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Assessment of knowledge and perception towards EBM [Evidence based medicine] in pharmacy and medical students in AP

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Abstract

Background: Evidence-Based Medicine (EBM) is a pillar for quality care, patient-centric medicine. This particular study evaluated knowledge, perception, and possible impediments to EBM among the students of Pharm.D and MBBS in Andhra Pradesh.

Methods: A cross-sectional survey was administered to 330 students (192 Pharm.D; 134 MBBS) utilizing a structured questionnaire. Analysis was made descriptively for knowledge, attitude, and barriers.

Results: 62.4% had heard of EBM, whereas only 48.2% considered themselves adequately knowledgeable. On the other hand, it was the Pharm.D students who showed greater familiarity with the EBM and were more aware of its being taught in their classroom compared to MBBS students. More than 97% of respondents agreed that EBM should be practiced clinically, considering a positive perception of EBM. And, limited time and practical skills were listed as causes of these great barriers despite decent internet availability and institutional support.

Conclusion: Despite positive attitudes, gaps in training and curriculum hinder effective EBM implementation. Educational interventions are needed to strengthen EBM competency among students.

Keywords: Evidence-Based Medicine, Pharm.D, MBBS, Knowledge, Perception, Barriers, Clinical Education, India.

Introduction

Evidence-Based Medicine (EBM) is a systematic approach in medicine. The aim of EBM is to combine the best available evidence with the clinical expertise of the health worker and the patient's values. Modern-day healthcare aims at improving patient outcomes, enhancing clinical decision-making, and how to use healthcare resources to maximize its utilization. Practice of EBM involves critical appraisal of the literature, application of the relevant evidence to the care of patients, and changing one's current knowledge state as new research has appeared.[1,2]

In India, though EBM is slowly gaining importance in healthcare delivery, its integration into undergraduate health sciences education appears inconsistent. Many students, particularly in MBBS and Pharm.D programs, would be deprived of formal training in critical appraisal of research or hands-on experience in the application of evidence in clinical practice. This results in a knowledge gap and low confidence in EBM use while practicing; ironically, despite the ample ICT resources and evidence databases at their disposal.[3,4]

With training in EBM knowledge, attitude, and applications, health sciences students can become better practitioners in clinical practice. Positive student perception or willingness to learn is highly essential, but inappropriate preparation may rob them of knowledge and skills regarding the theory and practice of EBM. Hence, assessment is necessary of their knowledge, attitude, and perceived barriers so educators and policymakers may develop effective strategies for educating students about EBM, considering student need.[5,6]

Thus, this study attempts to know the knowledge, perception, and probable barriers that feed into EBM among undergraduate Pharm.D and MBBS students of Andhra Pradesh. The data gathered from this study will help academic institutions in concert with curriculum developers to identify what gaps exist at the undergraduate level with an eye toward addressing these gaps in enhancing EBM competencies so future practitioners can confidently step forward into evidence-informed care.[7,8]

Methodology

Study Design

This research was conducted as a cross-sectional, questionnaire-based, non-randomized controlled study designed to evaluate the knowledge, perception, and barriers toward Evidence-Based Medicine (EBM) among undergraduate pharmacy and medical students in Andhra Pradesh, India. The study aimed to collect quantitative data reflecting students' familiarity and opinions about EBM practices.

Study Setting and Duration

The study was carried out across 25 pharmacy and medical colleges in Andhra Pradesh over a period of three months, from January to March 2023. The data collection was executed using a structured Google Form survey, which allowed for wide digital distribution and easy access for the participants.

Study Population and Eligibility Criteria

The target population included students enrolled in Pharm.D (Doctor of Pharmacy) and MBBS (Bachelor of Medicine and Bachelor of Surgery) programs.

Sampling and Sample Size

A convenience sampling technique was used due to the voluntary nature of participation. The survey reached approximately 500 students, of which 330 students responded completely, yielding a 66% response rate. This sample size was considered adequate for descriptive analysis, although no formal power calculation was performed.

Ethical Considerations

Ethical approval for the study was granted by the Institutional Ethics Committee (IEC) of GayatriVidyaParishad Institute of Health Care

and Medical, Visakhapatnam. Participation was entirely voluntary and anonymous, with informed consent embedded in the first section of the questionnaire. The survey did not collect any personal identifiers, ensuring full confidentiality of responses.

Questionnaire Design and Validation

The questionnaire used in this study was self-designed and structured, based on literature review and expert consultations. It comprised six main sections:

1. **Demographics:** Age, gender, academic year, course, and college.
2. **Basic Knowledge about EBM:** Awareness of EBM, exposure in curriculum, prior reading of EBM articles.
3. **Concept Familiarity:** Definitions, steps, merits, and understanding of EBM.
4. **Perception:** Assessed using a 4-point Likert scale on items such as EBM's value in clinical decision-making, patient care, and workload reduction.
5. **Barriers:** Evaluated obstacles like limited time, internet/library access, and institutional support.
6. **Suggestions:** Open-ended section for participant feedback and recommendations.

The questionnaire was validated for content and face validity by five academic and clinical experts. A pilot test was conducted with 10 students to assess clarity and comprehension. Feedback was used to revise the wording and improve reliability.

Data Collection Procedure

The validated questionnaire was converted into a Google Form and circulated electronically through institutional WhatsApp groups, faculty coordinators, and student emails. Duplicate responses were prevented through Google Form settings. No incentives were offered to participants. Regular reminders were sent biweekly to increase the response rate.

Data Analysis

Collected data were exported into Microsoft Excel and analyzed using GraphPad Prism version 5.0. Descriptive statistics were used to summarize the responses, and results were presented as frequencies and percentages. Although comparative analysis between MBBS and Pharm.D students was noted, no inferential statistics (such as chi-square or t-tests) were applied due to the non-randomized nature of sampling and disproportionate group sizes.

Strengths and Limitations

This study is among the first to evaluate EBM-related awareness among medical and pharmacy students in Andhra Pradesh. Strengths include a relatively large sample size and validated questionnaire. However, limitations include the self-reported nature of the data, potential response bias, and the regional limitation of the sample, which may affect generalizability to other states or countries.

Results

Table 1: Demographic Characteristics of Respondents (n = 330)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	90	27.3%
	Female	240	72.7%
Course	Pharm.D	192	58.2%
	MBBS	134	40.6%
	Others	4	1.2%
Response Rate	Total	330 / 500	66.0%

The survey had 330 actual responses out of the targeted 500, giving it a response rate of 66%. Most of the participants were female (72.7%), with their male counterparts making up 27.3% of the respondents. Whereas 58.2% of the students were Pharm.D students, 40.6% were MBBS students. This gender ratio and representation of disciplines follow the general enrollment trend in health science programs in Andhra Pradesh.

Table 2: Basic Knowledge of Respondents about EBM

Question	Response	MBBS (n=134)	Pharm.D (n=192)	Total (n=330)	% Total
Have you heard of EBM?	Yes	93	113	206	62.4%
	No	41	83	124	37.6%
Do you have knowledge about EBM?	Yes	23	136	159	48.2%
	No	111	56	167	51.8%
Is EBM discussed in your class?	Yes	26	133	159	48.2%
	No	108	59	167	51.8%
Is EBM present in your curriculum?	Yes	34	116	150	45.5%
	No	100	76	176	54.5%
Interested in learning EBM?	Yes	--	--	265	80.3%
	No	--	--	65	19.7%
Understood the concept of EBM after explanation?	Yes	--	--	309	93.6%
	No	--	--	21	6.4%

Around 62.4% of the total participants said they had heard of Evidence-Based Medicine (EBM), with a higher number of Pharm.D students (33.9%) claiming to be aware of it as compared to 28.2% of MBBS students. Regarding knowledge, 48.2% of students said they knew something about EBM, and this was significantly higher in Pharm.D students (40.8%) than in MBBS students (6.9%). Yet, 51.8% state their knowledge is insufficient. Additionally, slightly less than half (45.5%) acknowledged that EBM formed part of their curriculum, and 48.2% noted that EBM was discussed in classes. Most encouragingly, 80.3% wished to learn about EBM, whereas 93.6% felt that they understood the EBM concept after reading the brief explanation in the survey. These results reveal a general enthusiasm for EBM, particularly on the part of pharmacy students, but there is a curricular gap and awareness gap felt more strongly among medical students.

Table 3: Perception of Respondents Toward EBM (n = 330)

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
Do you support EBM?	134 (44.6%)	192 (58.2%)	3 (0.9%)	0 (0%)
EBM improves patient care	126 (38.2%)	201 (60.9%)	1 (0.3%)	2 (0.6%)
EBM reduces the workload	69 (20.9%)	244 (73.9%)	17 (5.2%)	0 (0%)
Can you implement EBM in your clinical practice?	87 (26.4%)	239 (72.4%)	3 (0.9%)	0 (0%)
Role of EBM in clinical decision-making	86 (26.1%)	239 (72.4%)	5 (1.5%)	2 (0.6%)
Managing patients based on EBM	82 (24.8%)	241 (73%)	7 (2.1%)	0 (0%)
Application of EBM in pharmacy	96 (29.1%)	225 (68.2%)	9 (2.7%)	0 (0%)
Sufficient skills to implement EBM	52 (15.8%)	238 (72.1%)	36 (10.8%)	4 (1.2%)
Need to increase EBM use in daily practice	155 (47%)	167 (50.6%)	8 (2.4%)	0 (0%)

Table 3 presents the respondents' perceptions of Evidence-Based Medicine (EBM), which were overwhelmingly positive. A total of 97.9% of students either agreed or strongly agreed to support EBM, whereas only 0.9% went against it. Most participants opined that EBM enhanced patient care (99.1%) and decreased workload (94.8%). Regarding the application of EBM in clinical practice, 98.8% of students were confident about its implementation, and 98.5% felt it should be used in clinical decision-making. Additionally, 97.8% stated that EBM serves as assistance in managing patients, whereas 97.3% regarded it as relevant to pharmacy. While a majority (87.9%) felt that they had enough skills to implement EBM, 12% were not so confident. An overwhelming agreement (97.6%) called for the greater application of EBM in daily clinical practice. These findings not only point toward a highly positive perception about EBM but also affirm the need to promote skill-building efforts for the actual application.

Table 4: Perceived Barriers to Practicing Evidence-Based Medicine (n = 330)

Barrier / Question	Strongly Yes (n/%)	Yes(n/%)	No(n/%)	Hardly No(n/%)
Do you have time to practice EBM in your clinical practice?	35 (10.6%)	171 (51.8%)	121 (36.7%)	3 (0.9%)
Do you have time to read research papers about EBM?	35 (10.6%)	213 (64.5%)	79 (23.9%)	3 (0.9%)
Do you have access to internet to practice EBM?	53 (16.1%)	208 (63.0%)	68 (20.6%)	1 (0.3%)
Does your organization support the practice of EBM?	48 (14.5%)	238 (72.1%)	44 (13.3%)	0 (0.0%)

Several barriers are observed against the practice of Evidence-Based Medicine (EBM) among students. Slightly more than half (51.8%) declared having time for practicing EBM; however, 36.7% revealed constraints of time. Likewise, 64.5% declared having time for reading EBM research, and 23.9% did not share that view. Most of the informants considered internet access sufficient, with 63% answering "Yes" and 16.1% answering "Strongly Yes," but there was still 20.6% deprived of reliable access. Of note was the finding that 13.3% felt unsupported in practicing EBM by their organizations, and they stood in contrast with the 72.1% who felt supported. The above findings reflect the scenarios in which both institutional and technological support are existent. However, the greatest barrier consists of time. The time factor must, therefore, be addressed with the utmost concern if more practitioners of EBM are to be encouraged.

Discussion

The study investigated the Knowledge, Perceptions, and Perceived Barriers toward Evidence-Based Medicine (EBM) among undergraduate Pharm.D and MBBS students in Andhra Pradesh. With a response rate of 66%, these results provide significant insights into and probably into the current status of EBM education and awareness.

The demographic distribution reflects the current trend in healthcare education, with female students (72.7%) forming a larger proportion of the cohort, consistent with broader gender patterns observed in health sciences. The study population included a larger representation of Pharm.D students (58.2%) compared to MBBS (40.6%), which may have influenced the observed differences in EBM familiarity and perceptions.

In terms of knowledge, although 62.4% of students had heard of EBM, deeper insights revealed a significant disparity between disciplines. Pharm.D students demonstrated higher familiarity (33.9%) and self-reported knowledge (40.8%) compared to MBBS students (28.2% and 6.9%, respectively). This indicates that pharmacy curricula might offer more structured exposure to EBM principles, possibly through pharmacotherapeutics and clinical pharmacy coursework. Conversely, only 45.5% of all respondents reported EBM as a part of their formal curriculum, and just under half (48.2%) said it was discussed in class—highlighting missed opportunities for institutional integration. Despite this, the high proportion of students expressing interest in learning EBM (80.3%) and understanding it after explanation (93.6%) demonstrates enthusiasm and capacity for future uptake, given the right curricular support.

Student perceptions of EBM were overwhelmingly positive. A significant majority (97.9%) supported the concept, and 99.1% believed it improves patient care. The belief that EBM can reduce workload (94.8%) and be implemented in clinical settings (98.8%) further emphasizes the acceptability and perceived utility of EBM. Respondents also acknowledged EBM's role in clinical decision-making (98.5%) and pharmacy practice (97.3%). However, while 87.9% felt they had sufficient skills to implement EBM, only 15.8% strongly agreed with this statement. This gap between perception and confidence underscores the importance of targeted skills-based training, such as critical appraisal workshops, case-based evidence application, and access to scientific databases.

When examining barriers, although 62.4% of respondents felt they had time to practice EBM and 64.5% had time to read literature, a substantial portion still cited time limitations as a barrier. Internet access was relatively high (79.1%), and 86.6% believed their institution supported EBM practice. These findings highlight that technological and organizational infrastructure is not the limiting factor; instead, personal time management and curriculum alignment may be more significant challenges. The data suggest that improving schedule flexibility, increasing research literacy hours, and embedding EBM tasks into clinical rotations could alleviate these constraints.

Overall, the results emphasize that while awareness and positive attitudes toward EBM are strong, especially among Pharm.D students, the practical implementation is limited by skill gaps, time constraints, and curricular inconsistencies—particularly in MBBS programs. Addressing these issues through institutional reform, focused workshops, and integrated teaching models can significantly enhance the effective adoption of EBM in clinical practice.

Conclusion

This study highlights a fair level of knowledge and a strong positive perception toward Evidence-Based Medicine (EBM) among Pharm.D and MBBS students in Andhra Pradesh. While majority of students are aware of EBM and want to learn more, there are still tremendous gaps in curriculum planning, classroom discussions, and practical application of the concept, especially for MBBS students. A convenient time to learn the Evidence-Based Medicine concept and a lack of emphasis on clinical appraisal skill were identified as barriers to its implementation. Positively, most respondents were able to understand the meaning of EBM after it was explained and supported its incorporation in clinical practice. These results certainly indicate the urgent requirements for the formal introduction of EBM into undergraduate health curricula through lectures, journal clubs, and practical exposure to clinical evidence appraisal. Increasing research literacy and providing dedicated training modules on EBM will surely enable future healthcare practitioners to use evidence-based approaches, thereby assuring better patient outcomes and streamlined, quality medical practice.

References

1. Prabath I, Xaviar S, Navabalan V, Mathaiyan J. A cross-sectional study evaluating the knowledge, attitude, and practice of evidence-based medicine among resident doctors of a health-care Institution of National Importance in India. Perspect Clin Res. 2023 Oct-Dec;14(4):172-179.
2. Vijaya Bhaskar Erla, Niharika Veldurthi, Nikitha Preethi Neeruganti, Mohanraj Rathinavelu (2023). Evidence - Based Practice among Community Pharmacists and Pharmacy Students in South India. Biological Forum – An International Journal, 15(2): 394-398.
3. Bloch, R. M., Swanson, M. S., &Hannis, M. D. (1997). An extended evidence-based medicine curriculum for medical students. Academic medicine: journal of the Association of American Medical Colleges, 72(5), 431– 432
4. Dorsch, J. L., Aiyer, M. K., & Meyer, L. E. (2004). Impact of an evidence-based medicine curriculum on medical students' attitudes and skills. Journal of the Medical Library Association: JMLA, 92(4), 397–406
5. Abeysena C, Jayawardana P, Wickremasinghe R, Wickramasinghe U. Evidence-based medicine knowledge, attitudes, and practices among doctors in Sri Lanka. J Evid Based Med. 2010;3:83–7.
6. Ahmad Ghaus MG, Tuan Kamauzaman TH, Norhayati MN. Knowledge, attitude, and practice of evidence-based medicine among emergency doctors in Kelantan, Malaysia. Int J Environ Res Public Health. 2021;18:11297
7. Ambulkar R, Ranganathan P, Karthik V, Divatia J. Evidence-based medicine: A survey among perioperative health care professionals in India. J Anaesthesiol Clin Pharmacol. 2017 Oct-Dec;33(4):487-492.

8. Hasabo EA, Elnaiem W, Ali AY, Altahir AM, Hsabo EA, Ibrahim MI, Modathir DM, Aljaaly RT, ElSiddig MM, Abdalbagi SM, Awadalla H. Evidence-based medicine (EBM) for undergraduate medical students in Sudan: sources of information, knowledge about terms, skills related to EBM and attitude toward EBM in Sudan. BMC Med Educ. 2021 Sep 4;21(1):470.

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