

## ATTITUDE AND PERCEPTION OF FACULTIES TOWARDS TEACHING EVIDENCE BASED MEDICINE TO PRE-CLINICAL & PARA-CLINICAL MEDICAL STUDENTS

Bhavita Patel<sup>1</sup>, Geetanjali Purohit<sup>2</sup>, Niraj Pandit<sup>3</sup>

### HOW TO CITE THIS ARTICLE:

Bhavita Patel, Geetanjali Purohit, Niraj Pandit. "Attitude and Perception of Faculties towards Teaching Evidence Based Medicine to Pre-Clinical & Para-Clinical Medical Students". Journal of Evidence based Medicine and Healthcare; Volume 2, Issue 6, February 09, 2015; Page: 615-620.

**ABSTRACT: INTRODUCTION:** Evidence-based medicine (EBM) is defined as the 'conscientious, explicit, and judicious use of current best evidence'. It is an important tool for lifelong learning in medicine, and medical students can develop the skills necessary to understand and use EBM. The teaching of EBM in Sumandeep Vidyapeeth is as part of Evidence Based Education System (EBES). The university has implemented the 16 hours of teaching with project work on Evidence Based Medicine in 1st MBBS and 2nd MBBS curriculum in addition to MBBS syllabus. **AIMS & OBJECTIVES:** This study was planned to take feedback from all the faculties those who are involved in Evidence based Medicine teaching to evaluate their attitude and perception towards this innovative teaching method and to recommend improvements. **MATERIAL & METHODS:** A Descriptive, self-structured, pilot pretested questionnaire based cross sectional study was conducted in the year 2013-2014 among 40 faculties from 7 Departments like Anatomy, Physiology, Biochemistry, Microbiology, Pharmacology, Pathology and Forensic Medicine teaching Evidence Based Medicine to students at S.B.K.S MI & RC, Sumandeep Vidyapeeth. Data was expressed as percentage. **RESULTS:** The response rate for the study was 75%. Almost 87% of faculties agreed that teaching EBM is a welcoming development during pre and para clinical years. About 80% faculties agreed that it will help them in future clinical learning. 87% faculties agreed that literature and research searching improves their day to day teaching. About 77% of faculties have attended workshop and training held in University and 83% of faculties agreed that they are interested in more learning and improving skills necessary to incorporate Evidence based medicine into their discipline. Barriers included shortage of time and need for training in teaching EBM. **CONCLUSION:** Faculties of this University teaching Pre-clinical and Para-clinical medical students recognized EBM as an important component of undergraduate education. Majority have positive attitude towards teaching EBM to undergraduates and agreed that it will help them in future clinical learning although they need more training to improve their ability to teach EBM. **KEYWORDS:** Evidence based Medicine; Attitude & Perceptions, Undergraduate education, Evidence based education system.

**INTRODUCTION:** In 1980's, Evidence-based practice had its roots in the medical field and goal was to give students and clinicians the skills to facilitate life-long learning. The term "Evidence-based medicine" was first introduced in 1992 by Guyatt.<sup>[1]</sup> Evidence-based medicine (EBM) is defined as the 'conscientious, explicit, and judicious use of current best evidence'.<sup>[2]</sup>

The acquisition of EBM knowledge and skills is becoming recognized as a core competency that must be acquired by all doctors and medical students.<sup>[3]</sup> The number of medical journals has

## ORIGINAL ARTICLE

---

also increased from about 100,000 during 1990 to more than 250,000 in 2000 and the number is continuously increasing. By learning how to search for the best available evidence and developing their skills efficiently, medical students will be able to cope with the heavy and rapidly changing information explosion. The regular practice of EBM is also associated with rekindling of student's curiosity and therefore becoming up to date.<sup>[4]</sup> Therefore, an increasing emphasis on training in EBM skills in undergraduate, postgraduate, and continuing medical education programs is becoming more widespread. Incorporating EBM principles throughout undergraduate medical education is recommended by famous associations, e.g. the Association of American Medical Colleges (AAMC).<sup>[3]</sup>

Among the undergraduates, at the preclinical level, medical students can learn EBM principles & formulate clinical questions and significantly improve skills for searching and critically appraising the evidences in the medical literature.<sup>[5]</sup> Typical Indian medical education system has still not adopted the new approach of evidence based education system. Sumandeep Vidyapeeth not only incorporated this into the curriculum but has also made it an assessment tool. The university has implemented the Evidence Based Medicine in 1<sup>st</sup> MBBS and 2<sup>nd</sup> MBBS curriculum in addition to MBBS syllabus as part of Evidence Based Education System (EBES).<sup>[6]</sup>

Also, there is a continuing need to introduce and sharpen EBM skills among faculties who teach medical students.<sup>[7]</sup> For these, in Sumandeep Vidyapeeth, workshops are organised for training of the teachers so they can implement the system in the curriculum in a very effective way. Teaching evidence-based medicine (EBM) should be evaluated and guided by evidence of its own effectiveness. Therefore many studies have been conducted to assess the attitudes and perceptions of students towards evidence based medicine but feedback studies from faculties are lacking.

Keeping this in mind, this study was planned to take feedback from all the faculties those who are involved in Evidence based Medicine teaching in Pre and Para clinical subjects to evaluate their attitude and perception towards this innovative teaching method and also evaluated further scope of improvement.

**MATERIAL & METHODS: SUBJECTS:** A descriptive, self-structured, pilot pretested questionnaire based cross sectional study was conducted during the academic year 2013-2014 among 30 faculties from Pre and Para clinical departments involved in Evidence Based Medicine teaching to medical undergraduates at S.B.K.S MI & RC, Sumandeep Vidyapeeth, Piparia, Vadodara, Gujarat, India. All the faculties, teaching Evidence Based Medicine for more than 6 months, were only included in the study. After getting ethical clearance from Sumandeep Vidyapeeth Institutional Ethics Committee (SVIEC/ON/MEDI/SRP/14179) data collection was started. Before the actual data collection, a pilot survey was conducted using a sample of 10 faculties who were asked to comment on the content and clarity of the questionnaire to ensure that the questions were unambiguous and valid. Necessary modifications were made as per the feedback received.

A total of 40 questionnaires were distributed among faculties after taking their written consent for participation in this study. Out of these 30 completely filled questionnaires were received back from the faculties.

# ORIGINAL ARTICLE

The questionnaire included questions for measuring the awareness, beliefs, attitudes, skills, barriers, and implementation of Evidence based Medicine. The mixed methods survey questionnaire consisted of a combination of close-ended, open-ended, and fixed response questions. Questions were rated using a Likert 5-point scale (Strongly agree, agree, neutral, disagree, and strongly disagree) for attitudes, skills and barriers.

**STATISTICAL ANALYSIS:** Qualitative data expressed as percentage. Graphs used to express representation and distribution of data.

**RESULTS:** The response rate of faculties was 75% and 30 faculties participated in study. Among the respondents, 9(30%) were females and 21(70%) males. The mean age of the respondents was 48 (range 25-68) years. Teaching experience with present institute was 6 yrs (range 1-11) and number of research publications were 4(range 1-10). Only 31% of the respondents do not visit University's library and mean no. of times visiting library was 3 times in a month (range 1-10) and 10% of faculties do not use virtual library like internet.

**ATTITUDE AND PERCEPTIONS OF FACULTIES TOWARDS TEACHING EVIDENCE BASED MEDICINE:** Among the 30 participants, 87% agreed (37% strongly agreed & 50 % agreed) that EBM is a welcoming development for medical undergraduates while 3 % were not sure about this and 10% disagreed (Table-1). Almost all faculties were trained for this new system but 77% of faculties agreed that they are interested in more learning and improving the skills specially on searching evidences. About 74 % faculties agreed that Problem, Intervention, Comparison and Outcome (PICO) format is appropriate format to explain clinical problems.

About 60% faculties were not aware of evidence based medicine before joining this university and 77% of faculties agreed that they want to be part of Evidence Based Medicine in future and 74 % faculties are supportive of EBM implementation in their Department. 80% of faculties critically appraise the evidence before incorporating into the lectures and 87% had developed the skills to access the published literature. Most of the faculties became aware of collaboration of Learning Resource Centre with EBESCO HOST and DYNAMED.

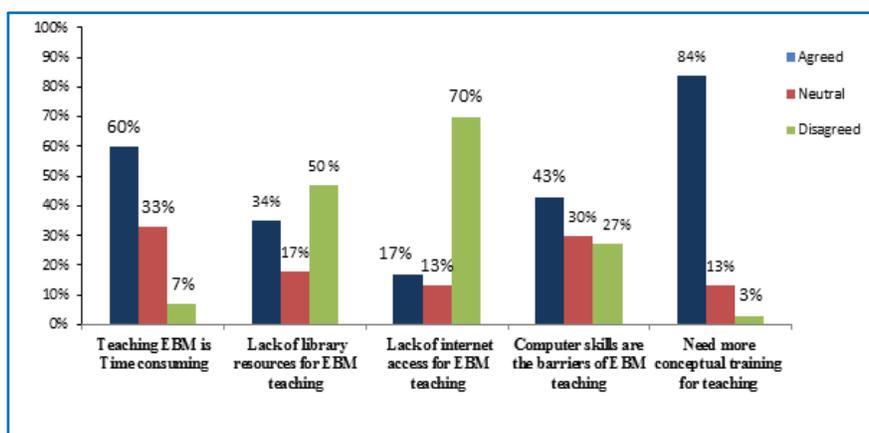
**BARRIERS OF EVIDENCE BASED MEDICINE:** All faculties gave their feedback for barriers for the new teaching methodology.

Questions	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Teaching EBM is a welcoming development for medical undergraduates	37%	50%	3%	5%	5%
Teaching EBM is the need of preclinical & paraclinical subjects	27%	47%	17%	6%	3%
Teaching EBM in pre- and para clinical years will help them in future clinical learning	30%	50%	14%	3 %	3%

# ORIGINAL ARTICLE

Literature and research searching improves day to day teaching	27%	60%	7%	3%	3%
Teaching EBM is helpful to update recent clinical knowledge	27%	53%	20%	0 %	0 %
Incorporating research evidence in lecture is beneficial for students	17%	50%	23%	5%	0%

**Table 1: Attitude and perceptions of faculties towards teaching EBM**



**Graph 1: Faculties perceptions towards Barriers of Teaching EBM**

**REMARKS ABOUT TEACHING EVIDENCE BASED MEDICINE:** Evidence based medicine updates knowledge, stimulates interest in subject & makes the researcher aware of recent advances. It also minimizes wrong clinical practices. It prepares student to become globally accepted and imparts meaning to what teacher teaches and makes sense to learn. But however it is somewhat time consuming & difficult for undergraduate students to understand. So it should be taught in a stepwise manner and appropriately.

**IDEAS ABOUT IMPROVEMENT OF EVIDENCE BASED MEDICINE TEACHING:** Many valuable ideas were given by faculties like more workshops and hands on training should be held repeatedly for Undergraduates, postgraduates and faculties for better understanding of concept of Evidence based Medicine & subject wise training should be kept at regular intervals. It should be continued as curriculum and other colleges should implement this method also. Many faculties also felt that seminars should be conducted at intra-department level and inter-college participation on Evidence based medicine should be organized.

**DISCUSSION:** EBM serves as a powerful educational tool or strategy that allows students and clinicians to become lifelong self-directed learners and information masters able to fill their knowledge gaps and practice high quality medicine.<sup>[8]</sup> It is found that EBM involves undergraduate medical students in their clinical years but it is also evident that most EBM principles can be introduced to Pre and Para clinical medical students to encourage them to think

# ORIGINAL ARTICLE

---

more critically about therapeutic and diagnostic decisions. It may also motivate students to learn more during concurrent pre-clinical courses.<sup>[3]</sup>

The study had a good response rate of 75%. Our results demonstrated that majority of faculties have favorable beliefs and attitude towards teaching EBM in Pre- and Para-clinical years and agreed that learning EBM will help them in future clinical practice. In previous study of cross-sectional survey among dieticians, occupational therapists and physical therapists and found that the dieticians, occupational therapists and physical therapists who participated in this study held positive attitudes towards evidence-based practice.<sup>[9]</sup> General practitioners and specialist university teachers teaching EBM found that a high proportion of clinical teachers were mostly positive and confident about it.<sup>[10]</sup>

Majority of the faculties agreed that literature and research searching improves their day to day teaching and teaching EBM updates their recent clinical knowledge. Moreover they agreed that incorporating research evidence in lecture is beneficial for the students. One systematic review, which included a controlled trial of learning critical appraisal skills, indicates that undergraduate medical students learning of specific skills in EBM may increase their medical knowledge more generally.<sup>[10]</sup> Our study found majority of the faculties from respective departments have a positive response towards usefulness of EBM in their subjects.

In our study lack of time has been shown to be one of the major barriers perceived by faculties concerning teaching EBM followed by next major barrier reported was need for more training in teaching EBM. Studies also found that barriers included antagonism to EBM philosophy are shortage of time and need for training in teaching EBM in occupational therapists and physical therapists.<sup>[10-11]</sup> One way of addressing this issues is may be incorporation of formal teaching and practices at all levels of medical education so faculties get fully acquainted to this way of practice. This problem is also dealt by development of pre-appraised ready to use evidence in the form of guidelines, computer based decision support systems, and creation of systematic reviews and concise summaries.<sup>[10]</sup>

Majority of the faculties felt that though EBM is helpful for students to upgrade their knowledge about recent advances in their subject, negative remarks like lack of time and difficulty of undergraduates for understanding the basic concept cannot be ignored.

**CONCLUSIONS:** Based on the present study, we concluded that Faculties of this University involved in teaching Pre-clinical and Para-clinical medical students recognized EBM as an important component of undergraduate education and agreed that integrating EBM teaching might imply a better clinical practice in the future. This would constitute the cornerstone in lifting EBM in up to the needed standards and would enable medical students in future to become efficient physicians that rely on evidence in their health practice. Lots of work and research in this field will be rewarding.

## REFERENCES:

1. Asha Madhavji. The attitudes, awareness, perceptions and barriers towards Evidence-based practice among orthodontists in the United States.(M.D.S thesis). Faculty of the Graduate School, Saint Louis University, 2010.

# ORIGINAL ARTICLE

2. Abeer Irshad, Musarat Ramzan, Mobeen Iqbal. Assessment of knowledge about evidence based medicine in medical students and doctors in a Pakistani Health care setting. J Ayub Med Coll Abbottabad 2010; 22 (2).
3. Taheri H, Mirmohamadsadeghi M, Adibi I, Ashorion V, Sadeghizade A, Adibi P. Evidence-based medicine (EBM) for undergraduate medical students. Ann Acad Med Singapore.2008 Sep; 37(9):764-8.
4. Eiad A Al-Faris, Hamza M Abdulghani, Norah A Al-Rowais. Teaching Evidence-Based Medicine in a Saudi Medical School: A Pilot Study. Journal of Taibah University medical school. 2007; 2(1-2); 42-47.
5. Tippawan Liabsuetrakul, Thitima Suntharasaj, Boonsin Tangtrakulwanich, Thida Uakritdathikarn, Panumad Pornsawat. Longitudinal Analysis of Integrating Evidence-based Medicine into a Medical Student Curriculum. Fam Med 2009; 41(8): 585-8.
6. www.sumandeeponiversity.co.in. EBES concept in sumandeeponiversity.
7. Linda Z. Nieman, Lee Cheng, Lewis E. Foxhall. Teaching First-year Medical Students to apply Evidence-based Practices to Patient Care. Fam Med 2009; 41(5): 332-6.
8. Scott H. Barnett MD, Lawrence G. Smith. Teaching evidence-based medicine skills to medical students and residents. International Journal of Dermatology, Dec 1999; 38(12): 893-894.
9. Susanne Heiwe et al. Evidence-based practice: attitudes, knowledge and behaviour among allied health care professionals. International Journal for Quality in Health Care 2011; 23(2): 198-209.
10. Klakovic M, Love T, Gilbert A: Attitudes of teachers to evidence based medicine. Aust Fam Physician 2004, 33(5): 376-378.
11. Jette DU, Bacon K, Batty C et al. Evidence-based practice: beliefs, attitudes, knowledge, and behaviors of physical therapists. Phys Ther 2003; 83: 786-805.

## **AUTHORS:**

1. Bhavita Patel
2. Geetanjali Purohit
3. Niraj Pandit

## **PARTICULARS OF CONTRIBUTORS:**

1. Research Scholar, Department of Biochemistry, S.B.K.S Medical Institute, & Research centre.
2. Assistant Professor, Department of Physiology, S.B.K.S Medical Institute, & Research Centre.
3. Professor, Department of Community Medicine, S.B.K.S Medical Institute, & Research Centre.

## **NAME ADDRESS EMAIL ID OF THE CORRESPONDING AUTHOR:**

Bhavita Patel,  
Department of Biochemistry,  
S.B.K.S Medical Institute & Research Centre,  
Sumandeepon Vidyapeetha,  
Piparia, Waghodiya,  
Vadodara-391760.  
E-mail: patel\_bhavita2007@yahoo.co.in

Date of Submission: 07/12/2014.  
Date of Peer Review: 08/12/2014.  
Date of Acceptance: 16/01/2015.  
Date of Publishing: 03/02/2015.