

Best Evidence Medical Education. (Editorial)

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Best evidence Medical Practice (BEMP) has given much needed direction to medical practice in the last quarter of a century. I vividly remember that during my education in Dow Medical College in early 80s, and later during my practice in UK in mid 80s and part of mid 90s, we practiced what we saw or sometimes read. In other words, Medical practice was based on fixed opinions. From early 90s, it was obvious that most doctors, especially those working in teaching hospitals, were becoming more sensitive towards the need for evidence before accepting any change in their practice. This was made easy by publication of meta-analyses, review articles, editorials, guidelines and invited lectures on key issues in conferences and seminars. Today we see doctors and researchers seeking best available evidence in decision-making and problem solving. However, unfortunately I see little change in attitudes as far as medical education is concerned. We, as medical teachers still prefer to follow our beliefs and instincts, seriously follow the myth and stay away from following or even finding best evidence. Something we so eagerly do in our clinical practice and while conducting research. As Petersen has put it in the words of teachers of medicine "I know about medical education. I'm not going, to change." Why do these attitudes persist? What are the barriers to effective, evidence based medical education, and how may they be overcome¹?

When this problem is highlighted in informal meetings, various explanations are given. These include unlike clinical practice and research that teaching is an art and not a science and hence cannot be evidence driven". However there are research articles regularly published in journals of medical education and Meta analyses being conducted. Here I would like to give some examples of such research articles and meta-analyses.

I would like to particularly refer to a study conducted in Coventry hospital on final year medical students. It was found that those students who had interactive lectures performed significantly better in solving MCQs than those whose learning of the subject was through game playing².

Similarly in 1993, Lipsey & Wilson reviewed a total of 302 Meta analyses of educational and psychological interventions, involving a total of more than 1400 trials. The findings of these studies were not weak or without significant conclusions. In fact their effect sizes were even bigger than those noted in clinical studies³.

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Having said that, Cook AD et al have shown in their article "Quality of reporting of experimental studies in medical education: a systematic review, have reported that "The quality of reporting of experimental studies in medical education was generally poor. Criteria are proposed as a starting point for establishing reporting standards for medical education research⁴.

Two important meta-analysis about continuing medical education effectiveness by Maliheh Mansouri and Jocelyn Lockyer⁵ and Student Self-Assessment in Higher Education by Falchikov N. & Boud D⁶ are also important readings.

Wong G et al have shown in their article that "Different modes of course delivery suit different learners in different contexts. When designing or choosing an Internet-based course, attention must be given to the fit between its technical attributes and learners' needs and priorities; and to ways of providing meaningful interaction⁷.

There are many articles and meta-analysis on issues in Medical Education. However, it is recognized that we should develop inter institutional collaboration in performing research in medical education which will help in overcoming problems of small numbers and help in randomization of samples as suggested by Levinson- Rose & Menges⁸.

Similarly, educationalists, health care researchers and social scientists from USA & Europe decided to "Campbell Collaboration" develop (<http://campbell.gse.upen.edu/index.html>) to establish electronic database of systemic reviews of the effects of social and educational interventions, as "Cochrane Collaboration" has done in clinical sciences. This is an important source for all concerned with medical education. Attempts have been made to grade evidence in medical education. Initially Harden et al explored using following grading system to rank evidence in medical education:

No evidence

Evidence-based on professional judgment

Evidence based on educational principles

Evidence based on experience and case studies

Evidence based on consensus views built on experience

Evidence based on studies in a comparable but identical area

Evidence based on well-designed non-experimental studies

Evidence based on well-designed quasi-experimental studies

Evidence based on well-designed controlled studies

Evidence based on well-designed controlled studies
However, it soon became obvious that such a grading

system was difficult to use. Hence a multi-dimensional approach with six dimensions was developed, each with its own continuum, and represented by the QUESTS acronym⁹:

1. Quality: How good is the evidence?
2. Utility: To what extents can the method be transferred and adopted without modification?
3. Extent: What is the extent of the evidence?
4. Strength: How strong is the evidence?
5. Target: What is the target? What is being measured? How valid is the evidence?
6. Setting: How close does the context or setting approximate? How relevant is the evidence?

On individual level, we can adopt the three-circle outcome method proposed by Harden et al in 1999¹⁰.

From above discussions, it becomes evident that like clinical practice and research, Medical Education must also be evidence based. We need to perform new researches and get familiar with studies already performed. Thus we should inculcate the Best Evidenced Medical Education in our practice.

Hence I would suggest that in order to establish our medical education in line with international pattern and to improve the outcome, we need to develop and implement the best evidence medical education (BEME) in our institution. Again as Petersen has said that we must "convince their colleagues that the evidence base is as important in educating new doctors as it is in assessing a new chemotherapy"¹¹.

References:

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