

INTEGROVANÁ VÝUKA PEDIATRIE ZALOŽENÉ NA DŮKAZU S VYUŽITÍM E- LEARNINGU

INTEGRATED EVIDENCE-BASED PAEDIATRIC CLINICAL CLERKSHIP SUPPORTED BY E- LEARNING

V. Mihal¹, J. Potomková², J. Zapletalová¹, D. Šubová²

¹Palacký University Faculty of Medicine & Dentistry, Department of Paediatrics; ²Palacký University Medical Library, Olomouc, Czech Republic.
mihalv@fnol.cz

Abstrakt

ÚVOD: Výuka u lůžka pacienta zažívá renesanci v souvislosti s implementací principů praxe založené na důkazu. Je náročná pro učitele i studenty, protože vyžaduje efektivní práci s elektronickými informačními zdroji, kritické myšlení a schopnost aplikovat veškeré relevantní poznatky v péči o konkrétního pacienta. **CÍL:** Představit výsledky 3-letého projektu inovace kurikula dětského lékařství na LF UP v Olomouci s využitím informačních technologií a multiprofesní spolupráce. **METODIKA:** Zpracování reálné strukturované kazuistiky, příprava diskuze na základě klinické otázky ve formátu PICO (pacient-intervence-srovnání intervencí-výsledek), vyhledání literatury za asistence informačních specialistů resp. webových opor a prezentace případu. **VÝSLEDKY:** Během pilotní fáze (2007/08) jsme shromáždili údaje o spokojenosti studentů s novým typem výuky (n=106; 85% - vysoká spokojenost a/nebo kladný postoj, 8% - kritické připomínky, 7% - odmítavý postoj). Před zahájením realizační fáze (2008/09) byly zpracovány připomínky studentů a připraveny webové tutoriály pro vyhledávání informací v databázi PubMed a BMČ. **Evalua**ce výuky (n=131) byla zaměřena mj. na parametry, nezbytné pro potřeby inovovaného kurikula (celková úroveň výuky, ochota učitelů, kvalita praktické výuky, vliv výuky na zvýšení zájmu o předmět, pokrytí informačních potřeb studentů, srovnání preferencí pro interaktivní výuku vyhledávání a e-learning. Studenti měli možnost vyjádřit své názory i pomocí volně formulovaných odpovědí. **ZÁVĚRY:** Nově zavedená edukační strategie založená na důkazu byla v průběhu realizační fáze kladně přijata 90% studentů 5. ročníku všeobecného lékařství. Téměř 70% deklarovalo zvýšení zájmu o předmět a motivace k práci s literárními zdroji. Hlavním neurastenickým bodem je časová náročnost tohoto typu výuky. Osvědčila se integrace informačních specialistů pro interaktivní výuku vyhledávání informací a přípravu webových opor.

Klíčová slova: výuka pediatrie u lůžka pacienta, informační technologie, praxe založená na důkazu, kurikulum

Abstract

Bedside teaching can play an important role in modern medical education if teachers incorporate evidence from the medical literature to increase students' motivation and interactivity. An integral part of the medical curricula at Palacky University (Olomouc) are real paediatric scenarios supplemented with a review of current literature to enhance bedside teaching & learning. Searching for evidence is taught through librarian-guided interactive hands-on sessions followed by clinical case presentations and feedback. Innovated EBM paediatric clerkship demonstrated students' preferences towards integrated interactive bedside teaching & learning. In academic year 2008-2009, learning-focused feedback from students was obtained about their attitudes towards evidence-based bedside teaching. Out of 131 respondents, 55% found the overall level of instruction very high, quality of practical evidence-based training obtained high scoring from 90% of the students, teacher willingness was assessed as very high by 72%, and 75% of the students declared the instruction had substantially increased their interest in the specialty. The only criticism was about excessive workload. In follow-up interviews, respondents considered the paediatric clerkship as the first opportunity for them to feel like real doctors. The new teaching/learning paediatric portfolio is a challenge for further activities, including effective knowledge translation, continuing medical & professional development of teachers, and didactic clinically integrated teaching approaches. Bedside medicine is a blend of tradition, humanity, art and science.

Keywords: bedside teaching & learning, information technology, evidence-based practice, paediatric curriculum

Introduction

Bedside teaching of knowledge, attitudes, and skills plays an important role in modern medical education, even if it dates back to 300 years ago (Silvius, 17th C., Osler 19th C.). It is a 3-stage-process, covering the following steps: introductory phase ("See"), practice Phase ("Do"), and perfecting phase ("Repeat").

It seems efficient to integrate evidence-based medicine in undergraduate bedside teaching to encourage students to apply all relevant information resources to solve patients' problems. Teachers must incorporate evidence from the medical literature into bedside sessions, be aware of their limits and seek information specialist/librarian assistance. In general, the whole process requires considerable enthusiasm and commitment on the part of both teachers and learners.

Objectives

We are presenting the results of 3-year (2007-2009) efforts to integrate principles of evidence-based practice into the paediatric curriculum. The new design respects typical features of a long-proven method of bench-to-bedside teaching. Whenever and wherever possible, students are systematically encouraged to practice evidence-based healthcare to develop and present a real-case scenario. Educational strategies are supplemented with library-facilitated interactive search skills training. Student evaluations of pilot and 1st year implementation phases are very promising.

Innovated Evidence-Based Paediatric Curriculum

Main features:

- Study years: 4th, 5th
- Contact time: 160 hours
- Format: Discipline-based clerkship

New educational strategies

- Patient-oriented approach
- Evidence-based bedside teaching & learning
- Introductory EBM workshop
- Technology-driven information gathering
- Library-facilitated interactive search skills training
- Real case scenario development + presentation + literature review
- Self-directed learning
- E-learning materials available from educational portal MEFANET [1]

The structure of the innovative paediatric curriculum for the 5th year undergraduate students has different layers supporting the main educational goal that is real-life case report development. There are several activities to accomplish the task, in particular: introductory EBP workshop, bedside teaching and learning in the paediatric department, formulation of a patient-oriented clinical question, searching for relevant literature, interpretation of research papers and preparation of discussion. Supplementary educational offerings include interactive search skills training or librarian-guided information retrieval.

Under careful clinical guidance the students complete the patient file, analyze at least one research paper to answer the assigned clinical question and have a presentation of their case in front of the class. Their performance is assessed by a team of clinician-teachers and librarians as part of the final exam in paediatrics.

Student Feedback and Curriculum Assessment

In academic year 2007/2008 the experimental evidence-based paediatric curriculum was assessed by a group of 106 medical students. It was accepted in a positive way by 85% of the respondents, whilst 15% had critical and/negative attitudes. This was a commitment for the curricula developers to perform the necessary amendments.

In academic year 2008/2009 we obtained very positive feedback from 131 students who evaluated among others quality of practical training, teachers willingness and impact of instruction on students interest in the subject. We were impressed to see that 75% of the respondents declared that the instruction had substantially increased their interest in paediatrics. Also, nearly 80% of the students expressed their interest in follow-up activities, above all students journal club.

Verbatims

„I found this learning activity enlivening, illustrating, enriching, BUT extremely time consuming

„I think it is a beneficial and contributing element in clinical education, although requiring enormous workload ...“

„For me, it was a waste of time, not a very efficient educational tool...I prefer textbooks.“

„In the beginning, I was rather suspicious, because I had no idea what it would be about. Step by step I realized that searching databases is inevitable to find the best treatment option for my young patient. Having completed the clerkship, I decided to become a pediatrician....“

„I especially liked the Introductory EBM workshop, including demonstration of searching for relevant literature.“

„I am very happy to be able to search PubMed now, even if the beginnings were very tough. Now I feel competent enough to find what I need.“

Search Skills Questionnaire

The search skills training evaluation included a total of 131 students of general medicine. It revealed the following perceived values of instruction: 82% of the students declared they had been satisfied with the introductory presentation about evidence-based case report development, followed by demonstration how to search for evidence supported by web-based tutorials, whilst 14% found this insufficient without further interactive training. At the moment, we are offering a web guide for literature search and interpretation of study designs and a web-based multimedia model of an evidence-based case report dealing with psychotherapy in adolescents with Crohn disease. This tutorial was developed by a medical student in 2007 under clinical and library guidance and is regularly updated with recently published literature [1]. On the other hand, 64% of the students considered the subsequent interactive search sessions useful; from the practical point of view, it was interesting to see that 54% of the students did attend interactive training. To make the image of search skills training opportunities complete, it should be added that the medical library offers an elective course (6 sessions of 2 hours each) for the students of the 3rd or 4th year of study, i.e. before clinical paediatric clerkship.

Student feedback always brings about new issues to consider and inspiration for further improvement of teaching and learning. According to the literature [2,3] and based on our experience, today's human-computer interaction is becoming a more personalised and adaptable approach than face-to-face classes. However, it still lacks the emotional component; in this context, we have witnessed that our students needed a feeling of being treated in a personal way, a certainty of being guided and supported.

Collaborative EBM Teaching

In medical education, dynamic collaboration between clinician-teachers and librarians can contribute to introduction of principles of evidence-based practice in terms of improvement of bedside teaching and learning by means of searching and using results of published research for patient benefit [4]. Collaborative instruction may improve the educational environment and offer new teaching tools, eg. interactive sessions take place in the. Library settings and are facilitated by library staff. It is also a good opportunity for making conventional instruction more attractive by development of web-based modules. The final goal of these efforts should be better flexibility of graduates under highly competitive conditions. It is a well-described fact [5,6] that active collaboration is based on several principles: First, there should be the same goal and visions on both sides. The second issue is extremely important, because it concerns trust and respect. In particular, it is the librarians who have to prove

their competencies to deserve the respect from clinician-teachers and students. To a certain degree, the roles of medical librarians are irreplaceable which is a pre-requisite for establishing long-term working relationships. The studies describing experience with the development of information literacy skills have shown that if information-related skills are taught by librarians, the teaching process is more authentic and better accepted by students [7].

Limitations

When looking back at our results, we have to admit some weaknesses, in particular, short-time experience obtained during one experimental and one implementation year; we have been able to systematically apply evidence based practice to teaching one course only; substantial limitations are related to heterogeneous students characteristics, eg. some gaps in epidemiological thinking, various levels of motivation and information technology skills. The most frequently stated obstacle are extra time requirements.

Take-home Message

Bedside medical education is a mixture of tradition, art, modern science, and humanity. It increases student motivation, if integrated with evidence-based practice, information literacy training, and supported by e-learning. Better healthcare requires better medical education.

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