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Letter to the Editor

Experience of medical students mentoring in an acute geriatric unit: Use of evidence-based medicine☆

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ABSTRACT

In a retrospective study, we studied the learning experience of second and third year undergraduate medical students in the acute geriatric unit of a University Hospital.

Students who did not receive Evidence based medicine (EBM) classes had lower grades than those who did in the final theoretical and practical evaluations ($p < .01$).

Our experience suggested that the implementation of EBM in the curriculum through small, structured semiology courses tailored to the specificities of the elderly improved Evidence based practices for undergraduate medical students. EBM should improve instruction and mentoring during undergraduate students' clinical rotation.

Introduction

Population aging as a result of increasing life expectancy has led to a growing number of frail and hospitalized elderly individuals who require care in almost every medical and surgical specialty. It is therefore imperative that geriatrics and gerontology be an integral part of undergraduate or core medical curriculum.

Evidence-based medicine (EBM), which is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients [1], is an increasingly familiar part of clinical practice, but the advantages and limitations of this approach are often unknown, especially for elderly care. Numerous recommendations for good clinical practices and therapeutic assessment have been derived from EBM but rigorous research studies regarding educational approaches to EBM are limited [2] and previous works evaluating the outcomes of EBM-related teaching in geriatrics are rare. It is worth asking whether EBM, which has contributed to the development of sound medical practices in many disciplines, can be applied directly in geriatrics or in geriatric training if the specificities of the elderly are accounted for.

The aim of this retrospective study, through the experience of clinical instructor at a university hospital and school of medicine in France, is to compare the impact of two educational approaches to EBM in undergraduate medical students (MS).

The first approach provided EBM classes tailored to the needs of the elderly, and the other did not, during the in-hospital training period (rotation) in the acute geriatric unit (AGU) of a university hospital.

Methods

In this work, implementing ethical rules, we studied the impact of adding EBM classes to the in-hospital rotation period of undergraduate (second and third year) MS in an AGU of a French university hospital from November 2006 to October 2007. The unit had 54 conventional hospital beds and six day hospital beds and patients have mainly more than 70 years old.

A total of 64 undergraduate MS were assigned to an eight-week rotation in the above AGU during the academic year and completed the survey. This randomized controlled trial of an educational intervention included 40 second year MS and 24 third year MS. Half of the students in each year (i.e. 20 in second year and 12 in third year) were asked to attend specific EBM for the elderly classes (group A) for compared to paired controls (who did not attend the classes) (group B). Indeed, theoretical semiology was taught in the general undergraduate program in the form of apparatus's integrated teaching, but geriatrics and EBM were not taught in the undergraduate curriculum. At the beginning of our in-hospital rotation period, group A attended theoretical geriatrics classes (touching on each body system), in addition to the basics of EBM [3].

Secondly, the professor taught the classes at the inpatient clinic and at the bedside, incorporating EBM to training. The bedside approach was initially done sequentially by insisting on the examination of one body system at a time.

In group B, the above theoretical interventions and the emphasis on evidence based practices (EBP) were not implemented.

All MS were taught how to write a medical case and to present a patient's medical record orally.

The effects of the interventions were assessed during the final exams at the end of the rotation period (presentation of a patient's clinical examination and theoretical questions related to those examinations).

Statistical analyses were performed using Statview software (SAS Institute Inc., Version 9.2). A *p*-value of less than 0.05 was considered statistically significant.

Results

Students in the intervention group (EBM group) had significantly higher grades (mean score) in the clinical comprehensive evaluation

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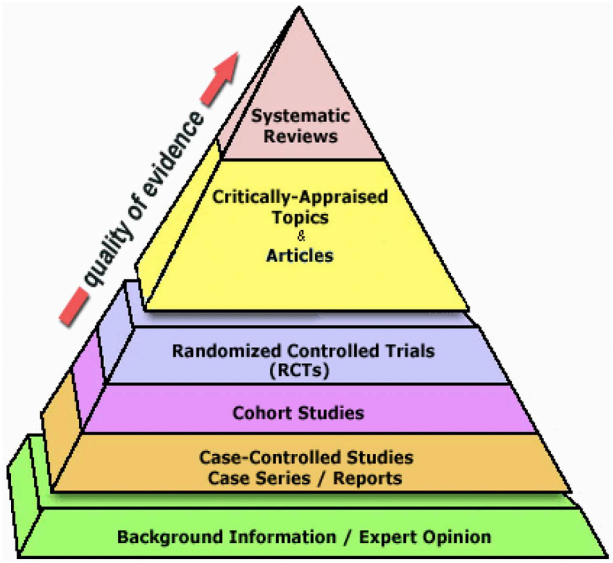

Fig. 1. Hierarchies of evidence (by study type and methodology) [5].

(assessment of clinical skills including a full anamnesis (questioning the patient); MS attitude) compared to the control cohort (16.118 ± 1.799 vs 14.733 ± 1.486 out of 20; $p = .024$ for second-year MS and 16.8 ± 1.033 vs 15 ± 1.155 out of 20; $p = .002$** for third-year MS). Almost all the MS improved their theoretical knowledge or skills during the rotation.

There were no unjustified absences during this particular geriatric rotation.

Discussion

Nowadays in many medical schools around the globe, undergraduate medical curricula do not nurture the skills needed for self-directed lifelong learning in medical graduates, and this is a problem that needs to be addressed [4]. Incorporating EBM, an important competency for physicians and other healthcare professionals, into undergraduate medical curriculum would help students acquire or develop professional capabilities and secondary self-directed skills for learning later in their professional lives [4].

Moreover, the application of EBM in geriatrics is not always easy, as many advocates of EBM use hierarchies of Evidence (Fig. 1) [5] to appraise evidence from a range of sources, as well as to teach MS about EBM. But because the majority of large studies are done in younger populations, these study protocols are usually unidimensional and focus on a specific condition or a given organ. While the ranking of evidence is difficult to apply in geriatrics, it is also tricky to conduct large, compelling studies in and elderly cohort. There is a need to for more stringent clinical studies in elderly cohorts or to adapt EBM scientific methods to geriatric realities.

However, even if EBM provides an efficient approach for clinicians, it should not be limited to randomized trials and meta-analyses. Indeed, good physicians use both individual clinical expertise and the best available external evidence, and one element alone is not sufficient. With no clinical expertise, clinical practice can be tyrannized by scientific evidence, because even excellent scientific evidence can be unenforceable or inappropriate for a given patient. Also without tried and tested, validated and updated data, medical practices can rapidly become obsolete, to the detriment of patients. EBM is optimally the overlap between clinical expertise, the best available evidence from research and a patient's unique features, all of which guide bedside decision-making [1,6].

Although EBM has been criticized concerning its validation and effectiveness in geriatrics [7], it should be addressed in undergraduate medical rotations as EBM contributes to better medical reasoning and more structured approaches.

Our results showed that Specific EBM for the elderly classes improve the attitudes, knowledge and clinical examination skills, and subsequently evidence based clinical practice. If delivered to MS at an undergraduate level, EBP competencies increase. Indeed, *Kotur* found that early introduction of EBM in the undergraduate medical curriculum, in the form of a short course, enhances critical thinking skills and contributes to positive attitudes towards EBM [4].

The main limitation of our survey is the fact that the initial step (analysis of data for undergraduate MS included in the study) was retrospective, and the sample were all from a single institution, so therefore not necessarily representative of all undergraduate MS.

Implementing short, specific EBM for the elderly classes during a rotation in a geriatrics department significantly improved EBP for undergraduate MS. Attaining EBM proficiency should be an expected outcome of undergraduate and graduate medical education training in medical schools worldwide, particularly in geriatrics, and should be an integral part of medical curricula.

Disclosure statement

All the authors of this manuscript declare any financial supports or relationships that may pose conflicts of interest with this publication.

No potential conflicts of interest were also disclosed.

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