Editorial

Evidence based orthopaedic surgery: obstacles and solutions

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Healthcare delivery is under constant scrutiny due to the scarcity of resources, the changing demographics of our patients and daily scientific discovery. This is more important in a resource-challenged country like Bangladesh. In this setting, all healthcare professionals need to understand and implement the principles of evidence-based medicine (EBM). But it is especially imperative for the young doctor. Young, impressionable minds are at the threshold of a lifelong journey, and good (or bad) habits learnt at this stage will remain with them for the rest of their lives. Hence, I am so pleased and honoured to be asked to write this editorial on evidence-based orthopaedics in the inaugural edition of the IPEX journal. I hope the publication of the journal will encourage young surgeons to write about their patients, treatments, successes and challenges and ultimately improve patient care. Our country is currently at a crossroads. I hope young doctors will take this opportunity to improve patient care so that our hard-earned money remains in the country and is not wasted overseas.

EBM is not an ivory tower movement. No one in their right mind would consider buying a car from a used car salesman on his/her word- the car has to be road-tested first. Similarly, none of us would take out an expensive mortgage without asking around for the best quote. EBM movement only demands that while treating patients we employ the same skills that we so instinctively apply in our real life, i.e. testing unchallenged assertions, asking around for the right information etc. What the EBM movement demands is no different from what we, as media-savvy consumers in the World Wide Web era, constantly demand of ourselves.

Before discussing evidence-based orthopaedics it is important to understand what EBM is. Dave Sackett, one of the pioneering proponents of EBM, wrote "Evidence-based medicine is the integration of best research evidence with clinical expertise and patient values"1. It is important to understand the concept well. First comes evidence. For every treatment we should be guided by the availability of best available evidence. As far as intervention is concerned the best level of evidence is found by conducting randomised controlled trials (RCT) because the trial design gets rid of the uncertainty surrounding chance, confounding factors, bias etc. However, conducting an RCT is expensive, time-consuming and not always feasible. Therefore, there will not always be the luxury of high-quality evidence for every intervention. When we find ourselves in that situation it is important to acknowledge that and discuss with the patient the uncertainty of available evidence. It is also important to emphasise that when we discuss best available evidence that evidence needs to be current, valid and relevant. Outdated evidence is no good. Because of the inherent design of the RCT the research question is always very narrow. Therefore when assessing evidence it is also important to be satisfied that it is relevant to the condition we are searching for and equally valid for our patient. But EBM is not a license to practice the tyranny of evidence. Even the best and most valid evidence has to be assessed against the reality of the individual patient 2. Even though there is accumulating evidence that a total hip replacement is the best treatment for managing a displaced hip fracture in a healthy patient, in a resource-poor setting this may not always be the right option. Treatment will also have to consider the patient's cultural values and traditions. Red wine in moderation might be cardio-protective but a Muslim patient is unlikely to appreciate its therapeutic value. Finally, we have to remember that the patient is in charge and healthcare decisions ultimately have to be made by the well-informed patient balancing the pros and cons of individual treatment. Orthopaedic surgeons might prefer to operate on wrist fractures to improve the cosmetic appearance and functional outcome but the occasional well-informed patient may prefer a period of plaster cast treatment and some deformity and disability to the risks of surgery and perfect alignment.

Having discussed the principles of EBM let us now look at the challenges of practising it in Bangladesh. You are lucky to have ubiquitous internet nowadays. Because of the spread of smartphones, even the best and most recent evidence is just waiting to be found in the hands of the enquiring surgeon. I remember days as an internee doctor when I was writing up a case report. I had to go to ICDDR,B, and talk to the Librarian regarding my need, then wait a week before I could lay my hand on the relevant papers. Now one can get this instantly. Therefore, you have already won the first hurdle, that of getting hold of the evidence in your hand. Even in UK I do not have access to full text journals unless I have a subscription. Whereas from Bangladesh you can access many of these journals due to the HINARI initiative.

The next challenge is having time to read the evidence. Here I would advise a practice of spending a short period of time once or twice a week, even half an hour to keep yourself updated with the latest evidence. If you develop this habit early this will reap benefit for you in the long term and will not feel too onerous at all. Take notes, summarise what you read and collate it later.

Once you have access to evidence and you have read it you need to be able to digest and appraise it. Critical appraisal of medical literature is not for everyone but a basic skillset and understanding of research methodology is useful for everyone. If, however, critical appraisal or going through loads of primary evidence is not your thing then there is good news. You can read pre-appraised literature through systematic reviews. If you are keen for more digestible and systematic format of pre-appraised evidence, then the best place to go is Cochrane Library where thousands of pre-appraised systematic reviews are available to read 3. Only problem with the Cochrane reviews is that they do not appraise non RCT studies and therefore if there is no RTC for your research question you will not find it in Cochrane. In that case, the TRIP database is another useful option 4. A sure fire way to incentivize the practice and adoption of EBM is to undertake regular journal club meeting, have such a meeting once a month so that everyone has enough time to read, prepare and discuss the paper.

Once you have read the evidence, appraised it, and are ready to apply it in practice, your final hurdle- how do you compare with your peers? The truth is that medical practice is still not fully regulated in Bangladesh, as in many other countries. Patients are mostly uneducated, and medical practice is unaccountable. In this environment, it is a challenge to practice EBM when your friends and/or colleagues might be earning more money by peddling snake oil. Here it is important to start a war to shift a cultural change so that both the patient and the clinician will be interested in a practice that conforms to EBM. Further, it is my belief that as we develop further as a nation and progress forward our patients will also become more aware, more knowledgable and demand the best. By practicing EBM you will be at the vanguard of this movement.

My other advice is to remember to be cautious. EBM is not perfect, and not all the faults of an intervention are always manifest early. Be wary of adopting shiny new treatment just because it is fanciful. Total hip replacement was being performed successfully for decades with plastic and metal until one company developed metal-on-metal implants. Everyone rushed to use this implant until it was found a few years later that metal on metal hips has too many disadvantages. Unfortunately, too many hips had already been implanted by then.

In summary, the biggest hurdle we faced in our days was getting hold of evidence. Nowadays, this is no longer an issue. At the same time, the doctors of today's generation are internet savvy and have the requisite information mastery to search and find the correct evidence. You only need to develop the critical appraisal skills to choose the valid evidence and the desire for knowledge translation where the evidence is put into practice.

I would write a few more points from the point of view of an educator. To be an EBM doctor you need to develop critical thinking skills. I would encourage you the reader to turn into active enquirers and self-instructors so that you can comfortably engage in a lifelong activity to ask, acquire, appraise, adopt and audit new and relevant information for the benefit of their patients. Constantly ask yourself, why?

Remember that adult learning is predominantly self-directed. You therefore need to become an active participant in the learning process. You need to construct your knowledge via your personal active experience and reflection thereof. One way to do this is via problem-based or case-based learning. Discuss cases between yourselves, with your senior and junior. Constantly challenging yourself how you can do better.

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