

Implementation of evidence based medicine nursing essay



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This report is aimed at looking at the challenges that Evidence-based medicine faces today in terms of its implementation. In order to achieve this, there was a need to first understand the origin and definition of EBM, the different arguments for its existence and finally deciding exactly what to focus on.

In this case, a number of different healthcare environments were taken into consideration. These include:

Healthcare policy makers

Clinical Education

Healthcare organisations- specifically hospitals

Primary care setting- specifically clinicians and patients

Innovation in healthcare

A literature review was then conducted targeting these specific environments while still focusing on the challenges EBM faces during implementation. Four main databases (Cochrane Library, Web of Knowledge, MEDLINE and EMBASE) were used to find and retrieve relevant studies. To find these studies, several keywords had to be used in different combinations. An inclusion criteria also had to be set in order to minimise the amount of results gotten at the end of the search and to maximise the investigative topic of the review. This resulted in 24 studies, which were then retrieved for further analysis and discussion.

Although the papers did not all have the same aim and objectives, they did have some aspects in common and these aspects brought about a number of recommendations that will help in the management of the challenges or even to an extent try to reduce it.

Finally, the report proved that the problem that is faced by many is not so much that the principles of EBM are inconsistent, but that applying and furthermore implementing EBM in policy or clinical practice is proving to be very challenging.

As a general conclusion, although EBM still has too many barriers in its way, its positive impacts are just starting to be validated and it will continue to be validated and consequently evolve in the future.

Contents

1. Introduction

1. 1 Background and definition of Evidence-based Medicine (EBM)

The philosophical origins of Evidence-based medicine (EBM) extend back to mid-19th century Paris and even some people say as early as the assessment of evidence in research during the reign of the Chinese Emperor Qianlong[1]. This has remained a hot topic for clinicians, public health practitioners, purchasers, planners, and the public (patients) (Sackett et al., 1996).

A Canadian doctor David Sackett in the 1990s created the term Evidence-based Medicine[2](EBM) (McQueen, 2001) and gave it its most renowned and accepted definition to this date. He defined EBM as a

“ Conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research” (Sackett et al., 1996).

In its simplest form, it means combining the best available external evidence with personal clinical expertise (Sackett et al., 1996). As stated by Haynes et al. (2002), EBM greatly relied on this; unfortunately, major investments in biomedical research, leading to new and better tests and treatments, has spurred the development of critical appraisal of the medical literature and evidence-based medicine (Haynes et al., 2002; Evidence-based Working Group, 1992).

Initially, EBM's early focus de-emphasised traditional determinants of clinical decisions including physiological rationale and individual clinical experience (Haynes et al., 2002). Subsequent versions have emphasized that research evidence alone is not an adequate guide to action. Rather, clinicians must apply their expertise to assess the patient's problem and must also incorporate the research evidence and the patient's preferences or values before making a management recommendation (Figure 1) (Haynes et al., 2002).

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43. png

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Figure 1: Early model of the key elements for evidence based clinical decisions (Haynes et al., 2002)

A more advanced model for evidence-based decisions (Figure 2), recently defined as “ the integration of best research evidence with clinical expertise and patient values”. This model is prescriptive rather than descriptive (Haynes et al., 2002). In other words, it is a guide about how decisions should be made rather than how they are made. Finally, this model states that patients’ preferences should be considered first rather than clinicians’ preferences.

Macintosh HD: Users: Sophie: Desktop: Screen Shot 2012-08-31 at 14. 41. 58. pngFigure 2: An updated model for evidence based clinical decisions (Haynes et al., 2002)

EBM normally asks questions, finds and appraises relevant data, and harnesses that information for everyday clinical practice. With this, there are four steps in EBM:

Figure 3: Four key steps involved in EBM (Erhman Medical Library, 2006)

EBM is constantly evolving to address the meaning of clinical expertise and its place in the broader context of EBM, as well as to depict the crucial role of healthcare organizations in managing[3]resources available for health services (Haynes et al., 2002).

1. 2 Arguments on the existence of EBM

1. 2. 1 In favour of EBM[4]

The immediate and most important reason for the attraction of EBM is that it integrates medical education with clinical practice as well as closes the gap between research evidence and clinical practice[5](Rosenberg & Donald, 1995).

EBM can be learnt by people from different backgrounds and at any point in their careers. Furthermore, clinicians can master evidence based medicine and transform an inert summary of journals into an active inquiry in which issues arising from patient care are used to undergo searches and appraisals of relevant evidence to keep their practice up to date (Rosenberg & Donald, 1995).

Another attraction of EBM is its potential for improving uniformity and continuity of care through guidelines developed by its practitioners (Rosenberg & Donald, 1995). Out of 59 published evaluations of clinical guidelines identified by Grimshaw & Russel (1993), 55 demonstrated great improvements in process of care after introduction of these guidelines. These studies also highlighted benefits of systematic reviews and randomized controlled trials (RCTs)[6](Grimshaw & Russel, 1993). Both the number and quality of trials[7]has grown due to initiatives such as the Cochrane Collaboration (Eccles et al., 2009). Furthermore, these trials are relevant to real world practices as they include strategies for successful implementation (Grimshaw et al., 2006).

EBM also provides a framework for problem solving and improving communication and understanding between people from different backgrounds[8](Rosenberg & Donald, 1995). It helps providers make better use of limited resources by enabling them to evaluate clinical effectiveness of treatments and services. Remaining ignorant of valid research findings has serious consequences (Rosenberg & Donald, 1995).

1. 2. 2 Against EBM

EBM has several drawbacks. Firstly, it takes time both to learn and to practice; therefore there needs to be good time management. This can help to make searches less onerous and ensuring that the question has direct clinical usefulness (Rosenberg & Donald, 1995).

Secondly, clinical promoters of EBM argue that the term is misleading as observation can also be considered as ‘evidence’ and does not necessarily need to be supported by data, which is to be used in clinical decision process (Sackett, 2000). Also, according to Croft et al. (2011) the extent of bias in the “evidence based clinical guidelines” is substantial as most of the evidence amalgamated in clinical guidelines originated from expert opinions (Croft et al., 2011).

Inevitably, EBM exposes gaps in evidence, which sometimes can be considered helpful in generating research projects[9](Rosenberg & Donald, 1995). However, EBM also overemphasises RCTs and uses these as criteria in uniquely addressing clinical questions while being ineffective for questions regarding prognosis, diagnosis and adverse effects (Borgerson, 2009).

Another problem is that electronic databases used for finding relevant evidence are not comprehensive; therefore, even a lengthy literature search is sometimes fruitless (Rosenberg & Donald, 1995). EBM thus has a strong focus on generalizability of evidence[10]. Nevertheless, this generalizability is frequently poor and hardly able to fit an individual's profile (Rothwell, 2005 and Croft et al., 2011).

1.3 Objectives of the report

The main objective here is to identify the most relevant challenges towards the implementation of EBM and discuss its impact on a number of different healthcare environments. These environments include:

Healthcare policy makers

Clinical Education

Healthcare organisations- specifically hospitals

Primary care setting- specifically clinicians and patients

Innovation in healthcare

To overcome or try to reduce these challenges, recommendations will also be provided together with the future plans for EBM in each environment.

2. Methodology

To achieve the above objectives, a thorough literature review will need to be conducted after understanding the meaning, use and arguments for the existence as well as implementation of EBM (pros and cons).

2. 1 Literature Search

Upon evaluation of what the research topic entailed and design of the objectives of the report, a literature search was conducted.

This was done following the need to find, select and retrieve relevant studies. In order to achieve this, a systematic review of literature was conducted as described in Appendix 1.

Category

Criteria

Source (R1)

Scientific database

Language (R2)

Written in English language

Population (R3)

Adults (i. e. individuals aged ≥ 18 years)

Sample Size (R4)

N > 10 individuals

Study Design (R5)

This could include Descriptive Studies such as: Case Series and Survey, Analytical Studies such as: Prospective and Retrospective Observational

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(Cross Sectional, Case Control and Cohort Studies) and Experimental (Randomized Controlled Trials and Non-Randomized Controlled Trials).

Outcome of interest (R6)

Challenges for implementing Evidence-based Medicine

During this, an inclusion criteria (Table 1) was used to help with the screening of the studies:

Table 1: Inclusion Criteria

After the studies have been selected, a decision has to be made on its retrieval from its respective database (Appendix 2). They then need to be analysed and compared for the literature review.

3. Analysis and Discussion of Literature focusing on the challenges of implementing EBM

3. 1 Health-Policy makers

In the late 90s, four key issues towards EBM in health policy were categorised (Mulrow & Lohr, 2001 and Lohr et al., 1998):

Costs and access to care,

Quality of and satisfaction with care[11],

Accountability for value in healthcare and

Public health and Education[12]

Cost of care in all probability is the most troublesome for policymakers, payer and patients alike[13]. These healthcare cost have escalated in the past decades[14](Mulrow & Lohr, 2001 and Lohr et al., 1998). Better decision making skills are needed as they will benefit and foster more consideration of patient preferences as well as values which in turn can be a significant factor in long-range health policy planning (Mulrow & Lohr, 2001 and Lohr et al., 1998).

Quality of care[15]is fast emerging as a dominant contemporary issue as different public or private sector initiatives in many countries (Mulrow & Lohr, 2001 and Lohr et al., 1998). Quality of care together with concerns about costs lead purchasers and policymakers to talk about ‘value’ for healthcare outlays (Mulrow & Lohr, 2001 and Lohr et al., 1998).

EBM also serves a crucial role of delivery of information to health care professionals in all aspects associated to patient management in different health care settings (Mulrow & Lohr, 2001 and Lohr et al., 1998). It helps health officials develop health programs and is fundamental to quality assurance (Mulrow & Lohr, 2001 and Lohr et al., 1998).

3. 2 Education

EBM is nowadays shown as a basic component of the undergraduate and graduate training of many healthcare professionals. Arguments can be raised about insisting on a science base, instead of only received wisdom, in clinical training (Lohr et al., 1998).

The guidelines to EBM also serve many educational purposes for other audiences. For example: authoritative guidelines on asthma
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management[16]guidelines about the management of high-risk pregnancy or labor and delivery after a previous caesarean section[17]and guidelines on management of depression or alcohol dependence[18](Lohr et al., 1998).

Whether these publications are in print or electronic form and ready to serve an educational purpose, they at least indirectly inform a broad cross-section of a nation's population about the benefits, advances, and limitations of science (Lohr et al., 1998). In this way, they contribute to a better understanding within the body politic about the difficulties of allocating scarce resources to competing purposes (Lohr et al., 1998).

Attention to these issues is greatly increasing in Europe. Thus, those who speak of evidence-based policymaking or evidence-based rationing may have these broad educational and consumer information goals in mind, even though they are likely thinking more of the day-to-day decision making they face (Lohr et al., 1998).

3. 3 Hospitals

Overcoming the resistance of clinicians and having adequate support for EBM by senior, clinicians and nursing leadership in order to have effective communication about how to apply guidelines to their daily work is what concerns the challenges to implementation of EBM in hospitals (Herman, 2011).

According to Guyatt & Nishikawa (1993) senior healthcare professionals are critical to successful implementation of EBM[19]. For EBM to be practised in hospitals, there needs to be the necessary computer software and

hardware[20], which has to be maintained by hospital staff (Rosenberg & Donald, 1995 and Guyatt & Nishikawa, 1993).

To learn how to practise EBM is often a long and overwhelming process especially for junior doctors as well as new team members. Thus leaders need to have both time management skills and strategy on guaranteeing that learning EBM is advantageous for all[21]and consequently hospitals (Rosenberg & Donald, 1995).

3. 4 Primary Care Settings

When trying to look at the complexity of primary care setting at various levels, potential barriers need to be addressed (Grol & Wensing, 2004). The following need to be taken into account (Grol & Wensing, 2004):

The nature of the innovation,

Characteristics of the professionals and patients involved and

The social, organizational, economic and political context.

However, below will be focused primarily on the barriers that individuals who work in the primary care setting face.

3. 4. 1 Clinicians

As demonstrated by Alastair et al. (1997), more than 302 general practitioners (GPs) were welcoming towards EBM and agreed that it improved patient care (Alastair et al., 1997). Respondents also thought that it was best to use evidence-based guidelines or protocols developed by

colleagues in order to move from opinion based practice towards EBM (Alastair et al., 1997).

Although in the late 90s clinician's believed in the role of guidelines and protocols, in the early 2000s the major challenge was the implementation of EBM particularly those of guidelines (Grol & Grimshaw, 2003). In the Netherlands for example, GPs only use a few of their clinical guidelines[22] (Chenot et al., 2008).

Some other problems which is faced by the implementation of EBM are (Haynes & Haines, 1998):

The size and complexity of the research to be carried out

Difficulties in developing evidence-based clinical policy[23]

Difficulties in applying evidence in practice because of lack of access to the best evidence and guidelines.

Nature of a clinical practice (Min et al., 2007)

According to Alastair et al. (1997), Vogel (1999) and Van Dijk et al. (2010), there is extensive evidence from different countries, which emphasises the problems that most clinicians face today (Appendix 4). It all indicates that the clinician (Alastair et al., 1997; Vogel, 1999 and Van Dijk et al., 2010):

Lacks time,

Lacks evidence,

Lacks access to information,

Incorporating patient values in decision-making is difficult,

Organisational and financial barriers.

3. 4. 2 Patients

There are two major setbacks when looking at EBM from a patients' perspective: (Moskowitz & Bodenheimer, 2010):

Lack of structure in medical care system to allow patients adopt advantages of EBM into their lives and

Environments creating barriers for patients to apply the EBM needed for disease management.

There are conditions[24]that have been identified with having good evidence management and treatment; yet some studies such as Yung et al., in 2001 and Saydah et al., in 2004 showed that these same conditions were poorly managed in both America and China (Yung et al., 2001 and Saydah et al., 2004).

Pearson et al. (2007) suggests paradigm shift to “ evidence based health[25]” (EBH). In the USA, the Chronic Care Model[26]represents a move towards the rearrangement of primary care[27](Bodenheimer et al., 2002).

This rearrangement will include planned visits by trained health educators and nurses to help patients acquire the knowledge and skills required to increase passivity[28](Pearson, et. al, 2007). SMS thus integrates EBM in

patient's lives and it has already shown its effectiveness by improving results much more than EBM (Chen et al., 2010).

3. 5 Innovation

EBM is associated to the accountability that drives innovation (Herzlinger, 2006). With the dynamic and complex nature of healthcare systems, innovation can become a precarious product. EBM is said to be able to limit or to an extent control innovation by overpowering the healthcare systems' economy (Freddi & Pumar, 2011).

Likewise, EBM is said to be bring harm to innovation where treatments or interventions can only be used if enough evidence is available[29](Eddy, 2005 and Croft et al., 2011).

4. Recommendations[30]

Challenges should normally be taken seriously and addressed; hence the need for recommendations. However in the case of EBM, the challenges are too complex and thus it is difficult to find recommendations that suit or that will help manage them. Some recommendations are nevertheless given below and even though it does not look at all the challenges mentioned in the literature review, it still aids in understanding how to manage them.

4. 1 Health-policy Makers

According to Croft et al., (2011), evidence is acknowledged to be of great importance to health-policy makers. However, other aspects also play a role in policy decisions concerning patients' and clinicians' preferences, availability of treatments, or financial, ethical, and legal issues. The one

thing that they all have in common is the effective and efficient management of the already existing evidence.

4. 2 Education

Seeing as how EBM is a basic component of training for many healthcare professionals, one approach of introducing EBM will be to offer predetermined topics in order to ensure that basic concepts are sufficiently covered (Croft et al., 2011). Alternatively, the introduction of EBM can be done in a setting where real patient cases are discussed[31]between the trainees.

In addition to these, trainees should view EBM not as a barrier to communicating with their fellow senior faculty members but as a means to work more effectively with them (McGinn & Smith, 1999)

4. 3 Hospitals

According to Croft et al. (2011), the principles of EBM need to be better explained especially clinical expertise and other types as well as sources of information on which to base decision-making in practice.

Resistance of clinicians in a hospital setting can be overcome by giving incentives of appropriate, efficient and effective work. It should be noted that this incentive recommendation will not work in certain countries due to the way in which their healthcare system works. Therefore, it is imperative to understand the traditions that each country has, how the healthcare professionals work there and the structure of their healthcare system.

Time management is another critical challenge as stated in various studies. To overcome this, guidelines need to be used when necessary (as explained in 4. 4). Skills and strategies for better and faster learning need to be developed by leaders to help the new team members together with junior doctors.

4. 4 Primary care setting (Clinicians and Patients)

According to Vogel (1999), nowadays clinicians are required to put extra effort on practicing EBM. However, this should not be necessarily considered a bad thing, as the clinicians will learn they can use quality research to answer their clinical questions and thus lead to the overall improvement of the care provided to the patients.

Guidelines should be used by clinicians in situations where the right clinical decision to make is not known. In Routine cases, it should be remembered that they are not needed. This will save time for both the clinician and the patient.

Local practitioners should be encouraged to work as localities or even commissioning groups in order to develop local evidence-based guidelines and advice[32](Alastair et al., 1998). This will be more interesting and welcoming for the practitioners rather than teaching them skills for search and critical appraisal which will be time consuming and bring about a lot of resistance especially towards the older practitioners.

Another serious problem is the size and number of systematics reviews and clinical guidelines, which is constantly growing (Croft et al., 2011). The

solution here lies in efficient and effective implementation strategies, which
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do not lessen the patient-clinician relationship to a potentially negative and dull uniformity. It should be noted that this will be a major challenge in the future[33].

4. 4 Innovation

A serious and difficult challenge to tackle is the hindering of innovation if EBM is strictly applied to new interventions (Croft et al., 2011). By allowing the use of new and innovative interventions at an early stage within the different settings[34]this could be resolved. The alternative to this solution will be to define characteristics of interventions that would be suitable as exceptions to EBM.

5. Conclusion

There are useful arguments both for and against using EBM and this brings about challenges (whether complex or not). These can be effectively handled or even tackled to an extent if proper knowledge of the problem in question is known and resistance in administering the solution is accepted by all.

It should be noted that these potential barriers (challenges) to implementing EBM can be avoided or in some cases even overcome with time, effective and thoughtful planning. It is also better to make well-informed decisions, either as a clinician[35], or as a policy maker[36]and to use the guidelines only when uncertain about particular disease management.

In my opinion, the problem that is faced by many is not so much that the principles of EBM are inconsistent, but that applying and furthermore

implementing EBM in policy or clinical practice is proving to be very challenging.

Finally, despite its ancient origins, EBM remains young with still too many barriers in its way. However, its positive impacts are just starting to be validated and I believe it will continue to be validated and consequently evolve through all this. In addition, I firmly trust that in the future, the discussion of EBM whether positively or negatively will continue in terms of considering its need, the challenges it faces during implementation and evaluating the enormous amount of evidence that will be found.

Search Query/Keywords

Number of Results

1

Evidence-based Medicine

79608

2

Evidence-based Medicine. ti.

7298

3

Evidence-based Practice

71493

4

Evidence-based Practice. ti.

4739

5

2 OR 4

11851

6

2 AND 4

186

7

Implementation. ti.

98224

8

Challenge\$. ti.

102479

9

2 AND 7 AND 8

28

10

4 AND 7 AND 8

84

11

5 AND 7 AND 8

109

12

6 AND 7 AND 8

3

13

Randomised controlled trial/

417404

14

Meta-analysis/

58069

15

9 AND 13

4

16

10 AND 13

6

17

11 AND 13

1

18

12 AND 13

9

19

9 AND 14

1

20

10 AND 14

1

21

11 AND 14

1

22

12 AND 14

1

Appendices

Appendix 1: Literature Search Query

The literature search was conducted using a few selected databases such as the EMBASE, MEDLINE, Web of Knowledge and Cochrane Library. The search strategy for use in EMBASE and MEDLINE is shown below and those used in other databases were derived from this one:

Appendix 2: Selected Studies for the Literature Review

Citation

Title

Journal

Grol & Grimshaw (2003)

From best evidence to best practice: effective implementation of change in patients' care.

The Lancet

Chenot et al., (2008)

Acceptance and perceived barriers of implementing a guideline for managing low back pain in general practice.

Implementation Science Journal

Min et al., (2007)

Multimorbidity is associated with better quality of care among vulnerable elders.

Journal of Medical Care

Van Dijk et al., (2010)

What are the barriers to residents' practicing evidence-based medicine? A systematic review.

Journal of Academic Medicine

Croft et al., (2011)

The Pros and Cons of Evidence-Based Medicine.

SPINE

Moskowitz & Bodenheimer (2010)

Moving from Evidence-Based Medicine to Evidence-Based Health.

Journal of General Internal Medicine

Saydah et al., (2004)

Poor control of risk factors for vascular disease among adults with previously diagnosed diabetes.

JAMA

Yung et al., (2001)

Relaxation training as complementary thera