants participated in the study. Of the 225 participants involved in the study, 102 were males and 123 were females. 22 participants were eliminated because of either incomplete filling of the forms or failure to return back the forms. The final 203 participants comprised of 94 males and 109 females. Of these, 110 were dental practitioners while 93 were postgraduate students. All the postgraduate students were students of Sri Rajiv Gandhi College of Dental Sciences and Hospital, Bangalore. Postgraduate students from all the departments were involved in the study. The average clinical expertise of the practitioners was 4 years (range 1 to 20 years). Of all the dental practitioners, 77 had a BDS degree with the remaining 33 practitioners having a MDS degree. The demographics are expressed in Tables 1 and 2.

About 94% participants claimed of using their basic knowledge from text books obtained during their professional courses for handling routine cases. However, for handling complicated/special cases, only 7% of the practitioners used textbooks for reference with 79% of practitioners relying on the opinions of their colleagues/seniors.

Surprisingly, only 14.45% of the practitioners taking opinions from colleagues/seniors accepted

to always critically appraising their opinions before implementing, with 12.3% critically appraising the opinions after implementing.

Of all the 75.54% participants familiar with the concept of EBD, majority (109 participants) considered EBD to be time consuming and hence being responsible for not preferring to use it. The other participants aware of EBD felt the cost factor, vastness of the resource and the lack of skills to critically evaluate an article were responsible for EBD being used so less.

The questions assessed using Likert scale analysis gave the following results:

1. 77% of the participants agreed that the existing textbooks were insufficient in keeping them up to date with the recent advances. No participants strongly negated this.
2. Almost 75% of the participants strongly agreed to EBD being beneficial to their practice.
3. While 94% participants strongly agreed that medicolegal issues due to negligence were on the rise recently, only 58% strongly believed that EBD could be the best tool in cases such medicolegal issues had to be handled.
4. Only 37% participants strongly believed EBD to be easy to apply in their clinical practice.
5. 89% of the participants strongly agreed that programs to increase the awareness of EBD would be helpful in incorporating the same into the clinical practice.

These findings are tabulated in the Graph 1.

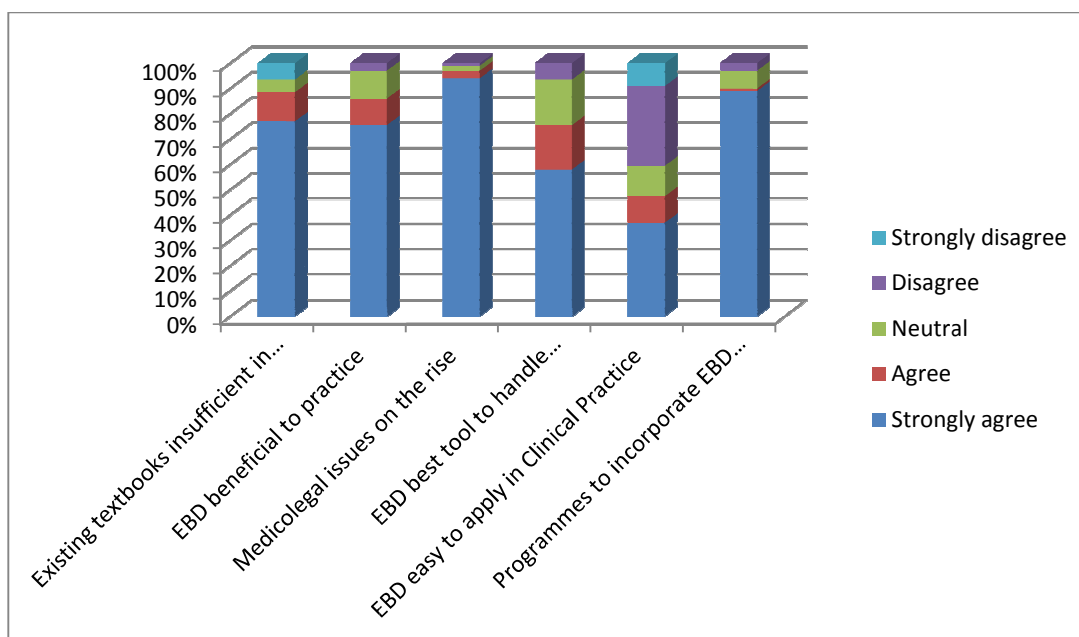
Table 3 shows knowledge regarding the topics used in EBD questions. Mean knowledges were higher among postgraduates than practitioners, statistically significant difference was present between mean knowledge on questions regarding PICO principle and Hierarchy of evidence levels ($p < 0.05$).

Table 1. Demographic details of the survey

Characteristics	Description	Number of participants	% of participants
Sex	Male	94	46.3
	Female	109	53.7
Highest professional degree	BDS	77	37.9
	MDS	33	16.25
	Postgraduate students	93	45.85
Clinical experience of total clinical practitioners (110)	<5 years	73	66.36
	>5 years	37	33.64

Table 2. Table depicting the demographics of the present study

	Practitioners		Postgraduate students
	BDS	MDS	
Males	36	22	32
Females	41	11	61
Total	77	33	93



Graph 1. Stacked bar diagram representing outcomes to questions asked

Table 3. Knowledge regarding the terminologies used in evidence based dentistry

Terminology used in EBD paper	Postgraduate students Mean ± SD	Dental practitioners Mean ± SD	t - value	p - value
Systematic review	2.50±0.78	2.35±0.77	1.29	0.11
Meta-analysis	2.55±0.81	2.48±0.79	1.41	0.15
Randomization	2.52±0.79	2.43±0.76	0.77	0.44
PICO principle	2.41±0.74	2.92±0.81	2.21	0.017*
Relative risk	2.38±0.78	2.30±0.67	0.73	0.48
Observational bias	2.57±0.75	2.58±0.69	0.09	0.93
Sensitivity and specificity	2.51±0.68	2.43±0.67	0.79	0.43
Clinical effectiveness	2.79±0.75	2.65±0.68	1.28	0.21
Hierarchy of evidence levels	2.22±0.74	1.98±0.53	2.31	0.019*
Confounding factors	2.59±0.74	2.52±0.68	0.64	0.52
Odds ratio	2.73±0.77	2.58±0.70	1.33	0.18

*Independent samples t –test (p < 0.05)

4. DISCUSSION

The study was carried out to assess the attitude and knowledge of postgraduates and practicing dentists towards EBD. The importance of Evidence Based Medicine (EBM) has been realized more in the recent past as evidenced by

a number of literature supporting the need for EBM [7,8] For routine clinical cases, 94% participants were found to rely on the knowledge obtained from textbooks during the course of their learning. None mentioned using online articles for reference. This can be attributed to familiarity with the textbooks referred to during

the professional course and ease of access to these in the clinic as well.

However, for handling complicated/ special cases, 79% of the participants preferred turning to colleagues/ seniors for help. The reason for this as highlighted by Iqbal et al. [9] can be attributed to the quick, cheap and easy to use, source of information provided by colleagues and seniors. Also the guidance, support, affirmation and other psychological benefits provided by colleagues were possible factors which scored over electronic databases to be preferred as a reference.

10 of the questionnaires, in the space provided mentioned that a verbal dialogue which was not possible with electronic references was possible in case of discussing cases with colleagues/ seniors thereby helping clarify associated doubts faster. Surprisingly, only 14.45% of the practitioners taking opinions from colleagues/ seniors ticked to always critically appraising their opinions before implementing, with 12.3% critically appraising the opinions after implementing. This is in sharp contrast to an expected higher value since the survey included 62% participants who either already had a MDS (Master of Dental Surgery) degree or those who were pursuing one. A postgraduate course familiarizes a student to the importance and value of EBD as a part of their curriculum and hence a higher percentage of participants critically appraising the opinions from reliable sources before implementing were expected. Of the participants who had a BDS (Bachelor of Dental Surgery) degree, critical appraisal was always sought by only 07 participants.

Of those who critically appraised the opinions always before implementing, 43% cross verified the opinion with other colleagues/ seniors before implementing while 52% referred to online scientific articles. However, in the space provided at the back of the questionnaire, details of the use of electronic databases were asked for. The answers provided ranged from Wikipedia, Google, Medscape, Cochrane, Medline and Pubmed. The general pattern noted here and a point as drawn from one of the participants was that only those scientific databases were referred to, to which free access was available. It was however noted that only 2 participants mentioned about referring to the Cochrane database for looking up evidence. The Cochrane Collaboration is an international organization whose overall aim is to build and maintain a

database of up-to-date systematic reviews of randomized controlled trials of healthcare interventions and to make these readily accessible electronically. On the contrary, Google was mentioned as a source for finding articles pertaining to the problem faced by dentists by majority of the practitioners [9].

Hence it seems that for those referring to Google as a source for finding articles, the source of the journal and the quality of the article would not have been a major concern.

Of major concern was the fact that while all of the clinical practitioners having completed their MDS were aware of the term EBD, of the 77 BDS practitioners, only 4 practitioners were fully aware of the term EBD and its concept. 61% of these participants (80 participants) familiar with the concept of EBD cited time consuming nature of EBD to be responsible for clinicians not preferring to resort to it. The other participants aware of EBD felt the cost factor (25 participants), vastness of the resource (5 participants) and the lack of skills to critically evaluate journals (20 participants) to be responsible for EBD being used so less. Further analysis of the questionnaires revealed that almost all of the practicing dentists with a MDS degree had cited financial constraint as being a hindrance to applying EBD in their routine practice. While all the postgraduate students have access to the scientific journals through the institution access, the cost factor is not cited or realized as a concern for them. 73 of the postgraduate students felt that the time consuming nature of EBD was its disadvantage while the remaining 20 postgraduates felt that a lack of skill prevented them from exploiting EBD to the fullest.

The lack of awareness of importance of EBD can be accessed from the following result of the survey as well: 47% of the practitioners were willing to take up challenging cases after consulting with their colleagues and seniors, while 22% were ready to take these cases up without even prior consultation with their colleagues. This attitude reflects the feeble consequences that the practitioner might have to face in case if the treatment executed goes wrong. The feeble consequences, ease of manipulating patients, or easy out of court settlements by providing compensatory treatment seems to be the reason for practitioners not feeling a need to have a scientific backing to the procedures performed by them.

Of the 5% participants (11 out of the 203) referring to textual matter before taking up challenging cases, 7 relied upon online articles from standard journals with none relying on textbooks. As expected, all the 11 participants were postgraduate students having access to all the scientific literature through the institution access.

In the study conducted by Iqbal et al. [9] in 2002 in UK, the numbers of practitioners aware of EBD were majority with 29% of the patients being capable of even defining the term.

Our survey on practitioners and postgraduate students in Bangalore, India reflects the lack of knowledge and awareness of practitioners in India has towards EBD. Only 20% of the total participants knew about EBD thoroughly while 68% of the total participants had only heard of it. This is surprising since this indicates that approximately 61 participants associated with an MDS degree (already obtained or pursuing presently) too had only heard of it. This clearly signifies the lack of clarity associated with EBD even in the minds of postgraduates and MDS practitioners. The study by Zamros YM, et al. [10] in Malaysia stated that 2.2% of their study population was unaware of the term EBD. Our study also yielded similar results with only 4% of the participants being unaware of EBD. All the participants unaware of EBD were dental practitioners with a BDS degree and in the category of having clinical experience of greater than 5 years. This finding supports the views put forward by.

These studies revealed that majority of the dental practitioners were interested in knowing more about the implementation and use of EBD and its incorporation in their practice. As mentioned by Rosenber et al. [11] EBD can be incorporated in a dental practice at any stage of a practitioners career and is easy to imbibe.

While a number of studies suggest a growing interest amongst dental practitioners to know more about EBD and implement it in their practice, a study by McAlister et al. [12] suggests that even those who are enthusiastic about EBM rely more on the traditional source of information rather than EBM related sources. The reasons for this can be attributed to the drawbacks associated with applying EBD.

On the other hand, some other studies cite time consuming nature of EBM and the ignorance of EBD towards clinical experience as its drawbacks. Study findings from a survey

conducted in Holland, cites lack of time and poor availability of resources as the most commonly perceived barriers [13].

The lack of time factor was cited as a barrier in our study as well. However, the option of poor availability of resources being a barrier to the incorporation of EBD in clinical practice was not included in the questionnaire due to a basic impression of access to internet being available to all the participants of the study.

5. CONCLUSION

The need for every dental procedure or advice to be based on sound scientific facts and the unrestricted access of patients to electronic information has given rise to an evidence-based healthcare to progress swiftly. EBD provides a dentist with additional armamentarium to form a decision based on sound thoughts and scientific backing. It hence helps exert only an influential role in decision making not an authoritarian one. [14].

It plays the role of a bridge, connecting real world dental practice to clinical research. Used correctly, it is the one tool that can help a dental practitioner to improve his practice and grow professionally without any fear or doubts.

Clinical decisions taken in a clinic are influenced based on a number of factors ranging from economic feasibility, patient preference, patient health, time constraint, available infrastructure and also the quality of the product in question. Evidence based dentistry is one additional factor that if added to the above factors, helps in making the best choice with a scientific backing.

However, the concept of evidence based dentistry is hardly known to practitioners in India. The easy access to colleagues and books prevents dentists from feeling the need to have a scientific backing to their practice. The need for doing research in the postgraduate courses in the form of thesis familiarizes every postgraduate to the importance of EBD. The scenario however at the undergraduate level is not so. The proportion of undergraduates aware of this EBD is estimated to be very low. Probably the time is ripe for aggressive programs to be conducted to educate all practitioners on the importance of EBD and its beneficial role upon being incorporated in ones practice. Of the many options available to spread this awareness, CDE programs, workshops, seem to be a few possible options. Sackett et al. [14] have suggested that a

journal club can be a useful forum to develop and enhance critical appraisal skills.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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