

Evidence - Based Dentistry: Are We There Yet? Survey of Indian Dental Professionals on Awareness of Evidence - Based Dentistry

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Abstract

Introduction

Evidence-based practice (EBP) is said to be the current best approach to provide interventions that are scientific, safe, and efficient. Objective of this study is to assess the knowledge, attitude & barriers towards evidence-based dental practice among Indian dental professionals.

Methodology

A questionnaire-based cross-sectional survey was conducted among 276 registered dental practitioners in North India. Data was collected using a self-administered questionnaire through Google form

containing demographic details and 22 questions for assessing Knowledge, attitude, practice & barriers in Evidence-based dental practice. Questionnaire was close-ended which consisted of two parts i.e. Demographic details and 22 questions.

Result

70.65% of participants reported having heard of EBDP before this study. When the participants who had studied about EBDP, were asked whether they understood some common terminologies used in the EBP like Systematic reviews & meta-analysis, Randomized control trials, Hierarchy of evidence, etc., 97.6% of MDS practitioners said that they had some knowledge, whereas only 71.3% BDS practitioners were

aware of these terms. On the basis of qualification 98.2% MDS practitioners agreed that EBDP will help in clinical decision making, whereas 89.9% BDS practitioners agreed for the same.

Conclusion

Awareness regarding EBP was quite higher in specialist & practitioners associated with academics. Graduate dentists & dentists practicing only in clinics were less aware about it comparatively but majority had a welcoming attitude towards EBP.

Keywords

Evidence-Based Dentistry, Indian Dental Professional, Awareness & Practice

Introduction

Evidence-based practice (EBP) is said to be the current best approach to provide interventions that are scientific, safe, efficient and cost effective. The reasons for this are assumed to be through improvements in dentists' skills and knowledge, as well as in the communication between patients and their dentists about the rationale behind clinical recommendations made. The foundation for Evidence-Based Dentistry (EBD) was laid by Sackett who has defined it as "integrating individual clinical expertise with the best available external clinical evidence from systematic research." EBD is the integration and interpretation of the available current research evidence, combined with personal experience. It allows dentists, as well as academics researchers, to keep update of the new developments and to make decisions that should improve their clinical practice.¹ The term was coined by the clinical epidemiology group at McMaster University in Canada. American Dental Association has defined EBD as: "an approach to oral health care that requires the judicious integration of systematic assessments of clinically

relevant scientific evidence, relating to the patients oral and medical condition and history, together with the dentist's clinical expertise and the patient's treatment needs and preferences.² EBP was introduced into dentistry, specifically in the early nineties and named evidence-based dentistry.³ The aim of EBP is to encourage health-care professionals to look for and make sense of the evidence available to apply it to everyday clinical practice. The ultimate goal of EBP is to improve the health of patients through clinician decisions that are based on updated health-related knowledge.^{4,5}

Aim & Objective

So, the objective of this study is to:

1. To assess the knowledge, attitude & barriers towards evidence-based dental practice among Indian dental professionals.
2. To better understand the perceptions of dentists regarding EBD and its implementation to practice

Material & Method

A questionnaire-based cross-sectional survey was conducted among 276 registered dental practitioners in North India over a period of 1 year from February 2017 to February 2018. Ethical approval was obtained from Institutional Committee. Informed consent was received from every participant after explaining the study. A pilot study was conducted on a total sample (n = 25) to check for the feasibility of the questionnaire, its validity, and reliability. Construct validity of the questionnaire was confirmed using Spear man's correlation coefficient ($P < 0.001$). The internal reliability for the responses to questions was determined using Cronbach's alpha coefficient which was acceptable (0.79).

Questionnaire

Data was collected using a self-administered questionnaire through google form containing demographic details and 22 questions for assessing Knowledge, attitude, practice & barriers in Evidence-based dental practice. Questionnaire was close-ended which consisted of two parts i.e. Demographic details and 22 questions. Demographic details included age, gender, qualification, years of clinical experience & type of clinical practice. Participant's qualification was categorized as BDS or MDS and their clinical experience was also categorized into four groups 0-4, 5-9, 10-14, and > 15 years. A pilot study was done on 10 % of the sample size to confirm validity and reliability.

Observation & Result

Data was collected from 276 dentists which included practitioners from North India. Practitioners were divided into different groups depending upon their qualification, clinical experience & kind of practice. On basis of qualification 2 groups, Graduate & Post-graduate were made. Clinical experience was also categorized into four groups 0-4, 5-9, 10-14, and > 15 years. The kind of practice was divided into 2 groups associated with academics & non-academic.

Statistical Analysis

Data were entered into SPSS version 26.0 by using appropriate codes and analyzed. The Chi-square test was applied for data analysis. A mean EBD knowledge score for the participants was obtained and knowledge scores were normally distributed. Therefore,

different factors, including Qualification, years of clinical experience, education were compared with participants' understanding in relation to the mean group EBD knowledge score, using an unpaired t-test. $P < 0.05$ was considered statistically significant.

Results

Out of 374 participants from North India, 276 responded to the questionnaire giving an overall response rate of 73.8%. There were 47.8% males and 52.2% females. In terms of qualification, 39.1% of the respondents were general dentists (BDS). Out of 276 respondents, only 10.2% of the participants had the experience of more than 15 years, 38% of people had the experience of 1-5 years. 78.2% of participants were not associated with the academic institution.

Dentist's Familiarity with Evidence-Based Dental

Practice

When dentists were asked whether they have heard about Evidence-based dental practice before, 70.65% of participants reported having heard of EBDP before this study. Based on their affiliation with academics, 90.2% of dentists had heard about EBP and only 65.1% from non-academic practice had heard about EBP. Similarly, 86.3% of MDS practitioners have heard about EBP, whereas only 46.3% of BDS practitioners were aware of EBP.

		Have you ever heard about Evidence Based Practice?			
		No		Yes	
		Count	Row N %	Count	Row N %
KIND OF PRACTICE	Academic	6	9.8%	55	90.2%
	Non-academic	75	34.9%	140	65.1%
Years	1.00	25	23.8%	80	76.2%
	2.00	30	27.5%	79	72.5%
	3.00	20	46.5%	23	53.5%
	4.00	6	33.3%	12	66.7%
QUALIFICATION	BDS	58	53.7%	50	46.3%
	MDS	23	13.7%	145	86.3%

Table 1: Awareness of EBP among dentists based on their demographic variables.

There was significant difference found between the familiarity with EBDP and kind of practice, ($p < 0.001$) on applying the paired t-test (Table-2).

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Have you ever heard about Evidence Based Practice?	Equal variances assumed	125.525	0.000	3.880	274	0.000	0.250	0.065	0.123	0.378
	Equal variances not assumed			4.970	154.742	0.000	0.250	0.050	0.151	0.350

Table 2: Paired t-test between the familiarity with EBDP and kind of practice

Knowledge of Common Terms Used in Evidence-Based Practice

When the participants who had studied about EBDP, were asked whether they understood some common terminologies used in the EBP like Systematic reviews & meta-analysis, Randomized control trials, Hierarchy of evidence, etc., 97.6% of MDS practitioners said that they had some knowledge, whereas only 71.3% BDS practitioners were aware of these terms. On the basis of a year of practice, dentists having 1-5 years of

clinical experience were more aware of these terms compared to dentists having more experience. 96.7% of practitioners associated with academics had some knowledge of terms like Systematic review and meta-analysis, whereas 84.7% of non-academic practitioners were aware of these terms. When further asked if they need additional information on these terms or not, 32.6% wanted to know more about systematic review and meta-analysis.

		Are you familiar with these terms used in Evidence Based Dental practice - Systematic Review & Meta-analysis, Randomized Control Trials, Case series & Case reports, Expert Opinion , Hierarchy of evidence		
		Did not answer	No	Yes
		Row N %	Row N %	Row N %
years	1.00	0.0%	6.7%	93.3%
	2.00	0.9%	12.8%	86.2%
	3.00	0.0%	25.6%	74.4%
	4.00	0.0%	11.1%	88.9%
QUALIFICATION	BDS	0.9%	27.8%	71.3%
	MDS	0.0%	2.4%	97.6%
KIND OF PRACTICE	Academic	0.0%	3.3%	96.7%
	Non-academic	0.5%	14.9%	84.7%

Table 3: Knowledge of EBP Terminologies among dentists based on their demographic variables

There was significant difference found between the familiarity with terminologies used in EBDP and education level of dentists ($p < 0.001$) on applying the paired t-test.

Independent Samples Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Are you familiar with these terms used in Evidence Based Dental practice - Systematic Review & Meta-analysis, Randomized Control Trials, Case series & Case reports, Expert Opinion , Hierarchy of evidence	Equal variances assumed	289.994	0.000	-6.860	274	0.000	-0.272	0.040	-0.351	-0.194
	Equal variances not assumed			-5.731	121.164	0.000	-0.272	0.048	-0.367	-0.178

Table 4: Paired t-test between familiarity with terminologies used in EBDP and education level of dentists

Further Knowledge of Common Terms Used in Evidence Based Practice

When dental professionals were asked about whether they need more information about terminologies related to EBDP, 38% of them agreed that they required

more information about systematic review & meta-analysis, 26.8% needed information about all the terms & 11.6% said that they don't require more information about any term.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid		3	1.1	1.1	1.1
	All of the above	74	26.8	26.8	27.9
	Case series & case reports	16	5.8	5.8	33.7
	Don't require	32	11.6	11.6	45.3
	Expert opinion	9	3.3	3.3	48.6
	Hierarchy of evidence	20	7.2	7.2	55.8
	Randomized control trials	17	6.2	6.2	62.0
	Systematic review & meta-analysis	105	38.0	38.0	100.0
	Total	276	100.0	100.0	

Table 5: Participants requiring more information about terminologies of EBP

Participants' Attitude towards EBDP

The dental professionals were also assessed in terms of their attitudes towards EBDP. It was found that the majority of the respondents, agreed that EBDP will

help in clinical decision making (94.9%)). 4.3% of them were uncertain that EBDP will help in clinical decision making.

		Frequency	Percent
	Agree	145	52.5
	Strongly Agree	117	42.4
	Strongly disagree	2	0.7
	Uncertain	12	4.3
	Total	276	100.0

Table 6: Attitude of dentists towards EBP

On the basis of qualification 98.2% MDS practitioners agreed that EBDP will help in clinical decision making, whereas 89.9% BDS practitioners agreed for the same.

		Do you think EBDP (Evidence Based Dental Practice) will help in clinical decision making ?			
		Agree	Strongly Agree	Strongly disagree	Uncertain
		Row N %	Row N %	Row N %	Row N %
years	1.00	47.6%	47.6%	1.9%	2.9%
	2.00	57.8%	38.5%	0.0%	3.7%
	3.00	48.8%	39.5%	0.0%	11.6%
	4.00	55.6%	44.4%	0.0%	0.0%
QUALIFICATION	BDS	59.3%	30.6%	1.9%	8.3%
	MDS	48.2%	50.0%	0.0%	1.8%
KIND OF PRACTICE	Academic	37.7%	59.0%	3.3%	0.0%
	Non-academic	56.7%	37.7%	0.0%	5.6%

Table 7: Attitude of dentists towards EBP based on their demographic variable

There was significant difference found between the attitude towards EBDP and qualification of dentists ($p < 0.05$) on applying Chi-square test.

		QUALIFICATION
Do you think EBDP (Evidence Based Dental Practice) will help in clinical decision making?	Chi-square	16.983
	df	3
	Sig.	.001*,b,c

Table 8: Chi-square test between the attitude towards EBDP and qualification of dentists

Discussion

In developed countries like the United States, Canada, Australia, New Zealand, and Europe clinical guidelines are evidence-based, but in most developing countries like India still, evidence-based dentistry is not practiced. The lack of information about the level of EBP being implemented has been recognized as a major issue in healthcare delivery.⁶

The present study targeted dental practitioners working in both academic & Non-academic set up of North India with the objective to assess their awareness on evidence-based dental practice and overall attitude

perceived towards it. This study assessed awareness of both general as well as specialist practitioners towards EBDP.

The response rate of the present study was 73.8 % lesser than Haron et al., (80%)⁷ and Prabhu et al., (86.7%)⁸ [Table/Fig-8]. Such less response might be attributed to usage of electronic form to fill the survey instead of personally visiting & asking for filling it. Majority of the respondents (70.5%) had heard of EBDP before, similar to the results of Yusof et al., but higher than the study of Pratap et al.^{9,10}. EBDP can prove to be a useful tool in assisting practitioner in terms of

providing better quality of care and at the same time fulfilling patient's demands.

When the participants who had studied about EBDP, were asked whether they understood some common terminologies used in the EBP like Systematic reviews & meta-analysis, Randomized control trials, Hierarchy of evidence, etc., 97.6% of MDS practitioners said that they had some knowledge, whereas only 71.3% BDS practitioners were aware of these terms. This could be attributed to involvement of dentists in research activities during post graduation. A significant number of participants (38%) needed additional information about systematic review and meta-analysis. This was quite similar to the findings of Haron et al., but significantly lesser than Yusof et al.,^{7,9}. This form of evidence ranks highest in the hierarchy of evidence and must be primarily sought in clinical difficulties. Most of the respondents as they claim to understand the term "Randomized Controlled trial and Hierarchy of evidence" might be only their perceived knowledge not the accurate understanding.

Most of the respondents had positive attitude towards EBDP which is encouraging, similar to the results of Prabhu S et al., and Ashri N et al.^{8,11}. Majority of the participants (94.9%) agreed that it will help in decision making, which is quite higher than previous studies. This was a significant finding since scenario of treating patients is now changing more towards scientifically proven basis mixed with patient's preferences and clinician's experience.

Limitation of the Study

Self reporting can introduce the social desirability bias as the participants presume about their knowledge which actually they don't possess. As not all technical terms used in EBP were asked to assess dentist's knowledge, this may additionally overestimate

the knowledge scores found in the study. Also, to generalize the result we need to collect data from different areas of India.

Conclusion

The overall awareness of EBDP among general dentists was lesser when compared to specialist in terms of their qualification. The findings of this study provide an insight that awareness regarding EBDP has increased but the utilization of evidence-based practice by dentists is limited because of lack of proper training. Including evidence-based dental practice teaching in dental curriculum may prove to be a significant step in improving dental care delivery to the patients.

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