https://doi.org/10.47811/bhj.129

A march towards evidence based medicine

Kinley Tshering[1]

[1]*Lungtenphu Military Hospital, Royal Bhutan Army, Thimphu, Bhutan*

The evolutionary concept of applying quality evidence from published literature in patient care was conceived and coined in the 1990's[1]. The pioneers of this concept initiated a campaign to address the deficiencies of expert based medicine such wide variations in clinical practice, use of unproven interventions and failure to apply consistent guidelines. From merely educating clinicians in using evidence from published literature for patient care, it increasingly emphasized the integration of the best available evidence, in conjunction with clinical expertise and patients values and preferences[1,2]. Evidence based medicine (EBM) principles has now become the part of core competencies of both undergraduate and postgraduate medical education worldwide[3].

EBM is defined as the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients[1]. Understanding that evidence in literature is constantly changing, EBM focuses on lifelong self-directed learning focused towards finding the best currently available evidence in care of patients[4]. However, the decision on how to treat the patient is not solely based on use of evidence instead due consideration is given to other factors such as doctors skills and experience, clinical judgements, and more importantly patient values and preferences[1,5]. EBM emphasizes that decision to perform treatment be made if there is evidence that treatment may be of benefit, or, alternatively, not to perform treatment if there is no evidence that treatment will be beneficial. The practice of EBM stresses that a clinician to be open minded yet critically analyze and scrutinize the effectiveness of clinical intervention, accuracy and precision of diagnostic test and power of prognostic markers[4].

The practice of EBM is a systematic process involving five steps in an orderly fashion[4,6]. Briefly, it begins with formulating a clear, directed and answerable clinical question to the problem at hand. A useful framework while formulating the question involves use of (PICO format) where 'P' denotes patient or problem, 'I' for intervention or exposure, 'C' for comparison and 'O' for outcomes.

Corresponding author:
Kinley Tshering
drkinleytshering@gmail.com

The second step involves finding evidence for the formulated clinical question and requires searching the literature from online databases such as Cochrane Library database, MEDLINE, EMBASE, and CINAHL etc. The hierarchy of evidence are rated high for systematic reviews and clinical trials and low for observation. Cochrane Library database which is updated quarterly, provides quality evidences from randomized controlled trials and systematic reviews. Cochrane library and other EBM resources also provide pre-apprised evidence for quick and efficient way for searching answers for clinical questions. The WHO, through Research4Life provides institutions in low-and middle-income countries including Bhutan with online access to academic and professional peer-reviewed content HINARI where many articles can be accessed freely[7].

Having found the evidence the third step is to appraise the evidence for its validity, importance and applicability to the patient. Appraising the evidence is important as it allows us to understand if the evidence is trustworthy or not and how it can be applied to the patient. For an evidence to be reliable and trustworthy it has to be critically appraised using various critical appraisal tools.

The next step involves application of the evidence to the patient or population. During this phase an informed decision is made with the patient or parents upholding the personal values and circumstances. The patient is informed about the evidence, the risk and benefits of intervention as well as its cost and availability. The last step of EBM is to evaluate the how the other previous four steps have managed to improve the patient care[4,6].

In many of the reputed health care institutions around the world, EBM is the standard of clinical practice[3]. Since the inception of EBM, its opponents had criticized it as being an old hat, impossible to practice, that it can be conducted from ivory towers and arm chairs, as being cook book and new cloth on the emperor[1,8,9]. However, it may be argued that practice of EBM has been shown to increase patient safety, improve clinical outcomes, decrease health care cost, and decrease variation in patient outcomes[10,11]. In recent times, some authors doubted if EBM will survive Corona virus disease 2019 (COVID-19) pandemic[12]. For example, at the beginning of pandemic, due to lack of quality evidence in management of COVID-19, healthcare practitioners elsewhere advocated treatment of COVID-19 by using Hydroxychloroquine based on pathophysiology and uncontrolled

small studies[12]. However, the open labelled multi-centric RECOVERY trail in UK showed that Hydroxychloroquine as treatment for COVID-19 was ineffective and caused more arrhythmias in those patients who received it[13]. It is thus evident that practice of EBM is will survive any pandemic and it will continue to save lives and avoid use of harmful drugs.

There is not data regarding awareness and practice of EBM amongst the Bhutanese health care provider (HCP). It is possible that while some HCP in the country may be practicing EBM following all the steps, it is likely that majority are not. To this effect, currently a researcher at Khesar Gyalpo University of Medical Sciences of Bhutan (KGUMSB) is conducting as survey regarding knowledge and practice of EBM amongst HCP in Bhutan. It is anticipated that the survey result will help in guiding a way forward regarding practice of EBM as well as other associated problems. A comprehensive module for EBM is currently being developed under the auspices of KGUMSB. Few collaborative meetings were held involving various specialties of medicine and nursing. Once developed, the module will help to train the faculties of KGUMSB, who will subsequently train other faculties as well post graduate students. This module is also expected to be incorporated as a part of medical curriculum for post graduate students.

Bhutanese health care must march forward in order to provide best possible treatement to its patients and community. For this to be realized, all HCP must be educated and trained in the principles of EBM. The responsibility of developing and dissemination of EBM module lies with KGUMSB, it must ensure that all faculties and post graduate students are trained in practices of EBM. As practice of EBM can occur at bedside during ward rounds, clinical meetings, journal club and seminars, introduction of EBM in will improve patient care, reduce variation in outcomes and health care cost. It will help HCP to be compassionate, competent, relevant and lifelong learner.

REFERENCES

1. Sackett DL, Rosenberg J, Gray M, Haynes B, Richardon S. Evidence Based Practice: What It Is And What It Isn't. Br Med J [Internet]. 1996;72(312):71–2. [PubMed | Full text | DOI]
2. Smith R, Rennie D. Evidence based medicine-an oral history. BMJ [Internet]. 2014;348(January):1–3. [Full text | DOI]
3. Djulbegovic B, Guyatt GH. Progress in evidence-based medicine: a quarter century on. Lancet [Internet]. 2017;390(10092):415–23. [PubMed | Full Text | DOI]
4. Akobeng AK. Principles of evidence based medicine. Vol. 90, Archives of Disease in Childhood. 2005. p. 837–40. [PubMed | Full Text | DOI]
5. Masic I, Miokovic M, Muhamedagic B. Evidence Based Medicine - New Approaches and Challenges. Acta Inform Medica. 2008;16(4):219. [PubMed | Full Text | DOI]
6. Reddy K. Evidence Based Medicine: A Paradigm for Clinical Practice. J Gandaki Med Coll. 2018;11(02):74–81. [Full Text | DOI]
7. World Health Organization (WHO) research 4life.org [Internet]. World Health Organization. Available from https://www.research4life.org
8. Press AIN. Criticisms of Evidence – Based Medicine. 2004;197–8.
9. Tebala GD. The Emperor ' s New Clothes : a Critical Appraisal of Evidence-based Medicine. int.j.med.sci. 2018;15:1397–405. [PubMed | Full Text | DOI]
10. Fineout-Overholt E, Melnyk BM, Schultz A. Transforming health care from the inside out: Advancing evidence-based practice in the 21st century. J Prof Nurs. 2005;21(6):335–44. [PubMed | Full Text | DOI]
11. Black AT, Balneaves LG, Garossino C, Puyat JH, Qian H. Promoting evidence-based practice through a research training program for point-of-care clinicians. J Nurs Adm. 2015;45(1):14–20. [PubMed | Full Text | DOI]
12. Neto AS, Sc M, Hodgson C. Will Evidence-based Medicine Survive the COVID-19 Pandemic ? AnnalsATS [Internet]. 2020;17(9):1060–1. [PubMed | Full Text | DOI]
13. Horby P, Mafham M, Linsell L, Bell L, Staplin N, Emberson JR, et al. Effect of Hydroxychloroquine in Hospitalized Patients with Covid-19. N ENGL J MED. 2020;383(21):2030–40. [PubMed | Full Text | DOI]