

## Clinicians' Awareness and Use of Evidence-based Medicine Resources: A Study at Kasturba Medical College, Manipal

Mahabaleshwara Rao Baikady and Jessy A.

*Manipal University, Manipal, Karnataka-576 104*  
*E-mail: baikadi@yahoo.com, jessysav@yahoo.com*

### ABSTRACT

The study was conducted to evaluate user needs and awareness of aspects of evidence-based medicine (EBM) resources – their features, utility, and the areas covered under various facets of clinical practice and patient care by the clinicians (faculty members and postgraduate students) of Kasturba Medical College (KMC), Manipal. The EBM resources provide the expertise and practical knowledge of top physicians, researchers and leading academic experts worldwide, and KMC health sciences library subscribe various EBM resources. The data collection was performed using self-administered questionnaire to faculty members and postgraduate students from eight clinical departments of KMC, and included a total of 74 participants. Evaluating the different EBM resources at work revealed that 'UpToDate', 'PubMed/Medline', and 'MD Consult' always came first in user-preference. The results of data analysis and summary of responses and suggestions for effective utilisation of the EBM resources gathered from the survey are presented. The outcomes pointed that clinicians possessed awareness of several EBM resources subscribed by KMC Health Sciences Library as well as from the external sources. The summarised data and the ideas gathered from the survey are helpful to propose a few suitable recommendations for effective utilisation of the EBM resources available in the KMC Health Sciences Library.

**Keywords:** Evidence-based medicine, EBM resources, clinicians, health sciences library, Kasturba Medical College

### 1. INTRODUCTION

The term 'Evidence-based Medicine' (EBM) was introduced by Gordon Guyatt<sup>1</sup>. Since then, it has become an increasingly pervasive term in healthcare-related areas. The EBM is defined as 'the integration of best research evidence with clinical expertise and patient values'<sup>2</sup>. The EBM focuses upon a disease-based model of decision making, whereas evidence-based health-care is focused on flexibility in choice of methods and its similar service models. The EBM tries to reduce dependence upon the traditional medical model of expert authority of accumulated clinical experience.

It helps to enhance the efficiency of clinicians by identifying resource-intensive maneuvers for adoption with minimal expenditure of time. It also provides identical strategies that can be followed by undergraduate and postgraduate education, as well as continuing medical education (CME) for professionals. Four important steps in EBM are:

- Formulate a clear clinical question from a patient's problem
- Search the literature for relevant clinical articles

- Evaluate (critically appraise) the evidence for its validity and usefulness
- Implement useful findings in clinical practice

The EBM database provide sound basis for eliminating anecdotal and uncertain information. The EBM resources provide the expertise and practical knowledge of top physicians and researchers from leading academic and medical centres worldwide.

Following are some of the EBM resources available for the clinicians:

- *UpToDate*: It is an evidence-based, physician-authored clinical knowledge system which clinicians trust to make the right point-of-care decisions<sup>3</sup>. It is an online clinical decision support system assisting clinicians throughout the world provide the best patient care. It is a clinical information resource which offers fully referenced expert answers to patient-care, diagnosis and treatment questions. Topic reviews are written by recognised authorities who review the topic, synthesise the evidence, summarise key findings and provide specific recommendations
- *MD Consult*: It offers the comprehensive information available in one convenient online resource.

It comprises full-text articles from over 80 medical journals and clinics, 50 leading medical references across a wide range of specialties, clinically relevant drug information, and over 15,000 patient handouts, etc.

- *Cochrane Library Online*: It is a single source of reliable evidence about the effects of health-care. It contains all existing systematic reviews plus increasingly wider range of new updated reviews.
- *PubMed/MEDLINE*: It includes abstracts, short technical summaries of more than 22 million scientific articles in medicine and health.
- *BMJ Best Practice*: It is a new concept for information delivered at the point of care. It provides up-to-date, fast and reliable information to healthcare professionals while making diagnosis and treatment decisions. The sources combined the latest research evidence, guidelines and expert opinion—presented in a step-by-step approach, covering prevention, diagnosis, treatment, and prognosis.
- *BMJ Case Report*: It published a high volume of cases in all disciplines so that healthcare professionals, researchers and others can easily find clinically important information on common and rare conditions.
- There are many EBM resources available for the EBM practitioners, a few examples are:
  - *Medscape Reference*
  - *Annals of Internal Medicine*: ACP Journal Club
  - Database of Abstracts of Reviews of Effect (DARE)
  - National Guideline Clearinghouse
  - *DynaMed*

## 2. LITERATURE REVIEW

Several studies have examined the value and contribution of EBM resources for helping clinicians in patient care and faster decision making as well as sharing experience in the community of medical professionals.

Akobeng<sup>4</sup> explains the concept of EBM and introduces the five step EBM model: (a) formulation of answerable clinical questions; (b) searching for evidence; critical appraisal; (c) applicability of evidence; and (d) evaluation of performance. The main concern is to provide a practical demonstration of the five step EBM model using a real-life clinical scenario. Ely<sup>5</sup>, *et al.* suggested that clinical resource developers could use the recommendations made by practicing physicians to provide resources that are more useful for answering clinical questions. This is to identify the most frequent obstacles preventing physicians from answering their patient-care questions

and the most requested improvements to clinical information resources.

Bonis<sup>6</sup>, *et al.* pointed out that hospitals with access to 'UpToDate' were associated with significantly better performance than other hospitals. This indicates that electronic-clinical knowledge support systems have decreased barriers to answering clinical questions.

Lucas<sup>7</sup>, *et al.* in their study revealed that searching the EBM literature could improve the treatment of many medical inpatients, including those already receiving evidence-based treatment. The study also shows that attending physicians changed treatment of eligible patients as a result of the literature searches. Lockwood<sup>8</sup>, *et al.* revealed that incorporation of EBM meetings into routine practice has resulted in treatment guidelines being more closely based on published evidence and improvements to care of patients.

According to Sackett<sup>9</sup> adopting the practice of EBM resources, is believed to significantly improve the primary care and evidence-based practice also supports decision-making shared with users, which is already favoured within the medical community as the ideal of decision making. Verhoeven & Schuling<sup>10</sup> indicated that an evidence-based answering service can have an impact on GPs, and their patients.

McCull<sup>11</sup>, *et al.* in their study suggested that clinicians welcomed EBM, and agreed that its practice improves patient care. Rosenberg & Donald<sup>12</sup>, discussed EBM as a process of turning clinical problems into questions and then systematically locating, appraising, and using contemporaneous research findings as the basis for clinical decisions. The computerisation of bibliographies and the development of software that permits the rapid location of relevant evidence have made it easier for busy clinicians to make best use of the published literature. Another problem discussed is that Medline and the other e-databases used for finding relevant evidence are not comprehensive and are not always well indexed and even a lengthy literature search is fruitless. For some older doctors the computer skills needed for using databases regularly may also seem to be challenging. Kim<sup>13</sup>, *et al.* showed that an EBM curriculum focused on critical appraisal skills and use of evidence-based resources significantly improved EBM knowledge and changed resident use of information resources.

Drug Week editors, staff, and reporters summarises that 'UpToDate' is an evidence-based resource providing fast, accurate clinical answers to physicians and other medical professionals at the point of care<sup>14</sup>. Close-Up Media<sup>15</sup>, in their study revealed that 'UpToDate' decision support is a customisable order set authoring and management solution that provides integration into clinical processes to streamline

the delivery of standardised care for improved patient safety, outcomes, clinician performance and regulatory compliance.

Another study pointed out that numerous studies demonstrated clinical value of 'UpToDate'<sup>16</sup>. These new findings support dozens of previous studies which demonstrate 'UpToDate' answers clinical questions, improves patient care and improves hospital outcomes. McKibbin & Bayley<sup>17</sup> suggested that clinicians need more skills in efficiently and effectively finding the materials they need for evidence-based practice.

The review of literature reveals that clinicians welcomed EBM and agreed that it helps to improve patient care.

### 3. KASTURBA MEDICAL COLLEGE, MANIPAL

Kasturba Medical College (KMC) is based in Manipal, Udupi District, Karnataka. KMC was established on June 30, 1953. Dr T.M.A. Pai (1898–1979), physician, educationist, banker, and philanthropist, was the founder, and builder of modern Manipal. He established educational, medical, banking and industrial enterprises of national importance and repute.

The KMC is the first college in the private sector and ranks among the top 10 medical colleges in the country today. Students from 52 countries have graduated from the college, and its degrees are recognised worldwide. Previously, KMC was under the purview of the Mangalore University. In 1993, the government of India granted Deemed University status to Manipal University (formerly known as MAHE) which saw KMC coming under its wing.

#### 3.1 KMC Health Sciences Library, Manipal

The KMC, Manipal has an excellent Health Sciences Library (HSL). The state of the art library stretching over 1.5 lakh square feet, on five levels is a domain for information seekers; be it students, faculty or researchers. It has the capacity to accommodate 1300 students at a time. Besides the comfortable seating and reading environment, the library is well equipped with modern facilities such as e-learning, access to internet and web resources including online journals and e-books. Library is providing a growing range of databases available in electronic form on the campus network. All the library services have been automated. The library has fully computerised its collection, which could be accessible through OPAC. The library is enabled with Wi-Fi technology and security systems with closed circuit television system (CCTV). There is a separate audio-visual room, computer lab, group study area and private study area in the library.

The HSL is committed to provide a world-class information support to its users. Library services in KMC Health Science Library include: reference service, current awareness service, circulation, photocopying,

fax, audio–video viewing, inter-library loan/document delivery, computer service, CD-ROM access, internet access/Wi-Fi, e-learning center, etc.

The KMC HSL provides physical as well as virtual access to books, journals, and other materials to the faculty and students with very strong collection. The collection comprises mainly of books, theses, current journals, back volumes of journals, audio-video cassette, CDs, online databases, online journals, etc. The collection is heavily used by the faculty, students and research scholars. Users can browse online journals, online databases in intranet environment anywhere on the campus on campus network. Following are the e-resources presently subscribed by the library:

- Science Direct
- Scopus
- MD Consult
- OvidSP
- ProQuest Medical Library
- UpToDate Clinical Information Recourse
- BMJ Case Reports
- BMJ Best Practice
- Cochrane Library Online
- IDIS Drug Information Database
- CINHALL Plus with Full Text
- J-Gate Plus
- Online journals of various publishers (Elsevier Science, Lippincott, Wiley-Blackwell, Springer Link, Informa Healthcare, Karger, Thieme, BMJ, Oxford University Press, Sage, Nature, etc.)
- e-Books of various publishers (Elsevier Science, Lippincott, etc.)

### 4. OBJECTIVES OF STUDY

The objectives of the present study are to:

- Know the awareness of EBM resources by the clinicians at KMC.
- Assess the utility of EBM resource in day to day patient care by the clinicians.
- Analyse whether the EBM resource support answering the clinical questions (diagnostics, treatment and patient care).

#### 4.1 Scope and Limitations

The study intends to limit to clinical departments of KMC, Manipal. Following clinical departments are selected for the study:

- Cardiology
- Clinical Genetics
- Dermatology
- General Medicine

- General Surgery
- Obstetrics and Gynecology
- Pediatrics
- Psychiatry

The target population of this study is faculty and postgraduate students in the clinical departments of KMC included a total of 301 practitioners. Faculty members include Tutors, Lecturers, Assistant Professors, Associate Professors, and Professors. The Postgraduate students who are doing master degree courses (MD, MS, and DM) in various specialisations are also targeted for the study.

**5. METHODOLOGY**

The tool used for data collection is the self-administered questionnaire. The study started with literature survey that included online searching. One set of questionnaire is constructed to distribute among the clinicians and postgraduate students of the clinical departments of KMC, Manipal. The total number of questionnaire distributed were 110 and total number of questionnaires duly filled and received was 74 (67.28 %) which included 20 faculty members (27 %), and 54 postgraduate students (73 %). The data thus collected was classified, tabulated and analysed for representation in the study. The software, Microsoft Excel and Statistical Package for Social Sciences (SPSS) version 16.1 were employed for data analysis.

**6. MAJOR FINDINGS**

The major findings of the study are:

**6.1 Awareness about EBM Resources**

Study observed that 44.6 % to 93.2 % of respondents were aware of various EBM resources available in the KMC Health Sciences Library. Of this least number of respondents (44.6 %) indicated awareness about BMJ Case Reports. Majority of the participants (94.6 %) were aware of PubMed/MEDLINE resource. This shows that the participants were familiar with PubMed EBM resource before library subscribed to other evidence-based resources. Study also reveals that 85.1 % of participants were aware of UpToDate EBM resource which the

**Table 1. Awareness about EBM resources**

EBM resources	Frequency	Percentage (%)
UpToDate	63	85.1 %
MD Consult	69	93.2 %
Cochrane Library	49	66.2 %
PubMed/MEDLINE	70	94.6 %
BMJ Best Practice	40	54.1 %
BMJ Case Reports	33	44.6 %
Other Resources	11	14.9 %

library started subscription from the year 2012. This indicated that the clinicians were eager to use new EBM resources for updating information available in their field. Table 1 gives more details in this regard.

**6.2 Most Preferred EBM Resources**

The study revealed that most preferred EBM resource by a vast majority of respondents was UpToDate by 45.9 % (Table 2). The increase in preference and awareness of UpToDate shows the importance of this resource in clinical practice and patient care. The study further indicated that 24.3 % of respondents most preferred MD Consult whereas 23 % most preferred PubMed/MEDLINE.

**6.3 Frequency of Utilisation EBM Resources in Work**

Table 3 shows that clinicians were used EBM resources daily, except Cochrane Library Online. UpToDate was accessed daily by more participants. All participants were used EBM resources at least 2-3 times a week. This revealed the important of using EBM resources in patient care, diagnosis, reference and studies. One of the objectives of the study to assess the utility of 'EBM' resources in day to day patient care by the physicians, is met by this outcome.

**6.4 Competence in Using EBM Resources**

Evaluation of competence in using EBM resources was included in the study. 52.7 % of the respondents

**Table 2. Most preferred EBM resources of the respondents**

EBM resources	Ranking (Overall n=74)						
	1	2	3	4	5	6	7
UpToDate	34 (45.9 %)	15 (20.3 %)	5 (6.8 %)	2 (2.7 %)	3 (4.1 %)	2 (2.7 %)	13 (17.6 %)
MD Consult	18 (24.3 %)	26 (35.1 %)	13 (17.6 %)	5 (6.8 %)	0	1 (1.4 %)	11 (14.9 %)
Cochrane Library	2 (2.7 %)	7 (9.5 %)	18 (24.4 %)	15 (20.3 %)	5 (6.8 %)	6 (8.1 %)	21 (28.4 %)
PubMed/MEDLINE	17 (23.0 %)	16 (21.6 %)	13 (17.6 %)	12 (16.2 %)	1 (1.4 %)	3 (4.1 %)	12 (16.2 %)
BMJ Best Practice	2 (2.7 %)	1 (1.4 %)	5 (6.8 %)	6 (8.1 %)	20 (27.0 %)	4 (5.4 %)	36 (48.6 %)
BMJ Case Reports	0	2 (2.7 %)	2 (2.7 %)	8 (10.8 %)	8 (10.8 %)	14 (18.9 %)	40 (54.1 %)



**Table 3. Frequency of utilisation of EBM resources by the respondents in their work**

EBM resource	Frequency (overall n=74)					
	Daily	2-3 times a week	2-3 times a month	Rarely	Never	Not responded
UpToDate	15 (20.3 %)	26 (35.1 %)	10 (13.5 %)	10 (13.5 %)	7 (9.5 %)	6 (8.1 %)
MD Consult	6 (8.1 %)	34 (45.9 %)	17 (23 %)	6 (8.1 %)	2 (2.7 %)	9 (12.2 %)
Cochrane Library	0	10 (13.5 %)	20 (27 %)	21 (28.4 %)	6 (8.1 %)	17 (23 %)
PubMed/MEDLINE	10 (13.5 %)	24 (32.4 %)	19 (25.7 %)	14 (18.9 %)	0	7 (9.5 %)
BMJ Best Practice	1 (1.4 %)	8 (10.8 %)	13 (17.6 %)	14 (18.9 %)	14 (18.9 %)	24 (32.4 %)

were expert in using PubMed/MEDLINE, where as 50 % of the participants were expert in using UpToDate, while 47.3 % in MD Consult (Table 4).

**6.5 Reasons for Use of EBM Resources**

This study revealed that more respondents used EBM resources in their work for reference purpose (71.6 %) followed by clinical practice (51.4 %) and support for teaching related activities (44.6 %).

Study further revealed that among the 20 faculty members who participating in the survey, 13 (65 %) were used EBM resources mostly for teaching, clinical practice and reference purposes. At the same time, among the 54 postgraduate students

participating in the survey, 40 (54.1 %) were had mainly used the EBM resources for reference and 25 (45.5 %) for clinical practice and examination purposes respectively (Table 5).

Table 6 highlights the reasons for use of EBM resources by the faculty members. Table 7 highlights the reasons for use of EBM resources by the postgraduate students.

**6.6 Reasons for the Choice of EBM Resources for Clinicians' Work**

As per the findings (Table 8), easy accessibility of information through EBM resources was the main reason for the choice. 35.1 % of participants

**Table 4. Competence in using EBM resources**

EBM resources	Rating of competence (overall n=74)			
	Expert	Beginner	Unable to use	Not responded
UpToDate	37 (50 %)	24 (32.4 %)	4 (5.4 %)	9 (12.2 %)
MD Consult	35 (47.3 %)	29 (39.2 %)	0	10 (13.5 %)
Cochrane Library	14 (18.9 %)	38 (51.4 %)	5 (6.8 %)	17 (23 %)
PubMed/MEDLINE	39 (52.7 %)	23 (31.1 %)	3 (4.1 %)	9 (12.2 %)
BMJ Best Practice	14 (18.9 %)	26 (35.1 %)	3 (4.1 %)	31 (41.9 %)
BMJ Case Reports	10 (13.5 %)	25 (33.8 %)	2 (2.7 %)	37 (50 %)

**Table 5. Reasons for use of EBM resources by the participants**

S. No.	Reasons for use of EBM resources-overall (n=74)	Participants (%)	Not responded	Total participants
1.	To support teaching related activities	33 (44.6 %)	41 (55.4 %)	74
2.	Clinical practice	38 (51.4 %)	36 (48.6 %)	74
3.	For reference and verification/confirmation	53 (71.6 %)	21 (28.4 %)	74
4.	Personal research/writing paper	28 (37.8 %)	46 (62.2 %)	74
5.	Professional research activities	24 (32.4 %)	50 (67.6 %)	74
6.	Examination purposes	27 (36.5 %)	47 (63.5 %)	74

**Table 6. Reasons for use of EBM resources by the faculty members**

S. No.	Reasons for using EBM resources-faculty members (n=20)	Participants (%)	Not responded	Total participants
1.	To support teaching related activities	13(65 %)	7(35 %)	20
2.	Clinical practice	13(65 %)	7(35 %)	20
3.	For reference and verification/confirmation	13(65 %)	7(35 %)	20
4.	Personal research/writing paper	9(45 %)	11(55 %)	20
5.	Professional research activities	8(40 %)	12(60 %)	20
6.	Examination purposes	2(10 %)	18(90 %)	20

selected EBM resources for their work because of reliability of source of information whereas 28.4 % supported it for the accuracy of content. Least number of respondents considered the availability of peer reviewed data as the basis of their choice.

### 6.7 Assessment of Content Updating of EBM Resources

Study revealed that 60.8 % of participants agreed that EBM resources is updating its content for current translational research, case studies, diagnosis and other relevant information (Table 9). At the same time, 17.6 % participants strongly agreed to this.

### 6.8 Impact of EBM Resources in Clinical Decision Making

Table 10 shows the participants' opinion about impact of EBM resources on aspects of clinical decision making such as speed of decision taking, reduction of barriers to finding answers, improving decision making in new cases, etc. It is found that more participants (50 %) were of the opinion that EBM resources decreased barriers to answering clinical questions. This reveals the immense utility of the resource for the above purpose at the point of clinical decision making.

**Table 7. Reasons for the use of EBM resources by the PG students**

S. No.	Reasons for use of EBM resources – PG students (n=54)	Participants (%)	Not responded	Total participants
1.	To support teaching related activities	20 (27 %)	34 (45.9 %)	54
2.	Clinical practice	25 (46.3 %)	29 (53.7 %)	54
3.	For reference & verification/confirmation	40 (54.1 %)	14 (18.9 %)	54
4.	Personal research/writing paper	19 (25.7 %)	35 (47.3 %)	54
5.	Professional research activities	16 (21.6 %)	38 (51.4 %)	54
6.	Examination purposes	25 (46.3 %)	29 (53.7 %)	54

**Table 8. The reasons for the choice of EBM resources for respondents work**

Rate of choice of EBM resources (overall n=74)	EBM resources	Not responded	Total
Easy accessibility	34 (45.9 %)	40 (54.1 %)	<b>74</b>
Accuracy of content	21 (28.4 %)	53 (71.6 %)	<b>74</b>
Reliability of source of information	26 (35.1 %)	48 (64.9 %)	<b>74</b>
Availability of peer reviewed data	15 (20.3 %)	59 (79.7 %)	<b>74</b>
Full text availability	19 (25.7 %)	55 (74.3 %)	<b>74</b>
All the above	25 (33.8 %)	49 (66.2 %)	<b>74</b>

Thus the majority of participants supported the proposition indicating the importance of EBM resources in research, case studies and diagnosis in clinical practice as it updates its content regularly. Not a single participant showed disagreement to the view.

47.3 % participants supported the idea that by using EBM resources, decision making has become faster and others held the view that it improved decision making. The same was suggested by Bonis<sup>6</sup>, *et al.* in their article 'hospitals with access to EBM

**Table 9. Assessment of content updating of EBM resources in current translational research, case studies, diagnosis and other relevant information**

	Assessment of content (overall n=74)				
	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
EBM resources	13 (17.6 %)	45 (60.8 %)	10 (13.5 %)	0	0
Not responded	61 (82.4 %)	29 (39.2 %)	64 (86.5 %)	74 (100 %)	74 (100 %)
<b>Total</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>

**Table 10. Impact of the subscription of EBM resources in clinical decision making**

Rating of impact (overall n=74)	EBM resources	Not responded	Total
Decision making has become faster	35 (47.3 %)	39 (52.7 %)	<b>74 (100 %)</b>
Decreased barriers to answering clinical questions	37 (50 %)	37 (50 %)	<b>74 (100 %)</b>
Number of patients examined, have increased	5 (6.8 %)	69 (93.2 %)	<b>74 (100 %)</b>
Improved decision making in new cases	29 (39.2 %)	45 (60.8 %)	<b>74 (100 %)</b>
Shortened the hospital stay/duration for patient	4 (5.4 %)	70 (94.6 %)	<b>74 (100 %)</b>

resources were associated with significantly better performance than other hospitals' clearly supporting the outcome. The study also showed that 6.8 % of participants suggested that the number of patients examined have increased and the least number of the participants agreed with the view that its usage shortened the hospital stay of patients. Respondents in each category indicated the impact of EBM resources in all area of clinical practice.

**6.9 Analysis of EBM Resources Standards of Excellence**

Majority of the participants agreed that standards of excellence expected by the clinicians were met by EBM resources (Table 11) whereas 17.6 % of the participants 'strongly agreed' with this view. The data collected in relation to EBM resources, without doubt, indicated to the standards of excellence of the resource.

**6.10 Evaluation of EBM Resources for Enhancing Patient Care/Hospital Quality**

The study found that EBM resources enhance patient care as well as hospital quality (Table 12) from the response of participants. The view was shared by Lockwood<sup>8</sup>, *et al.* in their study. In this

28.4 % supported UpToDate and 27 % supported MD Consult. Evaluating the different EBM resources at work also revealed that UpToDate, PubMed/Medline and MD Consult always came first in preference.

**7. SUGGESTIONS**

- It is important to highlight the main features of each EBM resources that are required to guide the users and to train them on how to access these features. There are various means to communicate this information, viz., display of posters highlighting EBM resources through the notice boards of the library and various medical departments, through bulletin boards, posters at strategic locations as well as video clippings made available through the intranet portal.
- There is a need for conducting more sessions on information literacy for creating awareness on EBM resources available in the KMC HSL. These sessions on the relevant EBM resources should be held preferably at the various clinical departments of KMC, Manipal to increase participation of clinicians and postgraduates.
- Suggestions made by postgraduates indicate necessity for addressing the specific requests

**Table 11. Analysis of EBM resources standards of excellence**

	Analysis of standards (overall n=74)				
	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
EBM resources	13 (17.6 %)	40 (54.1 %)	12 (16.2 %)	2 (2.7 %)	0
Not applicable	61 (82.4 %)	34 (45.9 %)	62 (83.8 %)	72 (97.3 %)	74 (100 %)
<b>Total</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>

**Table 12. Evaluation of EBM resources for enhancing patient care as well as hospital quality**

	Participants (%) (overall n=74)				
	Strongly agree	Agree	Uncertain	Disagree	Strongly disagree
EBM resources	10 (13.5 %)	47 (63.5 %)	11 (14.9 %)	0	0
Not responded	64 (86.5 %)	27 (36.5 %)	63 (85.1 %)	74 (100 %)	74 (100 %)
<b>Total</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>	<b>74 (100 %)</b>

category no participants disagreed, indicating the participants' positive attitude towards the EBM resources in enhancing patient care as well as hospital quality.

**6.11 Importance of Different EBM Resources**

The study on the evaluation of importance of the different EBM resources by the respondents at their work indicated that 43.2 % rated PubMed/Medline and 39.2 % rated UpToDate in the highly important category. 37.8 % rated MD Consult and 23 % Cochrane Library in this category. Least importance has been given to BMJ Best Practice by 12.2 %.

It was further noted that 31.1 % have rated PubMed/Medline in the important category whereas

for help in finding/locating the users' subject topics provided by the EBM resources such as PubMed, MD Consult and UpToDate in the library floors where facilities for their use are made available. Training the staff members of the library, to equip them to meet the challenge is a priority.

- Provision of mobile alert can be employed as a mechanism for more effective means of disseminating information pertaining to the EBM resources, their access or the literacy sessions and updates. Highlights pertaining to EBM resources could also be e-mailed to the medical community of all departments for wider circulation.

- There is a need to install more computers at the reference section for accessing EBM resources. This will help to collect supplementary information while consulting textbooks for referencing.
- Individual training sessions may be provided by the library to those among clinicians who may require supplementing the computer skills needed for accessing the databases, for their maximal utilisation.
- Collection of regular feedback of users at definite points of time through e-mail and other means to identify user awareness, perception and needs is of importance.

## 8. CONCLUSIONS

The outcome of the survey highlights various aspects of user perception, awareness and requisites for the use of EBM resources and its role in various facets of clinical practice. The finding from the study pointed to the fact that clinicians possessed awareness of several EBM resources subscribed by KMC Health Sciences Library (HSL) and also from the external sources. The respondents were keenly interested in exploring the newly available EBM resources in the KMC HSL for procuring information pertaining to clinical decision making from the updates of current translational research, case studies, diagnosis and other relevant information. This is evident from the high response of the clinicians to 'UpToDate' resource that is being subscribed only from the year 2012, as shown by the preference for it and the daily usage.

The KMC HSL has many subscribed EBM resources, from various publishing groups that have been proven useful in patient care and treatment. The initiatives to provide awareness to the users, enhancing their search skills and other appropriate steps to achieve the goal of optimal utilisation of EBM resources available at the KMC HSL by the medical community, is an ongoing effort. In this regards, the KMC HSL makes its contribution to the accomplishment of the mission and goals that its parent organisation had set to achieve.

## REFERENCES

1. Guyatt, G.H. Evidence-based medicine. *Annals Inter. Medicine, ACP J. Club*, 1991, **114**(Suppl. 2), A-16.
2. Sackett, D.L.; Straus, S.E. & Richardson, W.S. Evidence-based medicine: How to practice and teach EBM. Churchill Livingstone, Edinburgh, 2000 (Ed. 2), pp. 261.
3. www.wolterskluwerhealth.com
4. Akobeng, A.K. Principles of evidence-based medicine. *Arch Dis Child*, 2005, **90**(8), 837-40.
5. Ely, J.W., *et al.* Answering physicians' clinical questions: Obstacles and potential solutions. *J. American Med. Inform. Assoc.*, 2005, **12**(2), 217-24.
6. Bonis, P.A., *et al.* Association of a clinical knowledge support system with improved patient safety, reduced complications and shorter length of stay among medicare beneficiaries in acute care hospitals in the United States. *Int. J. Med. Inform.*, 2008, **77**(11), 745-53.
7. Lucas, B.P., *et al.* The impact of evidence on physicians' inpatient treatment decisions. *J. Gen. Intern. Med.*, 2004, **19**(5 Pt 1), 402-09.
8. Lockwood, D.; Armstrong, M. & Grant, A. Integrating evidence-based medicine into routine clinical practice: Seven years' experience at the Hospital for Tropical Diseases. *BMJ*, 2004, **329**(7473), 1020-23.
9. Sackett, D.L. So little time, and. ... *Evidence-Based Medicine*, 1997, **2**, 39.
10. Verhoeven, A.A. & Schuling, J. Effect of an evidence-based answering service on GPs and their patients: A pilot study. *Health Info. Libr. J.*, 2004, **21**(Suppl 2), 27-35.
11. McColl, A., *et al.* General practitioner's perceptions of the route to evidence-based medicine: A questionnaire survey. *BMJ*, 1998, **316**(7128), 361-65.
12. Rosenberg, W. & Donald, A. Evidence-based medicine: An approach to clinical problem-solving. *BMJ*, 1995, **310**(6987), 1122-26.
13. Kim, S.; *et al.* Impact of an evidence-based medicine curriculum on resident use of electronic resources: A randomised controlled study. Published online. 4 September 2008.
14. Drug Week Editors. UpToDate; IASIS Healthcare selects UpToDate (R) as clinical decision support tool for its hospitals. *Drug Week*. <http://www.newsrx.com/>, NewsRx.com. 25 June 2010.
15. Close-Up Media, Inc. (accessed in April 2012).
16. Elder Law Weekly. Medicare and Medicaid; Researchers at Harvard University Report the Adoption of UpToDate(R) by Hospitals is Directly Associated with Shortening Patient Stays and Saving Lives. 2011 Nov 30: 90.
17. McKibbin, K.A. & Bayley L. Health professional education, evidence-based health-care, and health sciences librarians. *Ref. Serv. Rev.*, 2004, **32**(1), 50-53.



## About the Authors

**Dr Mahabaleshwara Rao Baikady**, Assistant Professor and Senior Librarian, Dept. of Library & Information Science and Health Sciences Library, Manipal University, Karnataka has completed his PhD from Mangalore University, Mangalore in 2011 specialisation being on user study. He was graduated from Crossland College, Brahmavara and MA from Karnatak University, Dharwad. He has done both BLIS and MLIS from Annamalai University. He has presented 19 papers in National and International

Seminars/Conferences and has published 10 papers in National/international journals. His areas of interest include: Health sciences librarianship, web resource and information literacy.

**Ms Jessy A.** is a Research scholar at the Dept. of Library and Information Science, Manipal University, Manipal. She obtained her BA from Calicut University, Calicut and BLIS and MLIS from Manipal University, Manipal. She has presented 3 papers in National and International Seminars/Conferences.