ORIGINAL RESEARCH PAPER

VOLUME-6 | ISSUE-5 | MAY - 2017 | ISSN No 2277 - 8179 | IF : 4.176 | IC Value : 78.46

INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

# Knowledge, Attitude and Perceived Barriers towards Evidence Based Practice among Medical Academicians and Private Practitioners in Pune, India.

Medical Science

**Ketaki B** M.D.S., Lecturer in the Department of Public Health Dentistry, Sinhgad Dental College and Hospital, Pune.

**Vineet Vinay** M.D.S., Lecturer in the Department of Public Health Dentistry, Sinhgad Dental College and Hospital, Pune.

## ABSTRACT

**Background:** Evidence based practice (EBP) is a systematic approach to clinical problem solving which allows the integration of the best available research evidence with clinical expertise and patient values. **Objective:** To assess and compare the Knowledge, Attitude and perceived barriers towards EBP among medical academicians and private practitioners in Pune city. **Methodology:** A cross-sectional study was conducted amongst medical- academicians (n=150) and private practitioners (n=150) in Pune city, using self-administered, pretested, validated, close ended, structured questionnaire. Data was analysed using descriptive statistics, Chi-square test and unpaired t-test. **Results:** Among the medical academicians and private practitioners, 59 (39.3%) and 77 (51.3%) respectively showed poor knowledge whereas 81 (60.7%) and 73 (49.7%) respectively showed fair knowledge regarding EBP demonstrating a statistically significant difference between their mean knowledge score, (p-0.014). The attitude of the medical academicians 93 (62.0%) and private practitioners 118 (78.6%) towards EBP was positive. Barriers to its use included lack of available time and lack of application of evidence in patients. **Conclusion:** It was found that significant proportion of professionals had inadequate knowledge of EBP but showed a positive attitude towards it, therefore, a formal training and reinforcement is required.

## KEYWORDS:

Academicians, Evidence Based Practice, Private practitioners

**Introduction:**

Doctors must cope with a rapidly changing body of relevant evidence and maximise the quality of medical care. They need new skills to track down the new types of strong and useful evidence, distinguish it from weak and irrelevant evidence, and put it into practice[1]. To overcome the gap between best practice and actual care, professional organisations worldwide encourage Evidence-Based Practice (EBP).[2]

Evidence based practice (EBP) is said to be the current best approach to provide interventions, the advantages of which are scientifically proven to be safe, efficient and cost effective[3]. EBP requires the integration of the best evidence with clinical expertise and patient preferences and therefore it informs, but never replaces, clinical judgement. Medicine has benefited from EBP in several ways.[4]

Medical professionals provide ongoing comprehensive care and are pivotal to the coordination of care across the health care system. Within this broad and complex work environment, they make many thousands of clinical decisions each year about diagnosis, prognosis, and patient management; however, it is difficult to ascertain how many of these decisions are consistent with the best available evidence[5]. The medical professionals are required to continuously update their knowledge and skills with respect to new diagnostic and treatment modalities to provide the patients with the optimum treatment needed.[6]

Medical education and medical care delivery systems are greatly improved in India due to increased medical health workforce and development in field of medical research, however medical graduation and post-graduation training program in India is mainly targeted towards preventive and curative medical procedures, there is a lack of emphasis on the application of evidence based dentistry in clinical practice. On the other hand, the term evidence based practice is widely used, but not widely understood among medical professionals due to lack of in depth training to distinguish good science from poor science. Most of the medical professionals' clinical questions and problems are solved by training which relies heavily on clinical experience and information learned in medical school, seminars or from colleagues which may or may not be based on scientific evidence leading to inappropriate treatment outcomes experience.[7,8]

There is a lack of evidence from medical literature regarding knowledge, attitude and perceived barriers towards evidence based practice among the medical professionals. Hence the study was conducted to assess and compare the knowledge, attitude and perceived barriers towards evidence based practice among medical academicians and private practitioners in Pune, India.

**Materials and Methods:**

A cross-sectional questionnaire based study was conducted among medical academicians and private practitioners in Pune city, India for a period of 3 months. The study follows the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines. The study protocol was reviewed by the Ethical Committee of institutional review board, and ethical clearance was granted. The necessary permission were obtained from the authorities of the 2 medical colleges in Pune city.

A questionnaire was designed and a pilot study was conducted to check for its face and content validity as well as to test its reliability. The questions were framed after thorough review of the literature and the content validity was reviewed with the help of four experts. Cronbach's coefficient was found to be 0.78, which showed a good internal reliability of the questionnaire and the external reliability was established by the test - retest method in the pilot study, among 40 medical professionals who were not included in the main study.

The sample size was determined by using single proportion formula ($n = [Z\ \alpha / 2]^2\ p\ [1-p] / d^2$) at 95% confidence interval, where, $Z\ \alpha / 2 = 1.96$, p= 10% prevalence of knowledge of EBP from the pilot survey and d = 5% of marginal error was taken. By substituting the values in the above formula, minimum sample size obtained was 138 which was rounded off as 150 study participants in each group i.e. 150 medical academicians and 150 private practitioners. Therefore, the total sample size was 300 study participants.

All medical academicians and private practitioners with minimum of Bachelor of Medicine and Bachelor of Surgery and willing to participate in the study were included. Medical academicians working in medical colleges with or without private practice were included. The private practitioners registered in Indian Medical

Association Pune branch and practicing only private practice were selected. The medical academicians and private practitioners who were absent or clinics were closed on three consecutive visits were excluded. Systematic random sampling technique was used to obtain required sample size from the list of persons from whom informed consent was obtained.

A self-administered, close ended, structured questionnaire was used for data collection. Apart from the demographic profile the questionnaire consisted of three sections with eleven questions on knowledge, five on attitude and seven questions on perceived barriers. It also included questions on pervious training in EBP and willingness to attend the training.

The questions on knowledge were based on multiple choice questions. Each correct answer was awarded 1 mark while incorrect answer was awarded 0 marks. Scores were based on the number of correct answers given for the knowledge questions. The inference was drawn as: Poor: 0-3, Fair: 4-7 and Good: 8-11.

The five questions on attitude were based on Likert scale. Strongly agree and agree was awarded 1 mark while uncertain, disagree and strongly disagree was awarded 0 mark for all attitude based questions except for 2 questions based on practicality of EBP and on devaluation of clinical experience due to EBP in the section which were reverse scored with strongly disagree and disagree having 1 mark and uncertain, agree and strongly agree having 0 mark. Scores were based on the number of answers indicating positive attitude of the students. Those who scored more than 60% (≥ 3 correct answers out of 5) were considered as having positive attitude while score less than 60% (< 3 correct answers) corresponded to negative attitude.[10]

Statistical analysis was performed using IBM Statistical Package for Social Sciences (Statistics for Windows, Version 21.0. Armonk, NY: IBM Corp.). The descriptive summary statistics included percentages, means and standard deviations. Chi- Square test for proportion was used to compare the proportion of correct answers. Unpaired t- test was used to compare the means of knowledge scores between the academicians and private practitioners. A $p \leq 0.05$ was considered as significant for all statistical analyses.

**Results:**

A total of 300 questionnaires that were completely filled were analysed corresponding to a response rate of 100%. Of those received 150 (50%) were from medical academicians and 150 (50%) from private practitioners. Majority of medical professionals were in the age range of 35-45 years with 5-10 years of experience where 168 (56%) were males and 132 (44) were females. Only 26 (17.3%) of medical academicians and 9 (6.0%) of private practitioners claimed to have attended EBP workshops or courses but almost 80% of medical academicians and private practitioners are willing to undergo training in EBP in the form of workshop of 5-8 hours.

The responses to the knowledge based questions were answered incorrectly by majority of the medical academicians and private practitioners, [Table 1]. The definition of EBP was answered incorrectly by a significant number of medical academicians 84 (56%) and private practitioners 101 (67.3). Almost 99% he medical academicians as well as the private practitioners were unaware of the definition of systematic review and components of EBP. Only 30% of the medical professionals were aware about the components of EBP. Among the medical academicians, 59 (39.3) had poor knowledge whereas 91 (60.7%) had fair knowledge regarding EBP and among private practitioners, 77 (51.3%) and 73 (48.7%) showed poor and fair knowledge regarding EBP, respectively based on the pre described grading for knowledge score. A statistically significant difference between the mean knowledge score (0.533) of medical academicians (4.94+1.58) and private practitioners (3.033+1.99) was seen, (p=0.014),

A positive attitude towards EBP was shown by 93 (66.0%) of medical academicians and 118 (78.63%) of private practitioners who were in agreement with the benefits of application of EBP procedures and concepts. More than 80% of the medical professionals "agree" and "strongly agree" to EBP important in decision making easy [Table 2]. The mean attitude score of medical academicians and private practitioners was 2.77+1.49 and 3.04+1.33, respectively.

Even though a positive attitude was seen among the medical professionals in practice of evidence based practice, there exist certain barriers in its practice as depicted in Table 3. Lack of time, access to full text articles, difficulties in application into routine clinical practice and skills to appraise scientific journals, were considered as the potential barriers towards evidence based practice.

**Discussion:**

Healthcare decisions should preferably be based on high-quality research evidence such as clinical guidelines, systematic reviews or randomised clinical trials.[9] Ironically, healthcare professionals often fail to implement clinical procedures that have established efficacy or fail to discard proven ineffective procedures.[10] Evidence-based clinical practice is an approach to decision-making in which the clinicians use the best evidence available, in consultation with the patient, to decide upon the option that suits the patient best.[11] In this study, only 44% of medical academicians and 32.7% of medical private practitioners knew about EBP which is in contrast to the study conducted by Al Omari M *et al*[12] in Jordan and Abeysena C *et al*[11] in Sri Lanka among doctors wherein 52.6% and 17.7% respectively were aware about EBP.

The definition of systematic review was answered correctly by only 2.7% of medical academicians and 0.7% of medical private practitioners. The results were in contrast to the study conducted by Al Omari M *et al*[12] among general physicians where 31.7% knew the answers. The level of knowledge among study population differs from place to place and might be the reason for difference in knowledge levels. Also majority of the practitioners relied on clinical expertise rather than on reading systematic reviews which accounts for their low knowledge.

The medical professionals had some understanding of the technical terms used in EBP. However, a large proportion (30%) of medical professionals were unaware of the components of evidence based practice that integrates evidence, clinical experience and patient preference. The result was not in consensus with study conducted by Amin FA *et al*[13] among physicians in Bahrain where the awareness regarding the 3 components of EBP was less than 10%. The low level of knowledge about the components of EBP may be because majority of the professionals were unawareness that even patient's opinion forms one of the important component of EBP. Majority of the academicians had fair knowledge scores as compared to private practitioners who had poor knowledge scores. Also, a statistically significant difference between the mean knowledge score of medical academicians and private practitioners was seen, ($p<0.05$). The difference may be attributed to more exposure of theoretical knowledge among medical academician as they are recruited from institutes which have post graduate courses as compared to the private practitioners.

The attitude of the medical academicians and private practitioners towards EBP was positive with 66.0% and 78.63% respectively who agreed to the fact that evidence based practice brings quick knowledge update, helps in clinical decision making, improves patient care, reduce health care costs and evidence based dentistry should be a part of medical school curriculum, This finding is in accordance with the results of similar surveys conducted in Iran[14], Australia[15], Ireland[16], Saudi Arabia[17], Germany[18]. This positive attitude should be looked upon as an opportunity to identify weakness and promote understanding of the concept of evidence based practice by conducting seminars on evidence based dentistry or by recommending the introduction of evidence based practice into the

medical education curriculum.

In spite of positive views towards clinical practice of EBP, their use was affected by the perceived barriers. The major perceived barriers in use of evidence based dentistry were lack of time followed by difficulties in application into routine clinical practice, lack of access to full text articles and lack of skill to appraise scientific journals are the most common barriers, this finding was in accordance with the study by Amin AF *et al*[13], Risahmawati R *et al*[19], Weng Y *et al*[20] and Ahmed H *et al*[21].

The results may be because lack of wired or wireless internet connection available at the workplace of the professionals and also due to requirement of payed subscription for journals.

The lack of knowledge regarding the terms used in EBP resulted in lack of skill to appraise scientific journals.

Most respondents felt that the use of EBP is important, and showed great interest in finding out further information by attending workshop on EBP. The positive attitude shown by the professionals plays an important role in arranging for training program in EBP as the knowledge of EBP not only allows clinicians to apply research findings to solve daily clinical problems, but also serves as a methodology to improve their knowledge and clinical skills and help them monitor the quality and effectiveness of clinical treatments. Therefore, more EBP courses are needed in order to provide the patients with the optimal treatment.

There are certain limitations of our study. The sampling frame for private practitioners included only the members who were registered under Indian Medical Association Pune branch other practicing medical and medical practitioners were not considered. Therefore, studies with relatively larger population involving all institutes in the states is highly recommended. Since it was a questionnaire study, knowledge attitude and perceived barriers of EBP among the respondents may or may not be predicted, reflecting the inherent limitation of the study. Social desirability bias is a major factor contributing to it.

**Conclusion:**

Although there is a positive attitude and high support among medical professionals for the promotion of EBP, there is a deficit in knowledge and skills of EBP. Hence, the time appears ripe for planning and implementing an effective EBP educational programme for both academicians and private practitioners.

**Table 1: Distribution of medical academicians and private practitioners according to their knowledge score of EBP**

| Sr. No | Questions | Medical Academicians | | | | Medical Private Practitioners | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Correct n (%) | Incorrect n (%) | Chi Square | p-value | Correct n (%) | Incorrect n (%) | Chi Square | p-value |
| 1. | Definition of Evidence based practice | 66 (44) | 84 (56) | 2.16 | 0.142 | 49 (32.7) | 101 (67.3) | 18.02 | 0.000* |
| 2. | Definition of Systematic review | 4 (2.7) | 146 (97.3) | 134.4 | 0.000* | 1 (0.7) | 149 (99.3) | 146.02 | 0.000* |
| 3. | Definition of critical appraisal | 103 (68.7) | 47 (31.3) | 20.9 | 0.000* | 99 (66.0) | 51 (34.0) | 15.36 | 0.000* |
| 4. | Components of evidence-based practice | 45 (30) | 105 (70) | 24.00 | 0.000* | 31 (29.7) | 119 (79.3) | 51.62 | 0.000* |
| 5. | 'Strongest evidence' in the 'hierarchy of evidence' | 76 (50.7) | 74 (49.3) | 0.027 | 0.87 | 57 (38.0) | 93 (62) | 8.64 | 0.003 |
| 6. | 'Weakest evidence' in the 'hierarchy of evidence' | 94 (62.7) | 56 (37.3) | 9.62 | 0.002 | 82 (54.7) | 68 (45.3) | 1.30 | 0.253 |
| 7. | p value | 118 (78.7) | 32 (21.3) | 49.3 | 0.000* | 35 (23.3) | 115 (76.7) | 42.66 | 0.000* |
| 8. | Relative risk | 70 (46.7) | 80 (53.3) | 0.66 | 0.414 | 77 (51.3) | 73 (48.7) | 0.107 | 0.744 |
| 9. | Odds ratio | 98 (65.3) | 52 (34.7) | 14.10 | 0.000* | 47 (31.3) | 103 (68.7) | 20.90 | 0.000* |
| 10. | Confidence interval | 37 (24.7) | 113 (75.3) | 38.5 | 0.000* | 22 (14.7) | 128 (85.3) | 74.90 | 0.000* |
| 11. | Publication bias | 30 (20) | 120 (80) | 54.00 | 0.000* | 39 (26.0) | 111 (74.0) | 34.56 | 0.000* |

*** p<0.05**

**Table 2: Distribution of medical academicians and private practitioners according to their attitude towards EBP**

| Sr. No | Questions | Medical Academicians | | | | Medical Private Practitioners | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Correct n (%) | Incorrect n (%) | Chi Square | p-value | Correct n (%) | Incorrect n (%) | Chi Square | p-value |
| 1. | It will reduce healthcare cost | 88 (58.7) | 62 (41.3) | 4.50 | 0.034 | 99 (66.0) | 51 (34.0) | 15.36 | 0.000* |
| 2. | It will make decision making easy | 119 (79.3) | 31 (20.7) | 51.62 | 0.000* | 131 | 19 (12.7) | 83.62 | 0.000* |
| 3. | It should be incorporated in dental/ medical curriculum | 111 (74) | 39 (26) | 34.56 | 0.000* | 122 (81.3) | 28 (18.7) | 58.90 | 0.000* |
| 4. | It is impractical to follow Evidence Based Practice in everyday practice | 39 (26) | 111 (74) | 34.56 | 0.000* | 41 (27.3) | 109 (72.7) | 30.82 | 0.000* |
| 5. | Evidence based practice devalues clinical experience | 59 (39.3) | 91 (61.7) | 6.82 | 0.000* | 63 (42.0) | 87 (58.0) | 3.84 | 0.03 |

*** p<0.05**

**Table 3: Distribution of medical academicians and private practitioners according to their perceived barriers towards EBP**

| Sr. No | Perceived Barriers | Medical Academicians | | | | | Medical Private Practitioners | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | Strongly Agreen (%) | Agree n (%) | Unsure n (%) | Disagree n (%) | Strongly Disagree n (%) | Strongly Agree n (%) | Agree n (%) | Unsure n (%) | Disagree n (%) | Strongly Disagree n (%) |
| 1. | Lack of interest | 17 (11.3) | 35 (23.3) | 37 (24.7) | 57 (38) | 4 (2.7) | 16 (10.7) | 37 (24.7) | 28 (18.7) | 53 (35.3) | 16 (10.7) |
| 2. | Lack of time | 16 (10.7) | 78 (52.0) | 24 (16) | 30 (20) | 2 (1.3) | 20 (13.3) | 53 (35.3) | 20 (13.3) | 51 (34.0) | 6 (4.0) |
| 3. | Lack of computer literacy | 6 (4.0) | 33 (22.0) | 22 (14.7) | 68 (45.3) | 21 (14.0) | 7 (4.7) | 27 (18.0) | 22 (14.7) | 70 (46.7) | 24 (16.0) |
| 4. | Lack of access to internet connection | 5 (3.3) | 30 (20.0) | 20 (13.3) | 73 (48.7) | 22 (14.7) | 2 (1.3) | 22 (14.7) | 25 (16.7) | 74 (49.3) | 27 (18.0) |
| 5. | Lack of access to full text articles | 33 (22) | 59 (39.3) | 16 (10.7) | 27 (18.0) | 15 (10.0) | 16 (10.7) | 62 (41.3) | 21 (14.0) | 38 (25.3) | 13 (8.7) |

| | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6. | Lack of skill to appraise scientific journals | 16 (10.7) | 47 (31.3) | 32 (21.3) | 44 (29.3) | 11 (7.3) | 14 (9.3) | 41 (27.3) | 29 (19.3) | 56 (37.3) | 10 (6.7) |
| 7. | Lack of application of evidence in patients | 9 (6) | 67 (44.7) | 42 (28) | 27 (18) | 5 (3.3) | 18 (12.0) | 56 (37.3) | 38 (25.3) | 31 (20.7) | 7 (4.7) |

***p<0.05***

## References


1. Rosenberg W, Donald A. Evidence based medicine: an approach to clinical problem-solving. BMJ 1995;310:1122-6.
2. Rengerink KO, Zwolsman SE, Ubbink DT, Mol BW, Dijk N, Vermeulen H. Tools to assess Evidence-Based Practice behaviour among healthcare professionals. Evid Based Med. 2013 Aug;18(4):129-38. doi: 10.1136/eb-2012-100969. Epub 2013 Jan 24.
3. Ashri N, Al-Amro H, Hamadah L, Al-Tuwaijri S, El Metwally A. Dental and medical practitioners' awareness and attitude toward evidence based practice in Riyadh, Saudi Arabia. A comparative study. The Saudi Journal for Dental Research 2013;5(2):109-16.
4. Iqbal A and Glenny AM. General dental practitioners' knowledge of and attitude towards evidence-based practice. Br Dent J 2002;192:587-91.
5. Vashisth S, Bansal M, Gupta N, Rao N. Evidence Based Dentistry an evolving concept. J Indian Assoc Public Health Dent 2011:18:226-228.
6. Prabhu S, John J, Saravanan S. Knowledge, attitude and perceived barriers towards practice of Evidence Based Dentistry among Indian postgraduate dental students. Journal of Dental and Medical Science 2012;2(1):46-51.
7. Rajshekar SA, Kote SK, Nagesh L. Knowledge and Attitude towards Evidence based Dentistry among Postgraduate students of two Dental Colleges in Davangere City. J Indian Assoc Public Health Dent 2011:18(sup-II):761-5.
8. Kumar R. Medical education in India: An introspection. Indian Journal Of Public Administration 2014;LX(1):146-54.
9. Committee on quality of health care in America, Institute of Medicine. Crossing the quality chasm: a new health system for the 21st century. Washington: The National Academies Press, 2001.
10. Hayward RA, Asch SM, Hogan MM, et al. Sins of omission: getting too little medical care may be the greatest threat to patient safety. J Gen Intern Med 2005;20:686–91.
11. Abeysena C1, Jayawardana P, Wickremasinghe R, Wickramasinghe U. Evidence-based medicine knowledge, attitudes, and practices among doctors in Sri Lanka. J Evid Based Med 2010;3(2):83-7.
12. Al Omari M, Khader Y, Jadallah K, Dauod S, Al-Shdifat A, Khasawneh N. Evidence-based medicine among hospital doctors in Jordan: awareness, attitude and practice. J Eval Clin Pract 2009;15(6):1137-41.
13. Amin FA, Fedorowicz Z, Montgomery AJ. A study of knowledge and attitudes towards the use of evidence-based medicine among Primary Health Care Physicians in Bahrain. Saudi Med J 2006;27(9):1394-6.
14. Ahmadi-Abhari S, Soltani A, Hosseinpanah F. Knowledge and attitudes of trainee physicians regarding evidence-based medicine: A questionnaire survey in Tehran, Iran. Journal of Evaluation in Clinical Practice 2008;14(5):775-9.
15. Amin M, Saunders JA, Fenton JE. Pilot study of the knowledge and attitude towards evidence based medicine of otolaryngology higher surgical trainees. Clinical Otolaryngology 2007;32:133-5.
16. Al-Omari FK, Al-Asmary SM. Attitude, awareness and practice of evidence based medicine among consultant physicians in western region of Saudi Arabia. Saudi Medical Journal 2006:27(12):1887-93.
17. Meyer T, Stroebel A, Raspe H. Medical practitioners in outpatient care: who is interested in participating in EBM courses? Results of a representative postal survey in Germany. European Journal of Public Health 2005;15(5):480-3.
18. Risahmawati R, Sei E, Tomoko N, Shunzo K. Japanese resident physicians' attitudes, knowledge, and perceived barriers on the practice of evidence based medicine: A survey. BMC Research Notes 2011;4:374.
19. Weng YH, Kuo KN, Yang CY, Lo HL, Chen C, Chiu YW. Implementation of evidence-based practice across medical, nursing, pharmacological and allied healthcare professionals: a questionnaire survey in nationwide hospital settings. Implement Sci 2013;8:112.
20. Ahmed HS, Mohamed EY, Abdalla SM, Madani KA, Kaliyadan F. Knowledge, attitude and practices of evidence-based medicine among Sudanese medical doctors. Educ Health (Abingdon) 2015;28(2):152-3.