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ต่อการศึกษาแพทยศาสตร์ที่อิงหลักฐานเชิงประจักษ์

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PERCEPTION OF TEACHERS ON EVIDENCE BASED MEDICAL EDUCATION (EBME) OF
DIFFERENT MEDICAL COLLEGES IN BANGLADESH

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เบื้องหลัง จากการประชุมองค์การอนามัยโลกภูมิภาคเอเชียอาคเนย์มีข้อเสนอว่า “การศึกษาและการฝึกอบรมวิทยาศาสตร์สุขภาพในภาคพื้นเอเชียอาคเนย์จำเป็นต้องเป็นการอิงหลักฐานเชิงประจักษ์”

วัตถุประสงค์ เพื่อประเมินการรับรู้ของครูในโรงเรียนแพทย์ต่างๆในบังคลาเทศต่อแพทยศาสตร์ศึกษาที่อิงหลักฐานเชิงประจักษ์

รูปแบบการวิจัย ชนิดพรรณนาภาคตัดขวาง

กลุ่มประชากรที่ศึกษา ครูในโรงเรียนแพทย์รัฐบาล 4 แห่ง เอกชน 4 แห่งในบังคลาเทศ

ขนาดตัวอย่าง 172 คน

เครื่องมือวิจัย แบบสอบถามให้กรอก

ผล ผู้ตอบส่วนใหญ่อายุ 31-40 ปี (45.9%) ชาย 102 (59.3%) หญิง 70 (40.7%) อยู่ในโรงเรียนแพทย์รัฐบาลเท่ากับในเอกชน (86) ระยะเวลาที่สอนตั้งแต่ 1 ถึงมากกว่า 20 ปี เอกชนจะสามารถเข้าถึงแหล่งของหลักฐานได้มากกว่ารัฐบาล ส่วนใหญ่เห็นด้วยว่าการส่งเสริมแพทยศาสตร์ศึกษาอิงหลักฐานจะทำให้การพัฒนาวิชาชีพดีขึ้นและผู้ป่วยมีความพอใจมากขึ้น ครูเอกชนมีเจตคติต่อการศึกษาศาสตร์ศึกษาและต่อนโยบายที่ดีกว่ารัฐบาลอย่างมีนัยสำคัญทางสถิติ ($p < .001$) แต่ไม่ต่างกันต่อด้านวิชาชีพ ($p = .08$) แม้ว่าการเข้าถึงแหล่งหลักฐานจะน้อยแต่ก็มีเจตคติที่ดีต่อแพทยศาสตร์ศึกษาอิงหลักฐาน ($p < .001$) มีความเห็นแตกต่างกันระหว่างเอกชนและรัฐบาล ($p < .0001$) ต่อวิธีที่เปลี่ยนไปเป็นแพทยศาสตร์ศึกษาอิงหลักฐาน แต่ส่วนใหญ่เห็นว่าควรใช้วิธีแนะนำแนวปฏิบัติในการเปลี่ยนแปลง ส่วนใหญ่ 115 (66.9%) จะตระหนักต่อวารสารทางด้านวิชาชีพแพทย์ แต่ 108 (62.8%) ไม่ค่อยตระหนักต่อวารสารทางด้านแพทยศาสตร์ศึกษา ทางด้านความเข้าใจ 47 (27.3%) ไม่สามารถอธิบายคำศัพท์เทคนิคทางแพทยศาสตร์ศึกษาอิงหลักฐานที่ยกตัวอย่างมาได้เลย 95 (55.2%) สามารถอธิบายได้อย่างน้อยหนึ่งคำ เพียง 30 (17.4%) ที่สามารถอธิบายคำศัพท์ที่ยกตัวอย่างมาได้หมด และก็แตกต่างกันระหว่างเอกชนและรัฐบาลอย่างมีนัยสำคัญ ($p < .001$) การศึกษาหลังปริญญา ระยะเวลาที่สอน การเข้าถึงแหล่งหลักฐาน เหล่านี้เป็นปัจจัยที่มีผลต่อการรับรู้อย่างมีนัยสำคัญทางสถิติ ($p < .0005$)

อภิปราย การศึกษาทำนองเดียวกันนี้ที่สกอตแลนด์และตีพิมพ์ในวารสารเวชศาสตร์อังกฤษ พ.ศ.2541 ก็พบว่าผู้ตอบมีเจตคติที่ดีมากต่อเวชปฏิบัติที่อิงหลักฐาน แต่จะตระหนักและเข้าใจน้อยทางด้านคำศัพท์ ซึ่งก็เหมือนกับการศึกษานี้ และก็เหมือนกันในแง่การเปลี่ยนจากแบบเดิมเป็นแพทยศาสตร์ศึกษาอิงหลักฐานควรใช้การแนะนำแนวปฏิบัติ

สรุป จากการศึกษาพบว่า การรับรู้ของครูต่อแพทยศาสตร์ศึกษาอิงหลักฐานอยู่ในเกณฑ์เฉลี่ย โดยครูเอกชนมีการรับรู้ดีกว่าครูรัฐบาลอย่างมีนัยสำคัญทางสถิติ การปฏิบัติงานในโรงเรียนแพทย์ ระยะเวลาที่สอน การได้ศึกษาฝึกอบรมหลังปริญญา และการเข้าถึงแหล่งของหลักฐาน เหล่านี้เป็นปัจจัยที่มีผลต่อมิติต่างๆของการรับรู้ เช่นด้านเจตคติ ด้านความคิดเห็น ด้านความตระหนัก และด้านความเข้าใจ อย่างมีนัยสำคัญทางสถิติ และแตกต่างกันระหว่างครูเอกชน และรัฐบาลอย่างมีนัยสำคัญทางสถิติเช่นกัน

437 54294 30, MAJOR: HEALTH PROFESSIONS EDUCATION

KEY WORDS: PERCEPTION, TEACHER, EVIDENCE BASED MEDICAL EDUCATION.
MR.MD. HUMAYUN KABIR TALUKDER: PERCEPTION OF TEACHERS
ON EVIDENCE BASED MEDICAL EDUCATION (EBME) OF
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CO-ADVISOR: ASSISTANT PROF. SOMRAT LERTMAHARIT.
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Background: The theme of the WHO SEAR meeting in the year 2000 was “ Health Science
Education and Training Practice in SEAR Needs to be Evidence-Based”

Objective: To assess the perception of teachers on evidence based medical education(EBME) of
different medical colleges in Bangladesh.

Research Design: Cross-sectional, Descriptive type.

Study Population: All the teachers of 4 government and 4 private medical colleges in Bangladesh

Sample Size: 172

Research Tool: Self-administered structured questionnaire

Result: Study revealed that a large proportion of the total respondents are very much in favour of
promotion of EBME. A similar opinion is held by a large proportion of their colleagues. The
attitude of the respondents towards EBME associated objectives when evaluated shows that a
large proportion of the respondents support and belief that EBME implementation will improve
doctors competence, improve patient’s care, enhance patient’s satisfaction, develop
professionalism, promote continue professional development. Respondents in favour of EBME
disagree with that teachers do not have to take care of the whole process of EBME and also
disagree with that policy makers need not to be aware of EBME. The opinion about shifting from
traditional to evidence based medical education is supported by a large percentage of the total
respondents, among whom greater number prefers using evidence based practice guidelines
developed by others than learning the skill of EBME. The awareness about the resources
available (Journals of both national and international) varies. Certain journals are more frequently
read or read and used in one’s own professional’s work to greater extent than other journals. The
journals are more frequently preferred are BMJ, Lancet, Journal of BMRC and Journal of BMA.
The level of understanding of the technical terms which are usually used in EBME associated
with various research papers and scientific works comprehended to different levels by the
respondents.

Lack of well equipped library systems, e-library, database, availability of journals, e-journal,
computer literacy, availability of computer facility, availability of internet access, education on
research methodology, bio-statistics, lack of accountability and transparency, lack of educational
research activities have been identified as the major barriers to practice EBME in Bangladesh and
overcoming of these barriers are suggested as the ways and means for implementation and
practice of EBME in Bangladesh.

Conclusion: Study revealed that the perception of teachers on EBME is average and there is
difference in perception between government and private medical college teachers. Age, working
medical college, duration of teaching, having post graduation and access to evidence are
identified as the factors which have effect on perception.

Program: Health Development
Field of Study: Health Professions Education
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Student’s signature:.....
Advisor’s signature:.....

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สถาบันวิทยบริการ
จุฬาลงกรณ์มหาวิทยาลัย

CHAPTER 1

BACKGROUND AND RATIONALE

Throughout the world, particularly since the mid 1980s, the “winds of change” have been blowing in medical education. Changes in society, demography, health care organization, patients’ expectations and developments in medical technology demand re-orientation of medical education and training to meet the health needs of the population and to prepare medical students for the twenty-first century.

Brief History of Medical Education in Bangladesh :

The history of medical education in Bangladesh is similar to any other developing country of the world. The medical education system inherited the typical features of colonial education and is still practicing these with little modifications.

Reorientation of Medical Education in Bangladesh :

To make the medical education need-based and community-oriented, a re-orientation of medical education movement started in Bangladesh in the early 1980s (Mollah & Thwe, 1996). To promote this concept, the Centre for Medical Education (CME) was set up in Dhaka in 1983 by an UNDP-funded Project. A community-oriented and competency-based curriculum was developed for undergraduates in 1988 and is being implemented in all medical colleges, both government and private, of the country. This is the first scientifically developed curriculum in the country with the active involvement of the medical teachers.

In 1992, the Further Improvement of Medical College (FIMC) Project was set up under the Fourth Health and Population Project in order to re-orient and strengthen medical education in the country. Under this project more than 100 teachers of different medical colleges of Bangladesh completed their post graduate Diploma, Masters & PhD on Medical Education from Dundee university

of England and New South Wales University of Australia. But evaluations of the present training programme show that problems exist (Anwar *et. al.*, 1995; Bhuyia, 1995; Rahman, 1996; Raushan *et. al.*, 1996; Huq & Mashreky, 1997)¹.

“Recently, a survey conducted by ‘Democracy Watch’ doctors has been found to be deficient in many important qualities. They have been given a low rating in- sincerity, friendliness and service- orientation. The worst trait of the doctors according to the survey is, by the way, arrogance.” (Editorial, The Bangladesh Observer, May, 1998)

“I have virtually learnt nothing doing my six years graduation at Dhaka Medical College” – Ex-student of Dhaka Medical College in the conference of (Career Opportunities and Challenges in the Medical Profession: Young Doctors Speak Out ‘, 1999)

“Healthcare in a shambles: In a country where public sector healthcare services are in a shambles, private clinics have been the last bastion of hope of Medical seekers. Unfortunately, they are in no better condition either. The Directorate of Health and the BMDC must recognize the grim reality” (The Daily Star, Sept 23, 1999)

These phrases speak for themselves of the desperate need of improvement in quality of medical education and health care service delivery in Bangladesh. Recently, public expectations of medicine have increased, the quality of medical care itself is under scrutiny, and there is a general perception that competence and compassion of average doctors is on the decline. Medical education should provide: relevant core knowledge, clinical skills, problem solving skills, ethical commitment, understanding of the value of self regulation, communication abilities, the skills to evaluate innovations and a grasp of management. Medical education, training and continuing professional development should be viewed as a continuum and ongoing professional obligation. Continuing professional development should be an integral part of a doctor’s career to keep him up to date². For this evidence based medical education (EBME) is the best way to prepare the ‘ tomorrow’s doctors’ to be competent, confident, knowledgeable with problem solving ability with corporate responsibility and good communication skill for the utmost satisfaction of the consumers. Considering the importance, utility and time demand of

evidence based medical education (EBME), World Health Organisation (WHO) of The South East Asia Regional (SEAR) meeting on Medical Education was held on 21st and 22nd February, 2000 at Dhaka Bangladesh, organised by Centre for Medical

Education(CME), Dhaka in collaboration with World Health Organisation (WHO) , Bangladesh as a component of ICP3 activity within the biennial plan of action with the theme - “ **Health Science Education and Training Practice in SEAR Needs to be Evidence Based**”³

So as a signatory of the decision of that meeting of WHO SEAR , Bangladesh is thinking for re-designing it's medical education to make it evidence based. So before final planning to implement it, it is very essential to see the level of perception of the teachers of different medical colleges, opinion of the policy makers and stakeholders. As to re-design the medical education in Bangladesh multi-factors are related. For this at the beginning it is very important firstly to see the level of perception of the teachers of different medical colleges about evidence based medical education (EBME) , as the teachers of different medical colleges are the first line executive personnel for implementing any program. So from the finding of this present study we will get the guidelines, ways and means in Bangladesh context, how we can go forward as a signatory of WHO, SEAR meetings on evidence based medical education to implement it in Bangladesh. It is also necessary to see the perception of the stakeholders about it and lastly the findings can be discussed with the policy makers with the facts and findings of reality to think for evidence based medical education (EBME) to make the plan more appropriate, justifiable and realistic. It will facilitate the practice of evidence based medical education (EBME) in Bangladesh at reality to produce confident and competent doctor for better medical care and service with a attitude or urge for continuing professional development. It is the first step to see the teacher's perception on evidence based medical education (EBME) of different medical colleges for planing, policy making, developing training program and creating scope to facilitate the practice of evidence based medical education (EBME) in Bangladesh at reality.

CHAPTER 2

LITERATURE REVIEW

Basic Information on EBME:

History of EBM:

“The term evidence based medicine” was coined at McMaster Medical School in Canada in the 1980s to label the clinical learning strategy, which people at the school had been developing for over a decade.

What is Evidence Based Medical Education ?

Evidence based medicine is the process of systematically finding, appraising, and using contemporaneous research findings as the basis for clinical decision⁴.

Evidence based medical education is all about appropriate curricula, teaching methods, learning techniques, learning environments, the students and the teachers themselves. It is also about quality. The essential evidence is obtained from talking to both patients and professionals, inquiring about satisfaction and expectations, observing the outcomes and not just the outputs⁵.

Best evidence medical education (BEME) is an attempt to examine systematically the quality of the evidence available to address educational issues, using six dimensions: quality, utility, extent, strength, largest and setting⁶.

Four Steps of Evidence Based Medicine:

1. Setting the question – Formulate a clear clinical question from a patient’s problem.
2. Finding the evidence – Search the literature for relevant clinical articles.
3. Appraising the evidence – Evaluate (critically appraise) the evidence for its validity and usefulness
4. Acting on the evidence – Implement useful findings in clinical practice

Other Requirements for Practicing EBME:

Following the above four steps other requirements for practicing evidence based medicine are –

Clear data presentation: The ability to present published evidence quickly and clearly is crucial for clinical teams with little time and much information to absorb.

Senior support: Support from senior clinicians is critical to the success of introducing evidence-based medicine⁴.

Why EBME? :

- a. New types of evidence are now being generated which, when we know and understand them, create frequent, major changes in the way that we care for our patients.
- b. It is increasingly clear that, although we need (and our patients would benefit from) this new evidence daily, we usually fail to get it.
- c. And as a result of the foregoing, both our up-to-date knowledge and our clinical performance deteriorate with time.
- d. Trying to overcome this clinical entropy through traditional continuing medical education programs doesn't improve our clinical performance.
- e. A different approach to clinical learning has been shown to keep its practitioners up to date⁷

Advantage of Evidence based Medicine:

- a. An immediate attraction of evidence based medicine is that it integrates medical education with clinical practice.
- b. Evidence based medicine can be learnt by people from different backgrounds and at any stage in their careers. Medical students carrying out critical appraisals not only learn evidence-based medicine for themselves but also contribute their appraisals to their teams and update their colleagues.
- c. Third attraction of evidence based medicine is its potential for improving continuity and uniformity of care through the common approaches and guidelines developed by its practitioners.

- d. Evidence based medicine can help providers make better use of limited resources by enabling them to evaluate clinical effectiveness of treatments and services.

Disadvantages of Evidence Based Medicine:

1. It takes time both to learn and practice.
2. Establishing the infrastructure for practicing evidence based medicine cost money. Hospitals and general practices may need to buy and maintain the necessary computer hardware and software.
3. Inevitably, evidence based medicine exposes gaps in the evidence⁴.
4. Another problem is that Medline and other electronics databases uses for finding relevant evidence are not comprehensive and are not always well indexed. At times even a lengthy literature search is fruitless.
5. For some older doctors the computer skills needed for using databases regularly may also seem daunting.

Although the evidence based approach requires a minimum of computer literacy and key board skills, and while these are now almost universal among medical students and junior doctors, many older doctors are still unfamiliar with computers and databases. On the other hand, creative and systematic searching techniques are increasingly available,^{8,9} and high quality review articles are becoming abundant.

Finally, authoritarian clinicians may see evidence based medicine as a threat. It may cause them to lose face by sometimes exposing their current practice as obsolete or occasionally even dangerous. At times it will later the dynamics of the team, removing hierarchical distinctions that are based on seniority; some will rue the day when a junior member of the team, by conducting a search and critical appraisal, has as much authority and respect as the team's most senior member⁴.

Study revealed that respondents mainly welcomed evidence-based medicine and agreed that it's practice improves patient care. They had a low level of awareness of extracting journals, review publications, and database and even if aware, many did not use them. Only 20% had access to bibliographic database and 17% to the world wide web. Most had some understanding of the technical terms used. The major perceived barrier to

practice evidence based medicine was lack of personal time. Respondents thought the most appropriate way to move towards evidence based medicine was by using evidence guidelines or proposal developed by colleagues¹⁰.

Evidence-based medicine (EBM) is becoming an accepted educational paradigm in medical education at a variety of levels. It focuses on identifying the best evidence for medical decision making and applying that evidence to patient care¹¹. Evidence-based medicine (EBM) is an important new paradigm of the medical profession¹². Evidence-based medicine (EBM) has already had a profound effect on both medical education and clinical practice. Evidence-based medicine (EBM) has rapidly become an integral part of medical training. The impact of EBM on medical education, and ultimately on practice, has already been significant¹³. To provide optimal care for their patients, clinicians must be able to locate and interpret the most current literature. Evidence-based medicine (EBM), which consists of formulating clinical questions, retrieving and evaluating the evidence from the literature, and applying the obtained information to the clinical problem at hand, has gained wide acceptance as an important strategy to meet these challenges¹⁴.



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CHAPTER 3

RESEARCH METHODOLOGY

3.1 Primary Research Question:

How do teachers of different medical colleges in Bangladesh perceive about evidence based medical education (EBME)?

3.2 Secondary Research Questions:

- What are the factors which influence the perception of teachers on evidence based medical education of different medical colleges in Bangladesh?
- What is the difference between the perception of teachers on evidence based medical education of different medical colleges in Bangladesh?

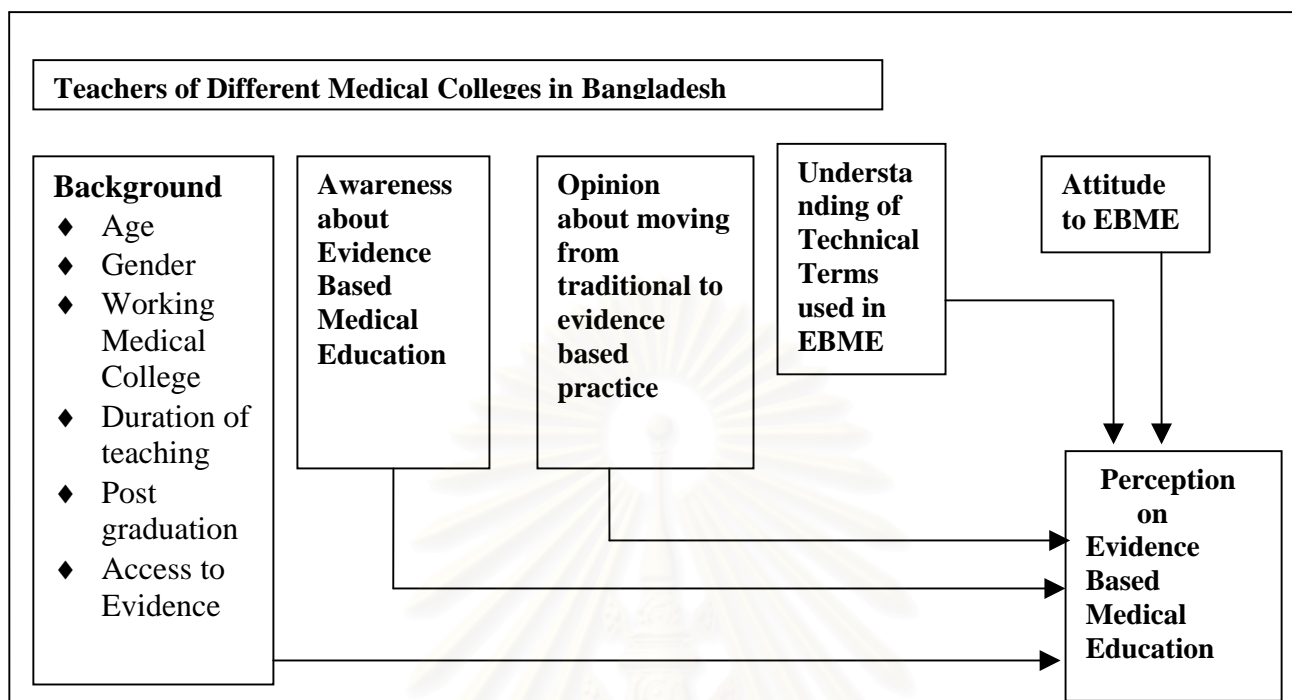
3.3 General Objective:

To assess the perception of teachers on evidence based medical education (EBME) of different medical colleges in Bangladesh.

3.4 Specific Objectives :

- To identify the factors which influence the perception of teachers on evidence based medical education (EBME) of different medical colleges in Bangladesh.
- To determine the difference between the perception of teachers on evidence based medical education (EBME) of public and private medical colleges in Bangladesh.

3.5 Conceptual Frame Work:



3.6 Assumption:

The perception of teachers on evidence based medical education (EBME) is as a whole low and will vary in different medical colleges of Bangladesh, and also will vary in teachers' background.

3.7 Key Word:

Perception, Evidence-based Medical education, Teacher.

3.8 Operational Definition:

Perception: Attitude towards EBME, opinion about moving from traditional to evidence based practice, awareness about EBME and understanding of technical terms used in EBME are considered as the components of perception¹⁰.

Teacher: The graduate doctor who is involved at-least one year in the teaching profession in different medical colleges in Bangladesh.

EBME: Evidence based medical education is all about appropriate curricula, teaching methods, learning techniques, learning environments, the students and the teachers themselves. It is also about quality. The essential evidence is obtained from talking to both patients and professionals, inquiring about satisfaction and expectations, observing the outcomes and not just the outputs⁵.

3.9 Research Design:

It is a Cross-sectional, Descriptive study.

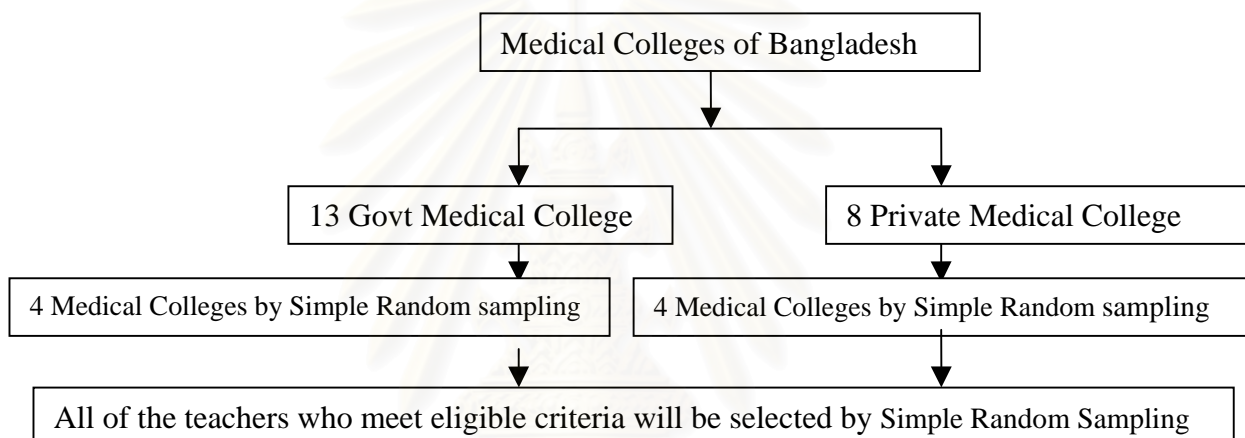
3.10 Target Population:

The teachers of all medical colleges in Bangladesh.

3.11 Study Population:

All the teachers of 4 Government medical colleges(Dhaka, Sir- Salimullaha, Chittagong, Sylhet) and 4 private medical colleges (Bangladesh, ZH Sikder, Uttara, National) of Bangladesh.

3.12 Sampling Scheme:



3.13 Sample Size:

The formula for calculating sample size depends on the types of outcome (dependant variable), the design of the study and the results of the previous study. As there is no such type of study conducted in Bangladesh previously. So this is said to be a pilot study first of it's kind. As the finite population correction can not be disregarded, so sample size can be calculated by using the following formula²⁹:

$$n = \frac{z^2_{\alpha} p (1 - p) N}{d^2 (N - 1) + z^2_{\alpha} p (1 - p)}$$

here---- n = desired sample size

z = the reliability coefficient at the 95% CI = 1.96

P = proportion of perception = 50% = 0.5

(as it will give the maximum sample size)

d = absolute precision of the study assumed 0.07 (acceptable error)

(About 15% of P)

$$\text{So, } n = \frac{(1.96)^2 \cdot 0.5 \cdot (1 - 0.5) \cdot 1400}{(0.07)^2 \cdot (1400 - 1) + (1.96)^2 \cdot 0.5 \cdot (1 - 0.5)} = \frac{1344.56}{6.8551 + 0.9604} = 172$$

3.14 Inclusion Criteria :

- Who is serving as a teacher at medical colleges for at least one year
- Willing to cooperate in this study.

3.15 Exclusion Criteria:

- Severely ill

3.16 Observation and Outcome Measurement:

The main outcome measurement is the level of perception of teachers working at 4 Government and 4 private medical colleges in Bangladesh. This outcome variable may be influenced directly or indirectly by other variables.

3.17 Research Instrument :

Self-administered structured questionnaire

3.18 Domains of Questionnaire¹⁰:

- Questions about attitude towards evidence based medical education (EBME).
- Questions about opinion for moving from traditional to evidence based practice.
- Questions about awareness on evidence based medical education.
- Questions about understanding of the technical terms used in EBME.

3.19 Measurement Scale¹⁰:

- Likert's scale
- Dichotomous scale—yes/no response is used
- Questionnaire developed with multiple options, continuous and categorical response
- Open ended questions.

3.20 Pre-testing:

In pre-testing, basic assumptions about the content of the study was used. Before conducting the research, the investigator should at least know how effective the research tool would perform. Pre-testing of the questionnaire is necessary to test the validity and reliability of the questionnaire. So pre-testing was done among twenty teachers of Khon Kaen, Siriraj and Chulalongkorn university of Thailand.

3.21 Validity Test:

Measurement of the content and construct validity referred to the validation of the study. After constructing the draft questionnaire, it was sent to the five experts of relevant field to see the feasibility and relevance of the questionnaire. Each item of the questionnaire was examined. The score was tabulated and the item correlation was calculated by using the formula:

$$\text{Item Correlation (IC)} = \frac{R}{N}$$

Here: R = Total score of that item

N = Number of experts

Score 0 = Not sure

Score +1 = Relatively valid items

Score - 1 = Relatively Invalid

IC > 0.5 → Acceptable

Every item has the score more than 0.5. So the item correlation of the questionnaire is valid and could be used in the future study.

3.22 Reliability Test:

Reliability is the accuracy, dependability, stability, consistency, predictability and reproducibility of a measuring instrument. Internal consistency of rating scale was done by Cronbach alpha statistic using SPSS, which is appropriate for attitude test. As the reliability coefficient is more than 0.8, so the items are highly reliable and acceptable.

3.23 Data Collection:

Data was collected from teachers who meet the eligible criteria working at four public and four private medical colleges of Bangladesh. Every individual has been considered as the representative of reference population and characteristics related with variables to generalize the finding of the study to reference population was included in a sample. Working day was assigned as a data collection day. Data collection was done by the researcher himself with a self-administered structured questionnaire. To maintain the quality of data collection, different procedures was adopted, such as pre code forms, several level of data editing before data coding, and consultation with advisor and co-advisor other research concerned persons. Data was collected until the desired number of sample was meet by simple random sampling.

3.24 Steps of Data Collection:

- Taking consent from the Principal/ Director of the medical college/hospital.
- Communication with the head of the concern department
- After briefing about the aim, nature, purpose and importance of the study and assuring confidentially, questionnaire was distribution among the teachers to fill up it.
- Questionnaire was collected with greetings and vote of thanks.

3.25 Consent and Confidentiality:

Consent was taken before distributing the questionnaire from each respondent teacher. The privacy, identity and confidentiality was assured to teachers to be maintained with anonymity.

3.26 Statistical Analysis:

No	Variables	Measurement Scale	Statistical Methods
A	Independent		
1	Background variables: Age Gender Working Medical College Duration of teaching Post graduation Access to evidence	Ratio Nominal Nominal Ratio Nominal Nominal	Mean, SD Proportion Proportion Mean, SD Proportion Proportion
B	Dependent		
2	Perception (Over all) (The component of Perception)	Binary	Proportion, 95% CI
2.1	Attitude towards EBME	Ordinal	Mean, SD, 95% CI
2.2	Opinion about moving from traditional to EBME	Nominal	Proportion, 95% CI
2.3	Awareness about EBME	Nominal	Proportion, 95% CI
2.4	Understanding of technical terms used in evidence based medical education	Nominal	Proportion, 95% CI
3	Factors influences perception	Interval Binary, Categorical	t-test, F-test, Chi-square test Multiple logistic regression

3.27 Ethical Consideration:

- Teacher's oral consent was taken.
- Privacy, confidentiality and anonymity was maintained.
- The nature and purpose of the study was explained before distributing the questionnaire
- The study received ethical approval from the concern personnel of Bangladesh.

3.28 Study Limitations:

- Scope of information was limited, it can still be regarded as a pilot study, since it is the first of its kind and nature in Bangladesh.
- Because of financial constraints the study was conducted in 4 public and 4 private medical colleges.
- The results of the study does not reflect the information of all medical colleges, but it may be the milestone of further research and information.
- All the teachers did not participate or cooperate in the study.

CHAPTER 4

RESULTS OF THE STUDY

In this study eligible teachers were identified and a total of 300 teachers were given structured questionnaire after briefing the aim and objectives of the study taking their consent. After getting 172 correctly filled up returned questionnaire data collection process was stopped. The results obtained after data collection are presented under different headings dealing with the main aspects of the study.

4.1 Background information:

Table 4.1. 1 Percentage of the respondents according to age in terms of government and private medical Colleges

Age of the respondents	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
≤ 30 Years	7	8.1	9	10.5
31-40 Years	42	48.8	37	45.9
41-45 Years	26	30.2	11	12.8
46-50 Years	10	11.6	10	11.6
≥ 51 Years	1	1.2	19	22.1
Total	86	100	86	100

According to Table 4.1.1 out of 172 respondents most of the respondents belongs to age group 31-40 years, of which 42 (48.8%) at government medical college and 37 (45.9%) at private medical colleges. Most of the senior teaching staffs belongs to private medical college, it is 19 (22.10%) and only 1 (1.2%) belongs to government medical colleges.

Table 4.1. 2 Percentage of the respondents according to gender/sex in terms of government and private medical colleges.

Sex of the respondents	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Male	62	72.1	40	46.5
Female	24	27.9	46	40.7
Total	86	100	86	100

According to Table 4.1.2 among 172 respondents male is 102 female is 70 in number. But among the male 62 belongs to government and 40 belongs to private medical college. But among the female 24 form government medical colleges but around double 46 respondents belongs to private medical colleges.

Table 4.1.3 Percentage of the respondents according to duration of teaching in government and private medical colleges.

Duration of teaching	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
1-5 Years	58	67.4	31	36.0
6-10 Years	15	17.4	20	23.3
11-15 Years	6	7.0	12	14.0
16-20 Years	6	7.0	16	18.6
≥ 21 Years	1	1.2	7	8.1
Total	86	100	86	100

According to Table 4.1.3 among 172 respondent most of the respondents belongs to teaching duration 1-5 years of which 58(67.4%) from government and 31 (36.0%) from private medical colleges. 15 (17.4%) respondents from government medical colleges and 20(23.3%) respondents from private medical colleges having their duration of teaching within 6-10 years.

Table 4.1.4 Percentage of the respondents according to post graduation qualification in government and private medical colleges.

Having post graduation qualification	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Yes	59	68.6	50	58.1
No	27	31.4	36	41.9
Total	86	100	86	100

According to Table 4.1.4 out of 172 respondents 109 have post graduation qualification of which 59(68.6%) at government medical colleges and 50(58.1%) at private medical colleges and 67 do not have any post graduation qualification of which 27(31.4%) at government and 36(41.9%) at private medical colleges.

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Table 4.1.5 Percentage of the respondents according to designation of the respondents in government and private medical colleges.

Designation of the respondents	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Professor			12	14.0
Associate Professor	10	11.6	17	19.8
Assistant Professor	19	22.1	16	18.6
Registrar	1	1.2	5	5.8
Asstt. Registrar	1	1.2	6	7.0
Lecturer	55	64.0	30	34.9
Total	86	100	86	100

According to Table 4.1.5 among 172 respondents 12(14.0%) is professor and all of them are at private medical colleges. Associate professor is 27 of which 10(11.6%) at government and 17(19.8%) at private medical colleges. Assistant professor is 35 of which 19 (22.1%) is from government and 16 (18.6%) is from private medical colleges, registrar is 6 of which 1 (1.2%) from government and 5 (5.8%) from private medical colleges. Assistant registrar is 7 of which 1 (1.2%) from government medical colleges and 6 (7.0%) from private medical colleges. Out of 172 respondents Lecturer is 85 of which 55 (64.0%) from government and 30(34.9%) from private medical colleges.

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Table 4.1. 6 Percentage of the respondents according to their computer skill in relation to government and private medical colleges.

Computer skill of the respondents	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Irrelevant to profession	8	9.5	1	1.2
Like to know more	71	84.5	54	62.8
Confident enough	5	6.0	31	36.0
Total	84	100	86	100

According to Table 4.1.6 out of 172 respondents 9 considered computer skill as irrelevant to their profession of which 8 (9.5%) from government and 1 (1.2%) from private medical colleges. 125 respondents expressed that they like to know more about computer skill of which 71 (84.5%) from government and 54 (62.8%) from private medical colleges. 36 respondents are confident enough about computer skill of which 5 (6.0%) from government and 31 (36.0%) from private medical colleges.

Table 4.1.7 Percentage of the respondents according to their publication in recognized journal in terms of government and private medical colleges.

Having publication in recognized journal	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Yes	34	40	59	68.6
No	51	60	27	31.4
Total	85	100	86	100

According to Table 4.1.7 out of 172 respondents 93(54.4%) have their publications in recognized journals of which 34 (40%) from government and 59 (68.6%) from private medical colleges. 78(45.6%) respondents do not have any publications in recognized journals of which 51 (60%) from government and 27 (31.4%) from private medical colleges.

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Table 4.1. 8 Percentage of the respondents according to their number of publication in terms of government and private medical Colleges.

Number of Publication	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Nil	50	58.1	28	32.6
1-3	17	19.8	16	18.6
4-10	15	17.4	23	26.7
11-15	2	2.3	8	9.3
≥ 16	2	2.3	11	12.8
Total	86	100	86	100

According to Table 4.1.8 out of 172 respondents 78 do not have any publication of which 50 (58.1%) from government and 28 (32.6%) from private medical colleges. 33 of the respondents have 1-3 publications of which 17(19.8%) from government and 16 (18.6%) from private medical colleges. 38 of the respondents have their publication ranged 4-10 of which 15 (17.4%) from government and 23 (26.7%) from private medical colleges. Only 10 have their publications ranged 11-15 of which 2(2.3%) from government and 8 (9.3%) from private medical colleges. 13 respondents have their publication 16 or above of which 2 (2.3%) from government medical colleges and 11 (12.8%) from private medical colleges.

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Table 4.1.9 Percentage of the respondents based on their formal training in computer operating in terms of government and private medical colleges:

Formal training in computer operating	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Yes	18	20.9	53	61.6
No	68	79.1	33	38.4
Total	86	100	86	100

According to Table 4.1.9 out of 172 respondents only 71 have received their formal training in computer operating of which 18(20.9%) from government and 53 (61.6%) from private medical colleges. About 101 respondents did not have any formal training in computer operating of which 68 (79.1%) from government and 33 (38.4%) from private medical colleges.

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Table 4.1.10 Percentage of the respondents according to the place from where they received training on computer in terms of government and private medical colleges.

Place of training on computer	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
With in country	12	14.0	19	22.1
Outside country	6	7.0	34	39.5
" Not applicable"	68	79.1	33	38.4
Total	86	100	86	100

According to Table 4.1.10 out of 172 respondent 31 respondents received their training on computer within the country of which 12(14.0%) from government medical and 19(22.1%) from private medical colleges. 40 respondents received their training from outside the country of which 6 (7.0%) from government medical and 34 (39.5%) from private medical colleges. About 101 respondents did not have any training at all - so they expressed as not applicable.

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Table 4.1.11 Percentage of the respondents according to their formal training on critical appraisal in terms of government and private medical college.

Formal training in critical appraisal	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Yes	15	17.4	51	59.3
No	71	82.6	35	40.7
Total	86	100	86	100

According to Table 4.1.11 among 172 respondents 66 respondents have received formal training on critical appraisal of which 15 (17.4%) from government medical and 51 (59.3%) from private medical colleges. 106 respondents did not receive any formal training on critical appraisal of which 71(82.6%) from government medical and 35 (40.7%) from private medical colleges.

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Table 4.1.12 Percentage of the respondents according to the place from where they have received their formal training on critical appraisal in terms of government and private medical colleges.

Place of training on critical appraisal	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Within country	12	14.0	12	14.0
Outside country	3	3.5	39	45.3
" Not applicable"	71	82.6	35	40.7
Total	86	100	86	100

According to Table 4.1.12 among 172 respondents 24 have received it within the country of which 12 (14.0%) from government medical and 12 (14.0%) from private medical colleges. 42 respondents received training on critical appraisal from outside the country of which 3 (3.5%) from government medical and 39 (45.3%) from private medical colleges. Around 106 respondents did not receive any training on critical appraisal - so they expressed it as not applicable.

Table 4.1.13 Percentage of the respondents according to attending EBME related course in terms of government and private medical colleges.

Attending EBME related course	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Yes	17	19.8	48	55.8
No	69	80.2	38	44.2
Total	86	100	86	100

According to Table 4.1.13 among 172 respondents 65 have attended EBME related course of which 17 (19.8%) from government and 48 (55.8%) from private medical colleges. 107 respondents did not attend any EBME related course of which 69 (80.2%) from government and 38 (44.2%) from private medical colleges.

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Table 4.1.14 Percentage of the respondents according to the place where they attended EBME related course in terms of government and private medical colleges.

Place of course attending	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
With in country	15	17.4	5	5.8
Outside country	2	2.3	43	50.0
" Not applicable"	69	80.2	38	44.2
Total	86	100	86	100

According to Table 4.1.14 among 172 respondents 20 have attended EBME related course within the country of which 15 (17.4%) from government medical and 5 (5.8%) from private medical colleges. 45 respondents have attended it outside the country of which 2 (2.3%) from government medical and 43 (50.0%) from private medical colleges. 107 respondents did not attend it at all. So they expressed it as - not applicable.

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Table 4.1.15 Percentage of the respondents according to the type of course on activity attended by them in terms of government and private medical colleges.

Type of course or activity attended	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
workshop	7	8.1	5	5.8
seminar	5	5.8	0	0.0
study tour	1	1.2	0	0.0
journal club	10	11.6	13	15.1
none	49	57.0	17	19.8
more than one	14	16.3	51	59.3
Total	86	100	86	100

According to Table 4.1.15 among 172 respondents 12 respondents attended EBME related workshops of which 7 (8.1%) from government and 5 (5.8%) from private medical colleges. Seminar & study tour were attended by 5 (5.8%) respondents and 1 (1.2%) respondents respectively only from government medical colleges. 23 respondents attended journal club of which 10(11.6%) from government and 13 (15.1%) from private medical colleges. 66 respondents of which 49 (57.0%) from government medical and 17 (19.8%) from private medical colleges did not attend any course or activity related to EBME. But 65 respondents of which 14 (16.3%) from government and 51 (59.3%) from private medical colleges attended more than one activities or courses related to EBME.

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Table 4.1.16 Percentage of the respondents according to their access on Internet/Med-line in terms of government and private medical colleges.

Having access on internet/ med -line	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
No access at all	28	32.6	20	23.3
At home	4	4.7	2	2.3
In own institute	3	3.5	0	0.0
BMRC	12	14.0	12	14.0
ICDDR B	4	4.7	0	0.0
National Health Library	1	1.2	0	0.0
Others	2	2.3	0	0.0
More than one	32	37.2	52	60.5
Total	86	100	86	100

According to Table 4.1.16 among 172 respondents 48 do not have any access at all of which 28 (32.6%) from government and 20 (23.3%) from private medical colleges. 6 respondents of which 4 (4.7%) from government and 2 (2.3%) from private medical colleges have their access at their home. Only 3 (3.5%) from government medical have access at their own institutes. 24 respondents of which 12 (14.0%) from government medical and 12 (14.0%) from private medical colleges have their access at BMRC. Only 4 (4.7%) from government medical colleges have access at ICDDR B. Only 1 (1.2%) from government medical colleges has access at national health library. 2 (1.2%) from government medical colleges have their access at others places. But 84 respondents of which 32 (37.2%) from government medical colleges and 52 (60.5%) from private medical colleges have more than one access.

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Table 4.1.17 Percentage of the respondents according to time spend on online last year in terms of government and private medical colleges.

Time spend on online in last year	Type of medical colleges			
	Government		Private	
	N=	%	N=	%
Nil	33	38.8	21	24.4
1-3	25	29.4	8	9.3
4-10	25	29.4	27	31.4
11-15	2	2.4	9	10.5
≥16	0	0.0	21	24.4
Total:	85	100	86	100

According to Table 4.1.17 out of 172 respondents 55 of which 33 (38.8%) from government medical colleges and 21 (24.4%) from private medical colleges did not spend any time on online search in last year. 33 respondents of which 25 (29.4%) from government medical and 8 (9.3%) from private medical colleges spent 1-3 hours. 52 respondents of which 25 (29.4%) from government and 27 (31.4%) from private medical colleges spent 4-10 hours. 11-15 hours was spent by 11 respondents of which 2 (2.4%) from government and 9(10.5%) from private medical colleges. But 21(24.4%) respondents only from private medical colleges spent 16 or more hours time.

4.2 Attitude towards EBME:

Table 4.2.1a Percentage, mean and SD of Attitude of the respondents towards promotion of EBME:

	Type of medical colleges											Total	\bar{x}	SD
		Like it very much		Like it		No opinion		Don't like it		Don't like it at all				
		n	%	n	%	n	%	n	%	n	%			
Feeling about the present promotion of EBME	Gov.	23	26.7	51	59.3	11	12.8	1	1.2	0	0.0	86 100%	4.12	.66
	Private	43	50.0	42	48.8	0	0	1	1.2	0	0	86 100%	4.48	.57
	Total	66	38.4	93	54.1	11	6.4	2	1.2			172 100%		
Feeling of colleagues	Gov.	17	20.5	38	45.8	25	30.1	2	2.4	1	1.2	83 100%	3.82	.83
	Private	39	45.3	47	54.7	0	0.0	0	0.0	0	0.0	86 100%	4.45	.50
	Total	56	33.1	85	50.3	25	14.8	2	1.2	1	0.6	169 100%		
Usefulness of research finding		Very much useful		Useful		No opinion		Not useful		Not useful at all				
		n	%	n	%	n	%	n	%	n	%			
		Gov.	26	30.2	51	59.3	7	8.1	1	1.2	1			
Private	38	44.2	45	52.3	3	3.5	0	0	0	0	86 100%	4.41	.56	
Total	64	37.2	96	55.8	10	5.8	1	0.6	1	0.6	172 100%			

According to Table 4.2.1a the attitude of the medical teachers was assessed through items of the questionnaire which focused on opinions (Table 4. 2.1a) as to get the feeling of the respondents and also the feelings of their colleagues about the present promotion of EBME. The frequency of the participants who like it very much is 66(38.4%) of which 23 (26.7%) from government and 43 (50.0%) from private medical colleges, like it is 93 (54.1%) of which 51 (59.3%) from government and 42 (48.8%) from private medical colleges, no opinion is 11(12.8%) which belongs to government medical college or do not like it. So it reveals that a large fraction of the total respondents support the promotion of EBME in our country.

About the feeling of their colleagues is 56(33.1%) like it very much of which 17(20.5%) from government and 39(45.3%) from private medical colleges, like it 85(50.3%) of which 38(45.8%) from government and 47(54.7%) from private medical colleges. Again no opinion was from government medical colleges and it is 25(30.1%). 2(2.4%) do not like it and 1(1.2%) do not like it at all from government medical colleges.

About the usefulness of research findings in teaching learning large number of the respondents 64(37.2%) of which 26(30.2%) from government and 38 (44.2%) from private medical colleges think it as very much useful, 96(55.8%) respondents think it is useful of which 51 (59.3%) from government and 45 (52.3%) from private medical college, 10(5.8%) responding did not give any opinion of which 7 (8.1%) from government and 3 (3.5%) from private medical colleges, 1 (1.2%) respondents from government. think as not useful and 1 (1.2%) respondents from government medical colleges think as not useful at all.

Table 4.2.1b Percentage, mean and SD of Attitude of the respondents towards promotion of EBME associated objectives:

	Type of medical colleges											Total	\bar{X}	SD
		Strongly Agree		Agree		No opinion		Disagree		Strongly Disagree				
		n	%	n	%	n	%	n	%	n	%			
Practicing EBME improve doctors' competence	Gov.	21	25.0	57	67.9	5	6.0	1	1.1	0	0.0	84 100%	4.17	.58
	Private	35	40.7	44	51.2	7	8.1	0	0.0	0	0.0	86 100%	4.33	.62
EBME improve doctors' Patient's care	Gov.	22	25.6	51	59.3	9	10.5	4	4.7	0	0.0	86 100%	4.06	.74
	Private	31	36.0	37	43.0	18	20.9	0	0.0	0	0.0	86 100%	4.15	.74
Practicing EBME enhance patient's satisfaction	Gov.	17	20.0	56	65.9	6	7.1	6	7.1	0	0.0	85 100%	3.99	.74
	Private	31	36.0	35	40.7	20	23.3	0	0.0	0	0.0	86 100%	4.13	.76
Practicing EBME will develop professionalism	Gov.	16	18.6	59	68.6	10	11.6	1	1.2	0	0	86 100%	4.05	.59
	Private	32	37.2	47	54.7	7	8.1	0	0	0	0	86 100%	4.29	.61
Practicing EBME will help to become a life long learner	Gov.	24	27.9	52	60.5	8	9.3	2	2.3	0	0.0	86 100%	4.14	.67
	Private	34	39.5	48	55.8	4	4.7	0	0.0	0	0.0	86 100%	4.35	.57
Practicing EBME helps in continuing professional development	Gov.	21	24.4	55	64.0	9	10.5	1	1.2	0	0	86 100%	4.12	.622
	Private	31	36.0	49	57.0	6	7.0	0	0	0	0	86 100%	4.29	.59
Teacher's don't have take care the whole process considering EBME	Gov.	0	0.0	11	12.8	18	20.9	43	25.0	14	16.3	86 100%	3.70	.89
	Private	1	1.2	0	0.0	1	1.2	53	61.6	31	36.0	86 100%	4.31	..62
Policy maker need not to aware about EBME	Gov.	3	3.5	4	4.7	13	15.1	47	54.7	19	22.1	86 100%	3.87	.93
	Private	0	0.0	0	0.0	2	2.3	51	59.3	33	38.4	86 100%	4.36	.53

According to Table 4.2.1b about doctor's competence 56(32.9%) respondents of which 21(25.0%) from government and 35 (40.7%) from private medical colleges strongly agreed that practicing EBME improve doctors competence, 101(59.4%) respondents only agreed about it of which 57 (67.9%) form government and 44 (51.2%) from private medical colleges, 12(7.1%) did not give opinion of which 5 (6.0%) from government and 7(8.1%) from private medical colleges, only 1 (1.2%) from government medical colleges disagreed about it.

About patient's care 53(30.8%) respondents strongly agreed that practicing EBME improve patients care of which 22 (25.6%) from government and 31 (36.0%) from private medical colleges, 88(51.2%) respondents only agreed about it of which 51 (59.3%) from government and 37 (43.0%) from private medical colleges, 27did not give opinion of which 9 (10.5%) from government and 18 (20.9%) from private medical colleges, only 4 (4.7%) from government medical colleges disagreed about it.

About patient's satisfaction 48(28.1%) respondents strongly agreed that practicing EBME enhance patients' satisfaction of which 17 (20.0%) from government and 31 (36.0%) from private medical colleges, 91(53.2%) respondents only agreed about it of which 56 (65.9%) from government and 35 (40.7%) from private medical colleges, 26 (15.2%) respondents did not give opinion, 6 (7.1%) respondents from government medical colleges disagreed with it.

48((27.9%) respondents strongly agreed that practicing EBME will developed professionalism of which 16 (18.6%) from government and 32 (37.2%) from private medical colleges, 106(61.6%) respondents only agreed with it of which 59 (68.6%) from government and 47 (54.7%) from private medical colleges, 17(9.9%) respondents did not give opinion, only 1(1.2%) respondents from government medical colleges disagreed with it.

58(33.7%) respondents strongly agreed that practicing EBME will help to become a life long learner of which 24 (27.9%) from government and 34(39.5%) from private medical colleges, 100(58.1%) respondents only agreed with it of which 52 (60.5%) from government and 48 (55.8%) from private medical colleges, 12 did not give opinion, only 2 (2.3%) from government medical colleges disagreed with it.

Out of 172, 52(30.2%) respondents strongly agreed that practicing EMBE helps in continuing professional development of which 21(24.4%) from government medical colleges and 31(36.0%) from private medical colleges. 104(60.5%) respondents only agreed of which 55(64.0%) from government and 49(57.0%) from private medical colleges. 15(8.7%) did not give opinion of which 9(10.5%) from government and 6 (7.0%) from private medical colleges.

Only 1(1.2%) respondent from private medical college strongly agreed that teacher's do not have to take care the whole process considering EBME, 11(12.8%) from government medical colleges only agreed with it, 19(11.0%) respondents did not give opinion, 96(55.8%) respondents of which 43(50.0%) from government medical and 53 (61.6%) from private medical colleges disagreed that teacher's do not have take care the whole process considering EBME, 45(26.2%) respondents of which 14(16.3%) from government and 31(36.0%) from private medical colleges strongly disagreed with it.

Only 3(3.5%) respondent from government medical college strongly agreed that policy makers need not to aware of EBME, 4(4.7%) from government medical colleges only agreed with it, 15(8.7%) respondents did not give opinion, 98(57.0%) respondents of which 47(54.7%) from government medical and 51(59.3%) from private medical colleges disagreed that policy makers need not to aware of EBME, 52(30.2%) respondents of which 19(22.1%) from government and 33(38.4%) from private medical colleges strongly disagreed with it.

4.2.1c Statistical test for Attitude towards EBME between government and private medical colleges:

Attitude of the respondents were divided in to three groups. Such as : attitude towards education (variables 19,20, 21, 26, 28), attitude towards professionalism(variables 22,23, 24, 25, 27) and attitude towards policy making (variable 29).

	Types of medical college	N	Mean	SD	SE	P-value
Attitude towards education	Gov.	83	3.98	.500	.054	< .001
	Private	86	4.40	.439	.047	
Attitude towards professionalism	Gov.	83	4.07	.535	.058	.056
	Private	86	4.23	.579	.062	
Attitude towards policymaking	Gov.	86	3.87	.930	.100	< .001
	Private	86	4.36	.529	.057	

(Using unpaired t-test)

As per the above mentioned table considering the mean of attitude towards education and policymaking of government and private medical college it is found that there is significant difference between the attitude of government and private medical college towards education and policymaking . After doing t-test it is statistically significant as p is less than .001

But in case of attitude towards professionalism considering the mean of attitude towards professionalism of government and private medical college it is found that there is no significant difference between the attitude of government and private medical college. After doing t-test it is also found statistically not significant as p is .056

4.3 Opinion about moving from traditional to EBME:

Table 4.3.1a Percentage of Opinion about moving from traditional to evidence based medical education:

Ways, by one can move from opinion based practice to evidence based practice by	Type of medical colleges				
	Government		Private		
	N=	%	N=	%	Total
by learning the skill of evidence based medical education	35	41.2	21	24.4	56 32.7%
By seeking and applying evidence based summaries	15	17.6	2	2.3	17 9.9%
by using evidence based practice guide line developed by others	31	36.5	52	60.5	83 48.5%
none	4	4.7	11	12.8	15 8.8%
Total	85	100%	86	100%	171 100%

(Using Chi-Square test, $p < .0001$)

According to Table 4.3 about the opinion regarding the way how one can move to EBME practice 56(32.7%) respondents of which 35 (41.2%) government and 21 (24.4%) from private medical colleges consider the way for moving from traditional to EBME by learning skill of EBME, 17(9.9%) respondents of which 15 (17.6%) from government and 2 (2.3%) from private medical college consider the way by seeking and applying evidence based summaries , 83(48.5%) respondents think by. using evidence based practice guidelines developed by others of which 31 (36.5%) from government and 52 (60.5%) from private medical colleges and 15(8.8%) respondents of which 4(4.7%) from government and 11(12.8%) from private medical colleges think none of the above mentioned ways.

4.3.1b Statistical test for Opinion about moving from tradition to EBME practice:

After doing Pearson Chi-Square test it is found that P-value is $< .0001$.

So the way of thinking for moving from traditional to evidence based medical education practice between the government and private medical colleges differ significantly.



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4.4 Awareness about the resources of EBME:

Table 4.4.1a Percentage of extent of awareness of the respondents about the resources of EBME:

	Type of medical colleges									Total
		Unaware		Aware but not read		Read		Read & use in the area of medical education		
		n	%	n	%	n	%	n	%	
Extent of awareness and use of BMJ	Gov.	1	1.2	28	32.9	36	42.4	20	23.5	85 100%
	Private	1	1.2	9	10.5	22	25.6	54	62.8	86 100%
Extent of awareness and use of Lancet	Gov.	8	9.4	50	58.8	20	23.5	7	8.2	85 100%
	Private	4	4.7	22	25.6	17	19.8	43	50.0	86 100%
Extent of awareness and use of JAMA	Gov.	32	38.1	31	36.9	15	17.9	6	7.1	84 100%
	Private	20	23.3	41	47.7	18	20.9	7	8.1	86 100%
Extent of awareness and use of Medical Teacher	Gov.	53	63.1	17	20.2	11	13.1	3	3.6	84 100%
	Private	26	30.2	38	44.2	9	10.5	13	15.1	86 100%
Extent of awareness and use of Medical Education	Gov.	53	62.4	22	25.9	7	8.2	3	3.5	85 100%
	Private	26	30.2	40	46.5	7	8.1	13	15.1	86 100%
Extent of awareness and use of Community Net work	Gov.	66	81.5	13	16.0	1	1.2	1	1.2	81 100%
	Private	40	47.1	37	43.5	5	5.9	3	3.5	85 100%
Extent of awareness and use of BMRC journal	Gov.	1	1.2	17	19.8	38	44.2	30	34.9	86 100%
	Private	2	2.3	12	14.0	21	24.4	51	59.3	86 100%
Extent of awareness and use of BMA journal	Gov.	2	2.3	11	12.8	42	48.8	31	36.0	86 100%
	Private	0	0.0	14	16.3	24	27.9	48	55.8	86 100%

According to Table 4.4.1a about BMJ 2(1.2%) respondents are totally unaware of BMJ, 37(21.6%) respondents are aware but not read, 85(33.9%) respondents of which 36(42.4%) from government and 22(25.6%) from private medical colleges only read BMJ, 74(43.3%) respondents of which 20(23.5%) from government and 54(62.8%) from private medical colleges read and use BMJ in the area of medical education.

About Lancet 12(7.0%) respondents are totally unaware of it, 72(42.1%) respondents are aware but not read, 37(21.6%) respondents of which 20(23.5%) from government and 17 (19.8%) from private medical colleges only read Lancet, 50(29.2%) respondents of which 7(8.2%) from government and 43(50.0%) from private medical colleges read and use Lancet in the area of medical education.

About JAMA 52(30.6%) respondents are totally unaware of it, 72(42.4%) respondents are aware but not read, 33(19.4%) respondents of which 15(17.9%) from government and 18(20.9%) from private medical colleges only read JAMA, 13(7.6%) respondents of which 6(7.1%) from government and 7(8.1%) from private medical colleges read and use JAMA in the area of medical education.

About Medical Teacher 79(46.5%) respondents are totally unaware of it of which 53 (63.1%) from government and 26(30.2) from private medical colleges, 55(32.4%) respondents of which 17(20.2%) from government and 38(44.2%) from private medical colleges are aware but not read, 20(11.8%) respondents of which 11(13.1%) from government and 9(10.5%) from private medical colleges only read Medical Teacher, 16 (9.4%) respondents of which 3(3.6%) from government and 13(15.1%) from private medical colleges read and use Medical Teacher in the area of medical education.

About Medical Education 79(46.2%) respondents are totally unaware of it of which 53(62.4%) from government and 26(30.2%) from private medical colleges, 62 (36.3%) respondents of which 22(25.9%) from government and 40(46.5%) from private medical colleges are aware but not read, 14(8.2%) respondents of which 7(8.2%) from government medical colleges only read Medical Education. 16(9.4%) respondents of which 3(3.5%) from government and 13(15.1%) from private medical colleges read and use it in the area of medical education.

About Community Network 106(63.9%) respondents are totally unaware of it of which 66(81.5%) from government and 40(47.1%) from private medical colleges, 50 (30.1%) respondents of which 13(16.0%) from government and 37(43.5%) from private medical colleges are aware but not read, 6(3.6%) respondents of which 1(1.2%) from government and 5(5.9%) from private medical colleges only read Community Net Work, 4(2.4%) respondents of which 1(1.2%) from government and 3(3.5%) from private medical colleges read and use Community Net Work in the area of medical education.

About BMRC journal 3(1.7%) respondents are totally unaware of it of which 1 (1.2%) from government and 2(2.3%) from private medical colleges, 29(16.9%) respondents of which 17(19.8 %) from government and 12(14.0%) from private medical colleges are aware but not read, 59(34.3) respondents of which 38(44.2%) from government and 21(24.4%) from private medical colleges only read BMRC journal, 81 (47.1%) respondents of which 30(34.9%) from government and 51(39.3%) from private medical colleges read and use BMRC journal in the area of medical education.

About BMA journal 2 (2.3%) respondents from government medical colleges are totally unaware of it, 25(14.5%) respondents of which 11(12.8 %) from government and 14(16.3%) from private medical colleges are aware but not read, 66(38.45) respondents of which 42(48.8%) from government and 24(27.9%) from private medical colleges only read BMA journal, 79(45.9%) respondents of which 31(36.0%) from government and 48 (55.8%) from private medical colleges read and use BMA journal in the area of medical education.

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4.4.1b Statistical test for extent of awareness between government and private medical colleges:

For convenient the total number of journals are divided in to two groups. One is medical education journal (Medical Teacher, Medical Education, Community Network) and the other is medical journal(BMJ, Lancet, JAMA,BMRC,BMA).The extent of awareness is also divided in to two groups. Such as aware(means at least one journal) and unaware..

For Medical Education Journals:

Types of medical college	Awareness of medical education journals				P-value
	Unaware		Aware		
	n	%	n	%	
Gov.	67	77.9	19	22.1	< .0001
Private	41	47.7	45	52.3	
Total	108	62.8	64	37.2	

As per the above mentioned table and also after doing Chi-Square test considering the p-value the difference between the awareness regarding medical education journals of government and private medical college is significant.

For Medical Journals:

Types of medical college	Awareness of medical journals				P-value
	Unaware		Aware		
	n	%	n	%	
Gov.	34	39.5	52	60.5	.075
Private	23	26.7	63	73.3	
Total	57	33.1	115	66.9	

As per the above mentioned table and also after doing Chi-Square test considering the p-value the difference between the awareness regarding medical journals of government and private medical college is not significant.

4.5 Understanding of the technical terms used in EBME:

Table 4.5.1a Percentage of level of understanding of the technical terms by the respondents which are commonly used in EBME:

	Type of medical colleges	It is irrelevant to my profession		I like to know more about it		I know it and can explain to others		Total
		n	%	n	%	n	%	
Relative risk	Gov.	1	1.2	50	58.1	35	40.7	86 100%
	Private	0	0.0	26	30.2	60	69.8	86 100%
Odds Ratio	Gov.	1	1.2	51	60.0	33	38.8	85 100%
	Private	0	0.0	27	31.4	59	68.6	86 100%
Systematic review	Gov.	1	1.2	74	87.1	10	11.8	85 100%
	Private	0	0.0	47	54.7	39	45.3	86 100%
Meat Analysis	Gov.	1	1.2	74	90.2	7	8.5	82 100%
	Private	0	0.0	54	62.8	32	37.2	86 100%
Confidence interval	Gov.	0	0.0	70	84.3	13	15.7	83 100%
	Private	0	0.0	44	51.2	42	48.8	86 100%
P Value	Gov.	1	1.2	57	69.5	24	29.3	82 100%
	Private	0	0.0	44	51.2	42	48.8	86 100%
Validity	Gov.	0	0.0	31	36.0	55	64.0	86 100%
	Private	0	0.0	25	29.1	61	70.9	86 100%
Reliability	Gov.	0	0.0	30	35.3	55	64.7	85 100%
	Private	0	0.0	25	29.1	61	70.9	86 100%
Sensitivity	Gov.	0	0.0	41	48.2	44	51.8	85 100%
	Private	0	0.0	32	37.2	54	62.8	86 100%
Specificity	Gov.	0	0.0	40	46.5	46	53.5	86 100%
	Private	0	0.0	31	36.0	55	64.0	86 100%
Publication Bias	Gov.	1	1.2	65	76.5	19	22.4	85 100%
	Private	0	0.0	53	61.6	33	38.4	86 100%

According to Table 4.5.1a about relative risk among 172 respondents only 1 (1.2%) from government medical college told that relative risk is irrelevant to his profession, 76(44.2%) respondents of which 50 (58.1%) from government and 26 (30.2%) from private medical colleges told that they like to know more about it, 95 (55.2%) respondents of which 35 (40.7%) from government and 60 (69.8%) from private medical colleges told that they know it and can explain relative risk to others.

About odds ratio only 1 (1.2%) respondent from government medical college told that odds ratio is irrelevant to his profession, 78(45.6) respondents of which 51 (60.0%) from government and 27 (31.4%) from private medical colleges like to know more about it, 92 respondents of which 33 (38.8%) from government medical college and 59 (68.6%) from private medical colleges told that they know it and can explain odds ratio to others.

About systematic review only 1 (1.2%) respondent from government medical college told that systematic review is irrelevant to his profession, 121(70.8%) respondents of which 7 (87.1%) from government medical and 47 (54.7%) from private medical colleges like to know more about it, 49(28.7%) respondents of which 10 (11.8%) from government and 39 (45.3%) from private medical colleges told that they know it and can explain systematic review to others.

About meta analysis only 1 (1.2%) respondent from government medical colleges told that meta analysis is irrelevant to his profession. 128(76.2%) respondents of which 74 (90.2%) from government and 54 (62.8%) from private medical colleges like to know more about it, 39(23.2%) respondents of which 7 (8.5%) from government and 32 (37.2%) from private medical colleges told that they know it and can explain meta analysis to others.

About confidence interval 114(67.5%) respondents of which 70 (84.3%) from government and 44 (51.2%) from private medical colleges told that they like to know more about confidence interval, 55(32.5) respondents of which 13 (15.7%) from government and 42 (48.8%) from private medical colleges told that they know it and can explain it to others.

About p-value only 1 (1.2%) respondent from government medical colleges told that p-value is irrelevant to his profession, 101(60.1%) respondents of which 57 (69.5%) from government and 44 (51.2%) from private medical colleges told that they like to

know more about it, 66(39.3%) respondents of which 24(29.3%) from government and 42(48.8%) from private medical colleges told that they know about p-value and can explain it to others.

About validity 56(32.6%) respondents of which 31 (36.0%) from government and 25(29.1%) from private medical colleges told that they like to know more about validity and 116(67.4%) respondents of which 55 (64.0%) from government and 61 (70.9%) from private medical colleges told that they know about validity and can explain it to others.

About reliability 55(32.2%) of which 30 (35.3%) from government and 25 (29.1%) from private medical colleges told that they like to know more about reliability, 116 respondents of which 55 (64.7%) from government medical colleges and 61 (70.9%) from private medical colleges told that they know about reliability and can explain it to others.

About sensitivity 73(42.7%) respondents of which 41 (48.2%) from government and 32 (37.2%) from private medical colleges told that they like to know more about sensitivity, 98(57.3%) respondents of which 44 (51.8%) from government and 54(62.8%) from private medical colleges told that they know sensitivity and can explain it to others.

About specificity 71(41.3%) respondents of which 40 (46.5%) from government and 31(36.0%) from private medical colleges told that they like to know more about specificity, 101(58.7%) respondents of which 46(53.5%) from government and 55 (64.0%) from private medical colleges told that they know specificity and can explain it to others.

About publication bias only 1 (1.2%) respondent from government medical told that publication bias is irrelevant to his profession, 118(69.0%) respondents of which 65 (76.5%) from government and 53 (61.6%) from private medical colleges told that they like to know more about publication bias, 52(30.4%) respondents of which 19 (22.4%) from government and 33(38.4%) from private medical colleges.

4.5.1b Statistical test for understanding of the technical terms used in EBME practice between government and private medical colleges:

For betterment we have divided the level of understanding in three groups. Such as: Can not explain at all, Can explain at least one, Can explain all.

Type of medical college	Level of understanding						Total		P-value
	Can not explain at all		Can explain at least one		Can explain all		n	%	
	n	%	n	%	n	%			
Gov.	23	26.7	62	72.1	1	1.2	86	100	< .0001
Private	24	27.9	33	38.4	29	33.7	86	100	
Total	47	27.3	95	55.2	30	17.4	172	100	

(Using Chi-Square test)

As per the above mentioned table and also after doing Chi-Square test(P-value: < .0001) it is found that there is a significant difference between the government and private medical colleges regarding the understanding of the technical terms usually used in EBME.

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4.6 Statistical tests for background and perception on EBME:

The background factors like having post graduation, duration of teaching, access to evidence has influence on the components of perception about evidence based medical education.

4.6.1a Having post graduation and attitude:

Attitude	Having post graduation	N	Mean	SD	P-value
Attitude towards education	Yes	108	4.270	.514	.011
	No	61	4.062	.489	
Attitude towards professionalism	Yes	106	4.252	.567	.003
	No	63	3.993	.519	
Policy makers need to be aware of EBME	Yes	109	4.12	.879	.948
	No	63	4.11	.625	

(Using unpaired t-test)

Considering the above mentioned table it is significant, so post graduation has effect on attitude.

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4.6.1b Duration of teaching and attitude:

Attitude	Duration of teaching	N	Mean	SD	P-value
Attitude towards education	1-5 years	86	4.055	.497	.001
	6-10years	35	4.245	.492	
	11-15years	18	4.233	.471	
	16-20years	22	4.545	.432	
	>20years	8	4.425	.589	
Attitude towards professionalism	1-5 years	87	4.032	.528	.008
	6-10years	34	4.229	.548	
	11-15years	18	4.344	.517	
	16-20years	22	4.445	.489	
	>20years	8	3.975	.877	
Policy makers need to be aware of EBME	1-5 years	89	3.99	.832	.041
	6-10years	35	4.06	.873	
	11-15years	18	4.22	.548	
	16-20years	22	4.50	.598	
	>20years	8	4.50	.535	

(Using one way ANOVA)

Considering the above mentioned table it is significant for attitude towards education, so post graduation has effect on attitude.

4.6.2 Having post graduation qualification and Opinion about moving from traditional to evidence based medical education:

Having post graduation	Ways, by one can move from traditional to EBME practice by				P-value
	By learning skill of EBME	By seeking and applying evidence based summaries	By using evidence based practice guidelines developed by others	None	
Yes	29 26.9%	12 11.1%	63 58.3%	4 3.7%	< .0001
No	27 42.9%	5 7.95	20 31.7%	11 17.5%	
Total	56 32.7%	17 9.9%	83 48.5%	15 8.8%	

(Using Chi-Square test)

Considering the above mentioned table it is significant, so post graduation has effect on opinion for moving from traditional to evidence based medical education.

4.6.3a Having post graduation and awareness about resources of EBME:

Here resources have been divided into two groups. Such as medical journals and medical education journals.

About medical journals:

Having post graduation	Awareness about medical journals		P-value
	Unaware	Aware	
Yes	26 23.9%	83 76.1%	< .0001
No	31 49.2%	32 50.8%	
Total	57 33.1%	115 66.9%	

(Using Chi-Square test)

About medical education journals:

Having post graduation	Awareness about medical education journals		P-value
	Unaware	Aware	
Yes	56 51.4%	53 48.6%	< .0001
No	52 82.5%	11 17.5%	
Total	108 62.8%	64 37.2%	

(Using Chi-Square test)

Considering the above mentioned tables as it is significant, so post graduation has an effect on awareness about the resources of EBME.

4.6.3b Duration of teaching and awareness about resources of EBME:

About medical journals:

Duration of teaching	Awareness about medical journals		P-value
	Unaware	Aware	
1-5 years	43 48.3%	46 51.7%	< .0001
6-10years	10 28.6%	25 71.4%	
11-15years	2 11.1%	16 88.9%	
16-20years	1 4.5%	21 95.5%	
>20years	1 12.5%	7 87.5%	
Total	57 33.1%	115 66.9%	

(Using one way ANOVA)

About medical education journals:

Duration of teaching	Awareness about medical journals		P-value
	Unaware	Aware	
1-5 years	70 78.7.3%	19 21.3%	< .0001
6-10years	23 65.7%	12 34.3%	
11-15years	8 44.4%	10 55.6%	
16-20years	6 27.3%	16 72.7%	
>20years	1 12.5%	7 87.5%	
Total	108 62.8%	64 37.2%	

(Using one way ANOVA)

Considering the above mentioned tables as it is significant , so duration of teaching has effect on awareness about resources of EBME.

4.6.4a Having post graduation and understanding of the technical terms used in EBME:

For convenient level of understanding has been divided in to three groups.

Having post graduation	Level of understanding			P-value
	Can not explain at all	Can explain at least one	Can explain all	
Yes	18 16.5%	62 56.9%	29 26.6%	< .0005
No	29 46.0%	33 52.4%	1 1.6%	
Total	47 27.3%	95 55.2%	30 17.4%	

(Using Chi-Square test)

According to the table 4.6.4a it is found significant as P is < .0005, so post graduation has statistically significant effect on level of understanding of the technical terms used in EBME.

4.6.4b Duration of teaching and understanding of the technical terms used in EBME:

Duration of teaching	Level of understanding			P-value
	Can not explain at all	Can explain at least one	Can explain all	
1-5 years	38 42.7%	49 55.1%	2 2.2%	< .0005
6-10years	8 22.9%	20 57.1%	7 20.0%	
11-15years		14 77.8%	4 22.2%	
16-20years	1 4.5%	10 45.5%	11 50.0%	
>20years		2 25.0%	6 75.0%	
Total	47 27.3%	95 55.2%	30 17.4%	

(Using one way ANOVA)

According to the table 4.6.4b it is found significant as P is $< .0005$, so duration of teaching has statistically significant effect on level of understanding of the technical terms used in EBME.

4.6.5a Access to evidence and attitude towards EBME:

Here level of access has been divided in to two groups and attitude towards EBME has been also dived in to three groups:

Attitude towards EBME	Level of access to evidence	N	Mean	SD	P-value
Attitude to education	Not access at all	54	4.54	.442	$< .0005$
	Access at least one	115	4.03	.463	
Attitude to professionalism	Not access at all	54	4.47	.456	
	Access at least one	115	4.00	.546	
Attitude to policy making	Not access at all	54	4.52	.504	
	Access at least one	118	3.93	.834	

(Using unpaired t-test)

Above mentioned table shows that it is found significant as P is $< .0005$, so access to evidence has effect on attitude towards evidence based medical education.

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4.6.5b Access to evidence and Opinion about moving from traditional to evidence based medical education:

Level of access to evidence	Ways, by one can move from traditional to EBME practice by				P-value
	By learning skill of EBME	By seeking and applying evidence based summaries	By using evidence based practice guidelines developed by others	None	
Not access at all	7 13.2%	2 3.8%	42 79.2%	2 3.8%	< .0005
Access to at least one	49 41.5%	15 12.7%	41 34.7%	13 11.0%	
Total	56 32.7%	17 9.9%	83 48.5%	15 8.8%	

(Using Chi-Square test)

As per above mentioned table it is statistically significant that access to evidence has effect on the opinion for moving from traditional to evidence based medical education.

4.6.5c Access to evidence and awareness about resources of EBME:

About medical journals:

Level of access to evidence	Awareness about medical journals		P-value
	Unaware	Aware	
No access at all	4 7.4%	50 92.6%	< .0005
Access to at least one	53 44.9%	65 55.1%	
Total	57 33.1%	115 66.9%	

(Using Chi-Square test)

About medical education journals:

Level of access to evidence	Awareness about medical education journals		P-value
	Unaware	Aware	
No access at all	19 35.2%	35 64.8%	< .0005
Access to at least one	89 75.4%	29 24.6%	
Total	108 62.8%	64 37.2%	

(Using Chi-Square test)

Considering the above mentioned tables it is found significant as P is < .0005, so access to evidence has effect on awareness about resources of EBME.

4.6.5d Access to evidence and understanding of the technical terms used in EBME:

Access to evidence	Level of understanding			P-value
	Can not explain at all	Can explain at least one	Can explain all	
No access at all	3 5.6%	22 40.7%	29 53.7%	< .0005
Access to at least one	44 37.3%	73 61.9%	1 .8%	
Total	47 27.3%	95 55.2%	30 17.4%	

(Using Chi-Square test)

According to the above mentioned table it is found statistically significant. So access to evidence has significant effect on understanding of the technical terms used in EBME.

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CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATION

5.1 Discussion:

Most of the respondents belongs to age group 31-40year (Table4.1.1), male 102 (59.3%) is more than female 70 (40.7%) (Table4.1.2). Respondents were with different duration of teaching experience but mainly 1-5 years duration of 89 (51.7%) and 6-10 years duration of 35 (20.3%) respondents. Respondents who have vast teaching experience mainly belong to private medical colleges (Table4.1.3.). 109 (63.4%) respondents having post graduation qualification nearly equal in government and private medical colleges (Table 4.1.4.). Nearly half of the respondents were lecturer 85 (49.4%) and mainly senior teaching staff like professor, associate professor belongs to private medical colleges (Table 4.1.5.). As many retired senior teachers are involved with private medical colleges. Most of the respondents 127 (73.8%) like to know more about computer skill (Table: 4.1.6.). As computer education is not incorporated in the medical curriculum. So most of the respondents were not aware of it during their course but some of them have learnt it out of their self interest. More than half of the respondents 93 (54.1%) have their publication in recognized journals and of which mainly from private medical colleges (Table 4.1.7.). As the respondents of private Medical colleges are senior, they have their regular system of promotion and in that regards number of publication is counted. But only 71 (41.3%) respondents have formal training on computer operating and around two third is from private medical colleges (Table 4.1.9). Most of the respondents from private medical colleges received that formal computer training outside Bangladesh (Table 4.1.10.). As many of them had their post graduation out side the country. Incase of formal training on critical appraisal more than two third 51 (59.3%) respondents of private medical colleges 15 (17.4%) belongs to government medical colleges of which 42 (24.4%) received it from out side the country and 24(14%) received it within the country (Table 4.1.11, 4.1.12.). Most of the respondents who attended EBME related course belongs to private medical colleges 48 (55.8%) (Table 4.1.13.) and

their place of attending EBME related courses from outside the country, 43 (50.0%) (Table 4.1.14.).

The respondents who have participated in this study from both government and private medical colleges (Table 4.1.1) shows that, in government medical colleges more male than female teachers (62/172 to 24/172) here involved and the reverse in private medical colleges (40/172) to 46//172). The number of respondents who have publications in recognized journals are greater in private than in government medical colleges (59 to 34) (T able 4.1.7). Evidence of advances made in professional work and scope of dissemination of one own knowledge and scientific findings for benefit of others. It also helps for one own personal career development. A larger proportion of respondents from private medicals have formal training in computer operating . As to practice EBME one's should have computer literacy. Without it EBME practice can not be run. As in the global context there will be no desk in future without computer. So it is a badly need of present time. As the teachers of private medical colleges most of them are senior and they studied out side the country and they have direct accountability for their duties and responsibilities and also they are directly observed by their concern authority for their promotion and incentives, so they have more publications and also they have more training on computer.

A large proportion of respondents who have postgraduate qualification also have formal computer training (59/109) compared to those without postgraduate degree (50/109) (Table 4.1.4) of these respondents with postgraduate degree and formal computer training, more are of the assistant and associate professor status than professors or of other designation. Respondents, more received training outside the country than within the country. In the private medical colleges there is a larger number who have obtained the training outside the country as compared to those in government colleges where teachers have learned this either within or outside the country . According to Joseph K Campbell and Cindy Johnson multimedia innovations, such as the world wide web and CD Roms, can provide cheap interactive access to the growing body of visual, auditory, and textual information relevant to medical education, thus liberalizing the leaning process by making it more relevant to individual learners. The validity of comparative media research has been criticized by educationalists because it is difficult to

control the many factors that can influence learning, including differences of subject content, teaching objective, learning activities, instructional context, learning styles and symbolic features of media. Multimedia computer aided learning is overwhelmingly portrayed as positive³⁰.

Of the total respondents, large proportion does not have formal training on critical appraisal, and among which there are more female than male teachers. According to William Rosenberg and Anna Donald the third step is to evaluate, or appraise, the evidence for its validity and clinical usefulness. This step is crucial because it lets the clinician decide whether an article can be relied on to give useful guidance. Unfortunately, a large proportion of published medical research lacks either relevance or sufficient methodological rigor to be reliable enough for answering clinical questions. To overcome this, a structured but simple method, named "critical appraisal," which was developed by several teams working in North America and the United Kingdom, enables individuals without research expertise to evaluate clinical articles⁴.

Mastering critical appraisal entails learning how to ask a few key questions about the validity of the evidence and its relevance to a particular patient or group of patients. Its fundamentals can be learnt within a few hours in small tutorials, workshops, interactive lectures, and at the bedside by a wide range of users, including those without a biomedical back ground⁴. It has been noted in this study that most respondents wish to learn more about computer operation and computer utilities and few are confident at present.

There are various EBME related courses held formally for participants of both government and private sector. More respondents from private sector attend EBME courses than from government sector. Study reveals the fact that most of these EBME related courses are attended by medical teachers above the rank of lecturers. Respondents having attended EBME related courses and publication in recognized journals are of a larger proportion than those without attending courses and without publication. According to R.M. Harden and P.M. Lilley Awonuga et al (2000) surveyed a group of postgraduate trainees in obstetrics and gynecology to determine their views and understanding of EBM and their ability both to access and to understand the EBM literature. Whilst enthusiastic towards the application of the principles of EBM to patient

care, the trainees lacked confidence in their ability to critically appraise published papers³¹.

Of the total respondents 172, more are male (102) than female (70) teachers have attended EBME related activities (workshop, seminars, journal club etc. According to D. Michael Elnicki three EBM journal clubs were developed at the West Virginia University School of Medicine. One was for senior medical students, another for residents, and the third for primary care faculty members. In each, the sessions stressed answering clinical questions arising from actual patient-care issues. The curricular structure and development of the journal clubs are described. Participants anonymously evaluated aspects of the journal clubs regarding their educational value with Likert scale questions. Faculty members and residents generally gave high evaluations to all aspects of the EBM journal clubs. Possible advantages of EBM Journal Clubs are creates a learner-centered curriculum, promotes self-directed learning, allow learners to become teacher, provides immediate feedback on process and content, develops better life-long learners, increases available expertise, promotes collegiality, face validity increases (i.e., "Everyone does it"), wider distribution of effort¹¹.

Respondents who hold ranks above level of lecturers have attended more EMBE related activities. More male than female respondents have access to internet /Medline and more male than female teachers have access to more than one source of such international media. When compared between government and private medical colleges, more respondents from private sector have access to more than one source of these media. Of the total respondents a large proportion has access to more than one media (internet/Medline at home or work place or national health library. But they wish to have more easy access. According to Alastair McColl, Helen Smith, Peter White and Jenny Field access to relevant databases and the World Wide Web, only 20% (41/220) of respondents had access to Medline or other bibliographic databases at their surgery while 76% (173/227) had access at their local library and 21% (45/219) at their home. They also lacked access to the World Wide Web: only 17% (40/236) had access at their surgery, 41% (73/178) at their local library, and 29% (71/247) at their home. In the previous year 51% (102/201) had used Medline or another database for literature searching or had asked someone to do a search on their behalf, and 12 had searched on

more than 10 occasions. Of these 102 doctors, 28 reported having had some training in literature searching, while a total of 16% (47/297) had received formal training in search strategies. At least 11 of those trained had not made a literature search in the previous year. Those trained in searching were more likely to have access to Medline or another database in their home (30% (14/47) v 11% (27/250) and in their surgery (32% (15/47) v 12% (29/250)¹⁰.

A large proportion of the total respondents are very much in favour of promotion of EBME (Table 4.2.1a). A similar opinion is held by a large proportion of their colleagues. According to Alastair McColl, Helen Smith, Peter White and Jenny Field attitudes of the responding general practitioners' towards evidence based medicine was positive. Most were welcoming towards the current promotion of evidence based medicine, although colleagues were perceived to be less welcoming¹⁰. According to R.M. Harden and P.M. Lilley while doctors researched and accepted scientific advances, they rejected developments in medical education without adequate consideration or investigation³¹.

The attitude of the respondents towards EBME associated objectives (Table 4.2.1b.) when evaluated shows that a large proportion of the respondents support and believe that EBME implementation will improve doctor's competence, patient's care, patient's satisfaction, develop professionalism, make an individual life long learner, promote continuity of professional development. Most agreed that practicing evidence based medicine improved patient care and that research findings were useful in the day to day management of patients. The median value for the estimated percentage of the respondent's clinical practice that was evidence based was 50%¹⁰.

Then respondents in favor of EBME strongly disagree with that teachers do not have to take care of the whole EBME process of EBME and also with that policy makers need not be aware about EBME.

A large proportion of the respondents who very much like or like the idea of EBME in our country also have colleagues who like or very much like the same idea. This positive attitude in large scale reflects the prospect of EBME implementation in future for our country.. There has been as observed association between being in favor of EBME and finding utility of research findings in the professional capacity. This probably

indicates that, a better understanding of the entire concept of EBME is likely to encourage use of scientific up to date information available from local or international sources or vice versa and frequent tendency to use research findings is likely to enhance the support for promotion of EBME. There is an observed positive association between respondents who are very much in favor of promotion of EBME and their support for EBME objectives like enhancement of doctors competence, patients' satisfaction, development of professionalism, becoming life long learner, continuing professional development. According to Peter Cantillon and Roger Jones, continuing medical education was known as "any and all the ways by which doctors learn after formal completion of their training. "Continuing medical education is seen as representing a more teacher based, didactic style whereas continuing professional development implies a more learner centred and self directed approach to learning.

Seventeen of the 18 audits might showed a positive influence on doctor behavior of which only one included data showing the behavior change was sustained.

A much quoted study of a multifaceted educational intervention to improve doctors management of depression and this reduce suicide rates on the island results including a reduction in the suicide rate. A 3 year follows up study, however, showed that the doctors management of depression had deteriorated and that the suicide rate had returned to almost pre-intervention levels. The authors stressed the importance of reinforcing learning. Few studies in this series of 69 did any follow up beyond 3 months.

A group learning approach was the main educational methodology in seven studies. Moran et al describe an interesting learner based group, which was designed to help poorly performing general practitioners³².

According to John A Spencer and Reg K Jordan it is for each medical institute to determine its own educational, aim, analyze the context in which it operates, identify the factors that constrain its operation, and choose the curricular model and teaching and learning methods that suit it best, Provided it is evidence base diversity of approach is a

good thing and to be encouraged. Whatever the detail, a strategy that promotes self directed learning is likely to be the most effective³³.

Clearly documented the fact that respondents who have been in favor of implementation of EBME in our country also disagreed that medical teachers have to take care of knowing the whole process of EBME and that policy makers also have to be aware of EBME. In societies where formal HRD national health workforce plans do not exist, it is necessary to develop an agreed approach between training institutions and employers in both public and private sectors on the sensitive determinations of health needs. In this regard we need to create evidence for medical education through research to develop an effective system or process that will ultimately provide the service sector with personnel who can provide the necessary services to meet identified health needs. Aim of South East Asia-Regional(SEAR) meeting on medical education which was held on 21st and 22 February 200 at Dhaka which was organised by WHO and CME, Dhaka is to provide an opportunity to the member countries of SEAR to bring them together to discuss and share, and if possible to reach a consensus on the medical education process and its relevance to health care delivery. From this meeting it was also expected that; action will be taken by individual countries to develop their education and training strategy on the basis of study findings or evidence, to identify the future role of the countries in adopting programs to plan and develop strategies to make their education evidence-based. The priorities area for discussion were --what should be the overall strategy for medical education?, how could we make medical education evidence-based?, how could we find out the evidence for relevant medical education?, how can different stakeholders take part in the above process? The meeting was concluded with various recommendations among which the following two recommendations are very important fro EBME in Bangladesh-----

- Research on education and training should be given priority and specially the medical educationist should come up in this regard.
- Different research activities to be carried out (opinion survey, longitudinal evaluative study, research on specific key issues, research on general issues eg. ethics, professionalism, communication, multi-centre study in HRD projection etc) both nationally and internationally³

So it reflect that the teachers and the policy makers should be aware of EBME (Table 4.2.1b). Without it, planning, implementation and practice of EBME will not be effective.

The opinion about shifting from traditional to evidence based medical education is supported by a large percentage of the total respondents, among whom greater number prefers using evidence based practice guide line developed by others (Table 4.3.) than learning the skill of EBME. Most of the respondents (57%) thought that the most appropriate way to move from opinion based practice to evidence based medicine was "using evidence based guidelines or protocols developed by colleagues for use by others," while 37% thought it should be by "seeking and applying evidence based summaries" and only 5% "identifying and appraising the primary literature or systematic reviews"¹⁰.

The awareness about the resources available (Journals of both national and international standards) vary. Certain journals are more frequently read or read & used in one's own professional work to a greater extent than other journals (Table 4.4.). The journals more frequently referred to are BMJ, Lancet, Journals of BMRC. Similar study conducted by Alastair et.al showed that the doctors had a low level of awareness of extracting journals, review publications, and databases relevant to evidence based medicine. Only 40% of respondents were aware of the Cochrane Database of Systematic Reviews, 52% of Bandolier, and 60% of Effective Health Care Bulletins¹⁰.

The level of understanding of the technical terms associated with various research papers and scientific works comprehended to different levels by the respondents. (Table: 4.5.). This is a reflection of either ignorance of the terms or less need for day to day basis use of these technical terms in their respective professional work. According to Alastair McColl, Helen Smith, Peter White and Jenny Field understanding of technical terms used in evidence based medicine -Most of the respondents had some understanding of the technical terms used in evidence based medicine, and they felt to know more and was able to explain to others the meaning of some of these terms (Table 4.5). However, only 15% understood publication bias and could explain it to others.

A considerable proportion who did not understand the terms expressed a desire to understand (9-48%). In total 39% had received formal training in critical appraisal¹⁰.

According to tables of 4.6 regarding the influence of background factor like working medical colleges, post graduation, duration of teaching, access to evidence on the components of perception, after doing Chi-Square test, unpaired t-test, one way ANOVA it has been proved statistically as the p value is $< .005$. So having post graduation, duration of teaching, access to evidence has real positive impact on the component of perception on EBME. It also differs in government and private medical colleges in different aspects.

Open Ended Questionnaire:

Major barriers to practice EBME in Bangladesh are computer literacy, easy access to internet, resource constraints(money and materials), lack of proper understanding about the concepts of EBME and how to practice it, lack of well equipped e-library including e-journal, traditional discipline based curriculum, lack of interest among the senior professionals, scarcity of training on concern issues like critical appraisal & bio-statistics, lack of motivation and international co-operation.

According to Alastair McColl, Helen Smith, Peter White and Jenny Field views on major barriers to practicing evidence based medicine -The main perceived barrier to practicing evidence based medicine in general practice was a lack of personal time¹⁰.

According to AN R. Hart and R. M. Harden implementing BEME at the institutional level., for medical education as a whole to move to an ethos of using a best-evidence approach to planning educational programs and interventions, both inertia and resistance both at the level of the institutions involved and at the level of the individual teachers.

Factors encouraging resistance at the individual medical teacher level include: inertia towards change -what's wrong with what we are doing now?, priority of medical practice and research over teaching activities, failure to recognize that education is a science in its own right, ignorance of educational principles, lack of recognition and rewards for teaching activities, lack of educational support and advice services. At the institutional level impediments to using a more evidence-based approach to planning educational programs or interventions include: autonomy of departments and divisions in educational

planning, competition for funds and resources from research and clinical services, lack of long-term evidence for some new educational approaches, lack of an authoritative supportive leader for educational activities. Any individual teacher wishing to move to a more evidence based approach to his or her teaching will need some training and support in applying the component steps of the process.

An infrastructure is needed. Even if there is general agreement to move medical education into a BEME mode and even if there is the best will in the world to do so, it will not happen unless a functional model is developed that is inclusive of all the key international, organizational, institutional and individual players. It will also require an infrastructure to support its inception and ongoing practice³⁴.

Respondents suggested that the practice of EBME in Bangladesh could be facilitated by ---- Computer education, statistics in the undergraduate medical education and training on the same subjects for the present teachers, available facilities of computer and internet access in the institutes, more importance on journal club and availability of all sorts of journals, establishing well equipped e-library with e-journals, re-designing of medical curriculum, training and motivation of concern personnel with strong political commitment, increasing international co-operation.

According to R. M. Harden and P. M. Lilley does this mean that evidence-based teaching is an unrealistic and unattainable goal? The answer has to be an unequivocal no. A meeting of the Association for Medical Education in Europe held in Linköping in August 1999 concluded that medical teachers should endorse the principle of best evidence medical education (BEME) (Hart & Harden, 2000). Best evidence medical education was defined as the implementation by teachers in their practice of methods and approaches to education based on the best evidence available (Harden et al, 1999). This avoids the perceived dichotomy of evidence-based versus non-evidence-based medical education. The meeting highlighted the need for evidence-based teaching (Davies, 2000; Hart & Harden, 2000) and provided a case study of evaluating the evidence on the topic of teaching and learning about communication skills (Aspegren, 1999). Six steps were identified in the practice of evidence-based teaching: framing the question, developing a search strategy, producing the raw data, evaluating the evidence, implementing change and evaluating the change. It is noted that although medical teachers are trained to make

medical decisions based on available evidence when they put on their teachers' hat they seem to abandon their critical thinking about what works and does not.

It is hoped that the best evidence medical education initiative introduced at the AMEE Conference in Linkoping in August 1999 will serve as a catalyst for wide adoption of an evidence-based approach to teaching in medicine (Hart & Harden, 2000). Concurrent with the development of BEME has been a significant initiative in the field of sociology and education. A meeting took place in London at University College, on 15-16 July 1999, under the aegis of the School of Public Policy, to plan and establish an international collaboration to prepare, maintain and promote the accessibility of systematic reviews of research on the effects of social and educational interventions. About 70 people attended from a wide range of social and educational backgrounds. A second meeting is planned to take place in Philadelphia under the Chairmanship of Robert Boruch from the Graduate school of education at the University of Pennsylvania. This initiative, known as the Campbell collaboration, will build on the experience gained in the Cochran collaboration in evidence-based Medicine (EBM).

The implementation of BEME by the teacher will not be easy-the truth is unlikely to be pure and certainly will not be simple. This should not stop him or her, however, from seeking it. Bernard Berenson, in *Essays in Appreciation* (1958), suggested that "between truth and the search for truth, I opt for the second" In best evidence medical education the teacher searches for the truth, as far as it can be ascertained relative to his or her own teaching. The result, it is to be hoped, will be improved teaching and learning and ultimately the improved delivery of health care³⁰.

5.2 Conclusion:

Teachers of the different medical colleges are intelligent enough. They are more knowledgeable and confident about their subjects. Some of them are medical educationists. So they know better about the global advances in medical education than the others who are not medical educationists. The modern teaching technology has been changed from teacher's centered to students centered, information gathering to problem based, discipline based to integrated, hospital based to community based, uniform to elective, apprenticeship-based to systematic, hypothetical to evidence-based. So to be a best teacher one should acquire knowledge on the modern, striking, demanding and need

based global newer concepts. The teachers of the medical colleges should consider education for capability, develop professionalism through continuing medical education to cater the present need of teaching profession considering the global context.

The teachers of the government and private medical colleges should have accountability, transparency and specific career plan for maintaining dynamic working environment and also for job satisfaction.

For practicing EBME they should have knowledge on it specially about the four steps of EBME. With a positive attitude to EBME, better understanding about the technical terms used in EBME, a remarkable awareness about the sources from where they can learn more about EBME and also knowing the best way how they can move from traditional to EBME have changed their perception on evidence based medical education (EBME). Study revealed that perception of teachers on EBME is average and there is significant difference of perception between the teachers of government and private medical colleges in different aspects. To see the difference of perception between government and private medical colleges teachers regarding attitude towards EBME t-test was done and statistically it is significant as $P < .001$, for opinion from moving from traditional to EBME, awareness about the resources of EBME (for medical education journals) and understanding about the technical terms which are usually used in EBME Chi-Square test was done separately and statistically difference was significant as $P < .001$ for each, but for awareness on medical journals the difference is not significant as P is $.075$. Using unpaired t-test, Chi-Square, one way ANOVA it has been revealed that post graduation, duration of teaching, access to evidence has positive impact on the component of evidence based medical education, such as; attitude towards EBME, opinion from moving from traditional to EBME practice, awareness about the resources of EBME and understanding about the technical terms which are commonly used in EBME. In most of the cases $P < .001$. So it is statistically significant also that background factors have influence on perception on EBME.

Computer literacy, access to evidence or internet or online, knowledge on bio-statistics and research methodology, age, having post graduation, duration of teaching and working medical college have been identified as the factors which have effect on perception of the teachers about evidence based medical education (EBME).

5.3 Recommendations of the Study:

- Research on education and training should be given priority and specially the medical educationist should come up in this regard.
- Different research activities to be carried out (opinion survey, longitudinal evaluative study, research on specific key issues, research on general issues eg. ethics, professionalism, communication, multi-centre study in HRD projection etc) both nationally and internationally
- Training program can be developed for teachers for practicing EBME effectively, confidently and competently.
- Establishment of well equipped e-library with e-journal and e-text book, e-class room and database
- Providing available facilities for computers and access of Internet at the institutional level.
- Creating opportunity for availability of different journals
- To practice EBME there should make a change in the medical curriculum from traditional discipline based to problem based or need based incorporating computer education, Bio-statistics and Research methodology.
- Accountability, Transparency and specific career plan for the teachers are needed.
- More recognition or reward or incentive should be given for qualitative teaching activities
- Further study is recommended in large scale for more information to make the evidence based medical education more relevant in Bangladesh.

REFERENCES

1. Majumder AA. To develop a culturally relevant operational model for evaluation of the undergraduate curriculum in the medical colleges of Bangladesh (PhD Thesis). Centre for Medical Education, University of Dundee, 2000:15.
2. Majumder AA. Core competencies for the medical profession in the 21st century. CME Newsletter 2000 Jan;7: 2-3.
3. Preliminary draft report of the South East Asia- regional meeting of WHO on medical education on 21st-22nd February 2000. Dhaka: Centre for Medical Education,2000.
4. William R, Donald A. Evidence based medicine: an approach to clinical problem solving. BMJ 1995;310:1122-26.
5. Bandaranayake D. CME Newsletter 2000 Jan; 7:1 .
6. Norman GR. Reflections on BEME. Med Teach 2000 ;22:141-4.
7. Sackett DL, Richardson WS, Rosenberg W, Haynes RB. Evidence- based medicine: how to practice and teach EBM. New York:Churchhill Livingstone,1997:7-15.
8. Farbey R. Searching the literature : be creative with Medline. BMJ 1993;307:66.
9. Jadad AR, McQuay H. Searching the literature: be systematic in your searching. BMJ 1993;307;66.
10. McColl A, Smith H, White P, Field J. General practitioners' perceptions of the route to evidence based medicine: a questionnaire survey. BMJ 1998;316:361-5.
11. Elnicki DM, Halperin AK, Shockcor WT, Aronoff SC. Multidisciplinary evidence- based medicine journal clubs: curriculum design and participants' reactions. Am J Med Sci 1999;317: 243-6.
12. Welch HG, Lurie JD. Teaching evidence-based medicine: caveats and challenges. Acad Med 2000;75 : 235 - 40.
13. Tonelli MR . The philosophical limits of evidence-based medicine. Acad Med 1998; 73 :1234 - 40.

14. Barnett SH, Kaiser S, Morgan LK, Sullivan J, Siu A, Rose D, et al. An integrated program for evidence-based medicine in medical school. Mount Sinai J Med 2000; 67 : 163 – 8.
15. Leung WC, Whitty P. Is evidence based medicine neglected by royal college examinations? A descriptive study of their syllabuses. BMJ 2000;321:603-4.
16. Elnicki DM, Halperin AK, Shockcor WT, Aronoff SC. Multidisciplinary evidence-based medicine journal clubs: curriculum design and participants' reactions. Am J Med Sci 1999;317:243-6.
17. Olatunbosun OA, Edouard L, Pierson RA. Physicians & rsquo; attitudes toward evidence based obstetric practice: a questionnaire survey. BMJ 1998;316:365-6.
18. Gill P, Dowell AC, Neal RD, Smith N, Heywood P, Wilson AE. Evidence based general practice: a retrospective study of interventions in one training practice. BMJ 1996;312:819-21.
19. Eccles M, Clapp Z, Grimshaw J, Adams PC, Higgins B, Purves I, et al. North of England evidence based guidelines development project: methods of guideline development. BMJ 1996;312:760-2.
20. Dinant GJ. Medicine based evidence, a prerequisite for evidence based medicine. BMJ 1997;315:1109-10.
21. Bauchner H. Evidence-based medicine: a new science or an epidemiologic fad? Pediatrics 1999;103:1029-31.
22. Greenhalgh T. Is my practice evidence-based ? BMJ 1996;313:957-8.
23. Collins JA. Evidence-based medicine and the management of infertility. ORGYN 1998; 3 : 48-51.
24. Ghali WA, Saitz R, Eskew AH, Gupta M, Quan H, Hershman WY. Successful teaching in evidence-based medicine. Med Educ 2000; 34:18-22.
25. Petersen S. Time for evidence based medical education. Tomorrow's doctors need informed educators not amateur tutors. BMJ 1999; 318: 1223-4.
26. Background: history and concepts. In: Oskamp S. Attitudes and opinions. 2nd ed. Englewood Cliffs: Prentice Hall, 1991: 12.

27. Structure and functions of attitudes and beliefs. In: Oskamp S. Attitudes and opinions. 2nd ed. Englewood Cliffs: Prentice Hall, 1991: 76.
28. Talukder MHK. Study on knowledge and awareness on arsenicosis among people in the selected affected and non-affected areas of Bangladesh. National Institute of Preventive and Social Medicine (MPH thesis). Dhaka: Bangladesh, 1997:14.
29. Determination of sample size for estimating proportions. In: Daniel WW. Biostatistics : a foundation for analysis in the health sciences. 4th ed. New York : John Wiley & Sons, 1987:155.
30. Campbell JK, Johnson C. Trends spotting: fashion in medical education. BMJ 1999;318:1272-5.
31. Harden RM, Lilley PM. Best evidence medical education: the simple truth. Med Teach 2000;22:117-9.
32. Cantillon P, Jones R. Does continuing medical education in general practice make a difference? BMJ 1999;318: 1276-9.
33. Spencer JA, Jordan RK. Learner centred approaches in medical education. BMJ 1999;318: 1280-3.
34. Hart IR, Harden RM. Best evidence medical education (BEME): a plan for action. Med Teach 2000;22:131-5.



APPENDICES

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Appendix : aID NO: **Perception of Teachers on Evidence Based Medical Education (EBME) of
Different Medical Colleges in Bangladesh.**

Dear Sir/ Madam,

With due respect, as you know Bangladesh is a signatory of WHO regional meeting on Medical Education on February 2000 to promote Evidence Based Medical Education (EBME) in our medical training and practices. I am trying to get some base line information about this issue. This information will be also helpful to complete my thesis for M.Sc. in Health Professions Education at faculty of medicine of Chulalongkorn university, Bangkok. You can help me in this regard by giving your opinion. Your opinion will be very much helpful to promote evidence based medical education (EBME) in Bangladesh and also to complete my thesis. This information will be kept confidential and not be used other than the research. Your co-operation will be highly appreciated.

With regards.

Sincerely yours'

Dr. Md. Humayun Kabir Talukder**Lecturer,**

Centre for Medical Education (CME)

IPH Building (2nd Floor)

Mohakhali, Dhaka - 1212

Phone : 017534774

Instruction:

Please fill up and tick in the provided box [] for your answer

A. Background information :

1. Age : _____ Years

2. Gender : [] Male [] Female

3. Working medical college: [] Government [] Private

4. Duration of teaching : _____ Years

5. Do you have completed any post graduation degree ? [] Yes [] No

6. Your Position : [] Professor [] Associate Professor [] Assistant Professor
[] Registrar [] Assistant Registrar [] Lecturer

7. Do you have any academic publication in any recognized journal? [] Yes [] No

8. If Yes, Please mention the total number: _____

9. What's about your computer skill ?

[] It is irrelevant to my profession

[] I like to know more about it

[] I am confident enough about it.

10. Have you ever received formal training in search strategy ?

[] Yes [] No

11. If yes, from where?

[] Within your country [] Abroad

12. Have you ever received formal training in critical appraisal?

[] Yes [] No

13. If yes, from where?

[] Within your country [] Abroad

14. Have you attended any academic course related to EBME ?

[] Yes [] No

15. If yes, from where?

[] Within your country [] Abroad

16. Have you attended any of the following activities on evidence based medical education (EBME)? (You can answer more than one)

- Workshop Seminar Conference Study tour
 Journal club Others None

17. Where do you have access to MEDLINE /World wide web?(You can answer more than one)

- No access at all
 At home
 In your medical college
 At the library of BMRC ICDDRDB National medical library
 British council Others

18. How many times in the last year have you (or some one on your behalf) used MEDLINE / World wide web for literature searching?

_____Times.

B. Questions about attitude towards EBME:

19. How would you describe your feelings towards the current promotion of evidence-based medical education?

- Like it very much Like it No opinion
 Don't like it Don't like it at all

20. How would you describe the feelings of majority of your colleagues towards evidence-based medical education?

- Like it very much Like it No opinion
 Don't like it Don't like it at all

21. How useful are research findings in your day to day teaching learning process?

- Very much useful Useful No opinion
 Not useful Not useful at all

22. Practicing evidence-based medical education improve doctor's competence.

- Strongly agree Agree No opinion
 Disagree Strongly disagree

23. Practicing evidence based medical education will improve patient care.

- Strongly agree Agree No opinion
 Disagree Strongly disagree

24. Practicing evidence based medical education will enhance patient's satisfaction.

- Strongly agree Agree No opinion
 Disagree Strongly disagree

25. Evidence based medical education will developed professionalism.

- Strongly agree Agree No opinion
 Disagree Strongly disagree

26. Evidence based medical education will help to become a life long learner.

- Strongly agree Agree No opinion
 Disagree Strongly disagree

27. Evidence based medical education can help for continuing professional development.

- Strongly agree Agree No opinion
 Disagree Strongly disagree

28. Teachers don't have to care about the whole process (Objective, Design, Setting, Subjects, Main out come measures, Data analysis, Results, Discussion and Conclusion) for considering EBME.

- Strongly agree Agree No opinion
 Disagree Strongly disagree

29. Policy makers don't need to aware of evidence based medical education.

- Strongly agree Agree No opinion
 Disagree Strongly disagree

C. Opinion about moving from traditional to evidence based practice:

30. One can move from traditional opinion based practice towards evidence based practice in different ways; from these following alternatives, please tick (✓) in the appropriate box for moving from traditional to evidence based practice.

By learning the skills of evidence based medical education i.e. to identify and appraise the primary literature or systematic reviews oneself;

By seeking and applying evidence based summaries, which give the clinical “bottom line “. Such summaries may be obtained from abstracting journals;

By using evidence-based practice guidelines or protocols developed by colleagues for use by others.

None

31. What do you think about the major barriers to practice EBME in Bangladesh?

32. Please mention how practicing of evidence based medical education could be facilitated in your own settings in Bangladesh context?

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D. Questions on awareness about the resources of EBME:

33. There are some journals relevant to evidence based medical education (EBME).

Please indicate those, which you have used or are aware of— [please tick in the appropriate box]

	Unaware	Aware but not read	Read	Read and use in the area of medical education
a. British Medical Journal (BMJ)				
b. The Lancet				
c. Journal of American Medical Association (JAMA)				
d. Medical Teacher				
e. Medical Education				
f. Community Net Work				
g. Journal of Bangladesh Medical Research Council (BMRC).				
h. Journal of Bangladesh Medical Association (BMA).				

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E. Questions about the understanding of technical term used in EBME:

34. The following are the terms used in papers about evidence based medical education (EBME), which is relevant to practice evidence based medical education (EBME). Please indicate your response to them by giving tick at the appropriate box:

	It is irrelevant to my profession	I like to know more about it	I know it and can explain to others
a. Relative risk			
b. Odds ratio			
c. Systematic review			
d. Meta analysis			
e. Confidence interval			
f. P- value			
g. Validity			
h. Reliability			
i. Sensitivity			
j. Specificity			
k. Publication bias			

Thank you very much for your kind co-operation.

Dr. Md. Humayun Kabir Talukder

Appendix: b

Assessment of Content Validity by Experts

+ 1 = Relatively valid item, 0 = Not sure, - 1 = Relatively invalid item

No of Items	Expert No 1	Expert No 2	Expert No 3	Expert No 4	Expert No 5	Score	Item Correlation (IC)
A. Questions about background information :							
1	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
2	0	+ 1	+ 1	+ 1	+ 1	4	0.8
3	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
4	+ 1	+ 1	+ 1	+ 1	0	4	0.8
5	+ 1	+ 1	+ 1	+ 1	0	4	0.8
6	+ 1	+ 1	+ 1	+ 1	0	4	0.8
7	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
8	+ 1	0	+ 1	+ 1	+ 1	4	0.8
9	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
10	+ 1	0	+ 1	+ 1	+ 1	4	0.8
11	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
12	+ 1	0	+ 1	+ 1	+ 1	4	0.8
13	+ 1	+ 1	+ 1	+ 1	0	4	0.8
14	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
15	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
16	+ 1	0	+ 1	+ 1	+ 1	4	0.8
17	+ 1	0	+ 1	+ 1	+ 1	4	0.8
18	+ 1	+ 1	+ 1	+ 1	0	4	0.8

B. Questions about attitude towards EBME :							
19	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
20	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
21	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
22	+ 1	+ 1	+ 1	+ 1	0	4	0.8
23	+ 1	+ 1	+ 1	+ 1	0	4	0.8
24	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
25	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
26	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
27	+ 1	+ 1	+ 1	+ 1	0	4	0.8
28	+ 1	+ 1	+ 1	+ 1	+ 1	5	1
29	+ 1	+ 1	+ 1	+ 1	+ 1	5	1

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VITAE

Dr. Md. Humayun Kabir Talukder was born on May 5, 1965 in Morrelgonj thana under Bagerhat district of Bangladesh. He was graduated from Sher-E-Bangla Medical College, Barishal under the Dhaka University in 1992 after accomplishment of a five years course with one-year internship program and earned the Bachelor of Medicine & Bachelor of Surgery (MBBS). After graduation he was involved in private job. In the year 1996 he was admitted in 2 years Masters in Public health (MPH) course at National Institute of Preventive and Social Medicine (NIPSOM) at Dhaka under the Dhaka University and achieved MPH in 1997. After doing post graduation (MPH) he got a government job as a lecturer in education science at Centre for Medical Education (CME) Mohakhali, Dhaka. After joining at CME he received training on Teaching Methodology, Educational Research Methodology, Quality Assurance in Medical Education, Health Ethics. He was awarded WHO fellowship for one year at the Faculty of Medicine, Chulalongkorn University on Teaching Technology in Education Science. Lastly he was enrolled in the Master Degree Program of Health Development in Health Professions Education at the Faculty of Medicine of Chulalongkorn University in the session 2000-2002. His Principal research interest was to see the perception on evidence based medical education (EBME) among the teachers of different medical colleges of Bangladesh.

He was the co-ordinator for the development of Bachelor of Dental surgery (BDS) Curriculum and curriculum for the Medical Assistants Training (MAT) course in Bangladesh.

Dr. Talukder presented five papers at national and international conferences. He had five publications in different national and international journals. Since 1996 he had conducted total nine researches out of those four researches as principal investigation and five as co-investigator.