



Knowledge and Attitude towards Evidence-Based Dentistry among Final Year Post Graduate Dental Students in Bangalore City.

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Submitted: 01-04-2021

Revised: 08-04-2021

Accepted: 10-04-2021

ABSTRACT: Over the years the practice of dentistry has become more advanced and challenging. The need for reliable information and the electronic revolution have come together to allow the 'paradigm shift' towards evidence-based healthcare to progress swiftly. The term evidence-based dentistry is widely used, but not widely understood among post-graduate students due to a lack of in-depth training to distinguish good science from poor science. This study aims to assess the knowledge and attitude of evidence-based dentistry among postgraduate dental students of Bangalore. A questionnaire-based study was conducted among final-year dental postgraduate students of various colleges in Bangalore city. The questionnaire was created on Google forms and the link to the questionnaire was sent to all the final year post-graduate dental students in Bangalore city. Results of the study showed that 93% of the respondents of the study were aware of the concept of evidence-based dentistry and among them, 31% had applied the concept of EBD in clinical practice. 84.4% of the study population reported that they were willing to attend workshops on evidence-based practice. Overall the study subjects showed a positive attitude towards evidence-based dentistry.

KEYWORDS: Evidence-based practice, Dentistry, knowledge

I. INTRODUCTION

In the present era, clinicians are expected to keep up with the innovations in dental therapies, materials, research, and clinical recommendations.¹ Changing socioeconomic patterns, knowledgeable health care consumers, rapid technological advances, and the information 'explosion' places greater demand on clinical decision making. The need for reliable information and the electronic

revolution have come together to allow the 'paradigm shift' towards evidence-based healthcare to progress swiftly.^{2,3}

The traditional decision-making paradigm assumes clinical experience is a valid way to gain information for the diagnosis, treatment planning, and establishing prognosis. Under the relatively new paradigm of evidence-based dentistry (EBD), it is understood that experience is valuable but does not always represent valid evidence.⁴ Evidence-based dentistry closes the gap between clinical research and real-world dental practice and provides dentists with powerful tools to interpret and apply research findings.

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 patient's oral and medical conditions and history, with the dentist's clinical expertise and the patient's treatment needs and preferences.^{5,6,7}

Although the concept of Evidence-based practice was born two decades ago its arrival is relatively new in India and is in its developmental stages especially in dentistry. The goal of EBP is to provide patients with up-to-date treatment that research has shown to be safe and efficient .and to continuously improve patient care based on new research developments.^{8,9} The use of an evidence-based approach can surely help clinicians who want to stay abreast of changes in their areas of health care by assisting them with the selection of relevant articles and will aid them to efficiently extract and apply the information.

EBD does not replace clinical skills, judgment, experience, or patient preferences.⁸ The use of an evidence-based approach is intended to



close the gap between what is known and what is practiced. It is intended to improve patient care based on informed decision-making. The concept strives to provide patients with the best possible treatment based on systematic evidence.

Computerized medical databases such as Medline and Google scholar have made it easy to access information in the current age. Books, audio and videotapes; professional and university continuing education meetings, web-based continuing education programs, etc. helps to keep the dentist up-to-date with current information.¹⁰ Dental education and dental care delivery systems are greatly improved in India due to increased dental health workforce and development in the field of dental research. However dental under 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.⁸

On the one hand, the term evidence-based dentistry is widely used, but not widely understood among post-graduate students. Most post-graduate dental students learn clinical problem solving by a combination of the instructor's intuition, training, and clinical experience.¹¹

It is imperative to assess the knowledge, the attitude of postgraduates towards the concept of evidence-based dentistry to diagnose, treat, and prevent disease by translation of best scientific evidence into clinical practice. Post-graduate students need to be familiarised with evidence-based dentistry not only for the benefit of their patients but also to improve the quality of research work carried out by them. Present-day post-graduate students are going to be the torchbearers of the profession. The knowledge and attitude of these future academicians and clinicians towards evidence-based dentistry will be reflected in the quality of dental care provided to the people.

There is a dearth of published literature regarding knowledge, attitude, towards the practice of evidence-based dentistry among the post-graduate dental students in Bangalore. Hence this study aims to assess the knowledge and attitude towards evidence-based dentistry among postgraduate dental students of Bangalore.

II. MATERIALS AND METHODS

A questionnaire-based study was conducted among final-year postgraduate students of various colleges in Bangalore city.

A pilot study was conducted among 10 participants to assess the feasibility and applicability of the questionnaire. The reliability statistics obtained for

the questionnaire using Cronbach's alpha coefficient was 0.84 indicating good internal consistency.

A list of Dental Colleges in Bengaluru was obtained from the Rajiv Gandhi University of Health Sciences website¹². The administrative sections of all the colleges were contacted and the total number of final year postgraduates in each of the institutions was collected. The questionnaire was created on Google forms and the link to the questionnaire was sent to all the final year post-graduate students in Bangalore city through email. Multiple reminders were sent to the postgraduate students at regular intervals to remind them to fill the questionnaire.

The Questionnaire was accompanied by an introductory letter stating the purpose of the study and promising confidentiality. A total of 365 subjects were reached out, of which 212 responded. The first part of the questionnaire included gender, age, and discipline of the study subjects and the second part consisted of 20 closed-ended questions assessing the knowledge and attitude towards evidence-based dentistry.

III. RESULTS

A total of 212 study subjects participated in the study. Among them 30% were males and 70% were females.

In the present study, 41.8% (Figure 1) of the respondents were aware and had applied the concept of evidence-based dentistry. 51.9% were aware but had not applied the concept, and 7.1% of respondents were unaware of the concept of evidence-based dentistry. 84% of respondents were aware of data mining tools other than Google Scholar and PubMed and 16% of respondents were not aware of any data mining tools other than PubMed and Google scholar.

Respondents were asked to rate their knowledge towards the statistical terminologies used in research on a 4 point scale. The majority of the respondents (Table 1) had a good understanding of the terms p-value (53.3%), Confidence interval (44.8%), Sensitivity, and specificity (53.3%). 37.3% of respondents had a good understanding of Relative risk, 40.1%, 29.2%, 22.2% had a good understanding of Systematic review, Meta-analysis, Publication bias respectively .

84.4 % (Table 2) of respondents were willing to attend workshops on evidence-based dentistry. 80.2% of the study population reported that they believed that practicing evidence-based dentistry improves patient care. 76.4% of respondents were of the opinion that evidence-



based dentistry should be a part of the undergraduate curriculum.

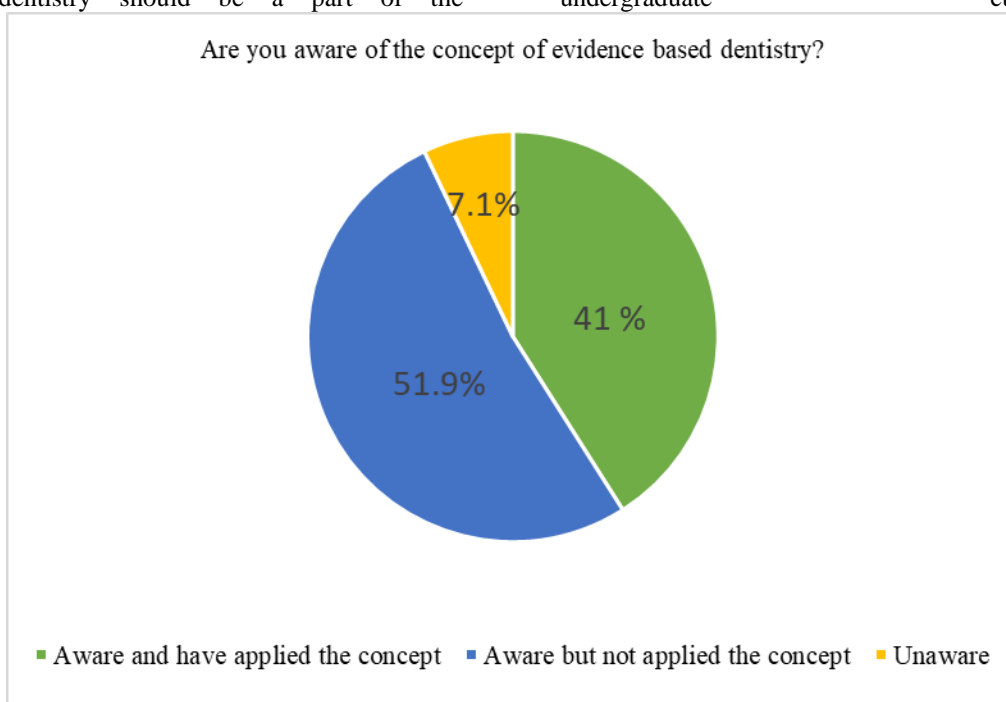


Figure 1 – Are you aware of the concept of evidence-based dentistry

Statistical terms	Good understanding		Vague idea		No idea but willing to know		No idea and not willing to know	
	N	%	N	%	N	%	N	%
P value	113	53.3	67	31.6	23	10.8	9	4.2
Confidence interval	95	44.8	66	31.8	40	18.2	11	5.2
Sensitivity and specificity	79	53.3	111	36.8	16	7.1	6	2.8
Relative risk	113	37.3	78	52.4	15	7.5	6	2.8
Systematic review	85	40.1	95	44.8	28	13.2	4	1.9
Meta-analysis	62	29.2	105	49.5	33	15.6	12	5.7
Publication bias	47	22.2	97	45.8	59	27.8	9	4.2

Table 1- Knowledge of respondents towards statistical terms in research



Questions	Yes		No	
	N	%	N	%
Are you willing to attend workshops on evidence-based dentistry?	170	84.4%	42	15.6%
Do you think practicing evidence-based dentistry improves patient care	179	80.2%	33	19.8
Do you think evidence-based dentistry should be a part of the undergraduate curriculum	162	76.4%	50	23.3%

Table 2- Respondents attitude towards evidence-based dentistry

IV. DISCUSSION

Learning and practicing EBD will be the key to increasing the proportion of evidence-based treatments. EBD requires dentists to learn innovative skills which are not traditionally taught in dental colleges. There are very few studies reporting the knowledge of EBD among dental practitioners in India, with even lesser studies about it among postgraduate students. A total of 212 study subjects participated in the study. Among them 30% were males and 70% were females.

According to the present study majority of (93 %), the respondents were aware of the concept of evidence-based dentistry. This was much higher compared to the study conducted by Prabhu S et al (2012)¹¹ among dental postgraduate students where only 73% of respondents were aware of the concept of evidence-based dentistry. Among the respondents who were aware of the concept, 41.8% of respondents had applied the concept of evidence-based dentistry, 51.9% were aware but had not applied the concept.

Among 93% of the respondents who were aware of the concept of evidence-based dentistry 31% were able to correctly identify the components of EBD. Only a mere 7.1% of respondents in the present study were not aware of the concept of evidence-based dentistry . This may be because a positive trend towards evidence-based dentistry has gained momentum in India over the years.

In a study conducted by Yusof ZY et al (2008) ¹³ among dental practitioners of Malaysia, only 2.2% were unaware of Evidence-based dental practice.

The key tool in the evidence-based approach is the systematic literature review for their explicit, well- documented, scientific methodology to reduce errors or biases and to provide a more, objective, comprehensive view of the research literature. Regarding the terminologies used in research; the majority of the respondents had some understanding of the terminologies used in this study. The learning of skills needed to critically appraise scientific articles is central to the practice of evidence-based dental practice.

The majority of the respondents in the present study had an overall good understanding of the various statistical terms used in research. Those who were unaware of the terms displayed a willingness to learn more about these terms. This finding was in contrast to the study conducted by Haron M et al (2012)¹⁴ among dentists in Kuwait where the level of knowledge was poor, and 13% felt that knowledge about statistical terms was not relevant.

74% of respondents could identify the correct definition of systematic reviews in the present study which was much higher compared to a study conducted by Iqbal M (2002)¹⁵ on general dental practitioners in North West England where only 18% were able to define the term systematic review.

When asked about the term publication bias 45.8% of the respondents had a vague idea regarding the term and among those who were unaware of the term, 27.8% of respondents were willing to know about the term publication bias which was much higher compared to the study conducted by Kumar J K(2017)¹⁶ among dentists of



Modinagar where only 5% of respondents were willing to learn about publication bias.

80% of the respondents in the present study were of the opinion that EBD improves patient care which was in accordance with studies conducted by Rajeshakharan SA et al (2011)¹⁷ and Rajagopalachari (2017)⁸ et al were 80 % and 76% of the respondents were of the opinion that EBD improves patient care. This finding was marginally higher than the finding reported in study conducted by Prabhu et al (2012)¹¹ were 62% of the respondents were of the opinion that EBD improves patient care.

Majority (84.4%) of respondents of the present study stated that they were willing to attend workshops on evidence based dentistry, which was in accordance with the study conducted by Yusuf ZY (2008)¹³ et al were majority (81.3%) of the study population desired to learn more about EBD by attending seminars and lectures.

The present study had certain limitations. In this cross-sectional survey, the responses were Participants' self-report. Self-reporting can introduce social desirability bias as the participants presume about their knowledge which they may not possess.

The response rate of the study was 58% even after repeated reminders. Therefore the data might not be complete representation

V. CONCLUSION

Evidence-based dentistry is relatively a new paradigm in India and thus may not be a well-known concept to every dental postgraduate student. The present study showed that the postgraduates were familiar with the general concept of evidence-based dentistry. However their knowledge of the terms used in evidence-based dentistry and research is limited. They were open to learning more about these terminologies. This was reflected as a positive attitude of the respondents towards utilizing evidence-based dentistry in clinical practice. The majority of respondents were of the opinion that evidence based dentistry should be included in the dental undergraduate curriculum.

There should be an adequate program developed in the form of research workshops, continuing dental education programs, and seminars on evidence-based dentistry. In this manner the concept of evidence based dentistry can be integrated into routine clinical practice, which improves the quality of dental care provided to the patient.

CONFLICT OF INTEREST

Authors declare no conflict of interest

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