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Students views about GDM education with EPMP (Electronic Patient Management Problem) method

Behrooz Golchai a, * Ideh Dadgarana,b *, Seyed Mojtaba a, Soheila Majidi a, Javad Golchi a

a Guilan University of Medical Sciences (GUMS). Educational Vice chancellor, ShahidAzodi st. Rasht, Guilan/Iran
b Tehran University of Medical Sciences(TUMS)., Eastern-Nosrat Street, Tohid Square, P.O.Box 1419733171 Tehran/ Iran;

Abstract

Introduction: GDM (Gestational diabetes mellitus) education is an important topic in medical science courses. How clinical decision making and management of maternal diabetes in pregnancy, is a term in which in gestational diabetes is concerned. EPMP simulation method is one of the Web based methods and is used to reinforcement student clinical reasoning and evaluation decision making ability in different situation. EPMP has developed a large evolution in usage of simulation method in medical science education with advantages such as complicated branches in problem solving, immediate response to student performance and reassessment of prior selections. Purpose: To determine students views about GDM education with EPMP educational software Material and method: This study is a cross sectional method. Research samples were community sample included 44 midwifery students in fourth and sixth semesters. Then, pretest and GDM education accomplished with EPMP, an educational software, that designed by researchers. Next, data was gathered regarding to student views with prepared researcher questionnaire consist of 10 questions. Afterwards the data was evaluated with SPSS ver. 19.0. Findings: Study results indicate 91% announce that this method is new method and 84.5% had believed this method is appropriate for reinforcements make a decision power. Conclusion: EPMP method is very appropriate to teach lessons that need to clinical reasoning. This method cause student participates in active learning process and they are away from passive learning process. So it suggests be used to reinforcement student clinical reasoning ability in some of specific lessons.

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Background: Gestational diabetes mellitus (GDM) is one of pregnancy consequences defined as different intolerance levels toward carbohydrates which is initially recognized or happened during pregnancy [1]. GDM is the most common metabolic consequence of pregnancy and involves about 4 % of total gestations in the United States of America [2]. GDM educations are one of important fields in medical sciences and the way of making decisions and management of mothers carrying GDM is among discussions strongly emphasized in GDM studies. Clinical decision making is an essential part of clinical performance; indeed, it is the criterion for the patient and an index for expert judgment. Clinical instructors always spend big deal of time to assist students to find most useful evidence to reach recognition and clinical program. Within the last decades, searching in clinical reasoning processes and development and trial of the favorable methods for evaluation and decision making have been strongly focused. Todays, there existed an effort to enhance clinical reasoning ability of the medical sciences students through employing appropriate methods, such as simulation, in teaching process. Simulators have high similarities with the reality and offer reasoning method giving a little hint and then discussing about a clinical problem. Patient Management Problem (PMP) is one of simulating methods used to promote clinical reasoning ability of medical sciences students and used for measuring clinical decision making in different medical situations [3]. PMP is commonly initiated with a clinical term related to a patient’s problem, case explanation, and information of the patient examination. The steps of PMP
are well structured and in each step the students are asked to appropriately make decision about patient’s problem. After making the decision, the other latent information about the patient’s problem will emerge. Then, the student makes the next decisions based on emerged results. Three steps including offering the information, decision making, and feedback are repeated for several times before and after the problem. Different media, such as printed manuscripts, slides, audio cassettes, computer, and standard patients are used to employ PMP method [4]. PMP is divided into two categories: Linear and branched. In the linear type, the individual is asked a question which includes several parts: First, some information about the patient is offered to the student and then the student is asked a question. The learner has to answer the question as explanatory or multiple choice ways. In the second step, the learner is supplied with the feedbacks and then the other part of the same question is asked. This trend is repeated for several times. In each step the individual should take an efficient decision. In the branched PMP, in each step, based on the students’ answer to the question they will be faced with different part and a new route will emerge for them for decision making. The electronic version of PMP (EPMP), having advantages such as introducing complicated branches for solving the problems, offering the instant feedback for student’s performance, enabling for reevaluation of the previous choices, and using audiovisual facilities during learning process have made a dramatic change in application of this method to enhance decision making abilities of medical sciences students. The customized goal of this method is development of students’ skills and abilities in gathering information, categorization of the assumptions based on patients’ problems, and finally solving the problem.

Implementation method

In this study, before starting instruction process, like traditional teaching methods, students had to take pre-test so the instructor would be able to provide relevant educational content for the students. Then, using reference books and internet as well as other scientific sources, educational content was prepared. In this regard, medical education expert elaborately explained EMPM software production method and its steps and different types for the instructor and computer technician and then after several revisions of content and offering necessary proposals, EPMP content were offered to the instructors to teach based on that. It must be mentioned that the prepared content can be performed both in online (EPMP) and offline (CPMP) ways. In this research EPMP, which can be performed in any sites, was applied. Since this method were used for first time, before its implementation it is necessary to describe the way in which this method is applied and taught. The participants of this study were 44 midwifery Bsc students in their 4th and 6th semesters. In order to meet everyone’s optimum performance each participant was supplied with a computer set. Besides, the instructor was provided a laptop computer to explain clinical problems and discuss them with students; then, each student chose his decision using the computer. It is worth to mention that the designed EPMP was a linear one in which the frequent questions about the considered case was offered one by one to the student after offering their feedback. In addition, this software was able for offering total score feedback of the student as well as right answer of the questions after instruction and made it possible for students to review their answers. This process was conducted in a 2-hour session in the first semester of 2011 to 2012 study year. After teaching process, the instructor evaluated clinical learning and reasoning of the students through software feedback. Moreover, at the end of second session, a questionnaire including 10 questions designed by the researcher about EMPMP method was offered to the students to evaluate teaching through EPMP method and offer their opinions about it.

Results

The results of instructor’s evaluation revealed that reasoning and analysis capability of the students is in the good level (71 %). The results of students polling indicated that the majority of them (91 %) report EPMP as a novel method and 84.5 % of them believed that it is an efficient method to enhance students’ decision making abilities. Furthermore, the majority of students (more than 90 %) believed that using this method clinical reasoning abilities of the students are enhanced.
Discussion

EPMP is an appropriate method to promote students’ reasoning ability. Through this method the learners learn that how they can consider all conditions facing with a clinical case and then considering all clinical information they can take an efficient decision for patients’ care and treatment in the clinical environment (ward, health centers, etc.). Also, at the faculty level, this method can serve as a model for other instructors to teach courses which need clinical reasoning as well as students’ analyzing abilities. At the university scale, this software can be used in other medical science related field of studies in which a particular medical science course is instructed. Moreover, at the national scale, using this software for teaching most of clinical course students’ clinical reasoning will enhance and in the national contests students will achieve higher scores. If the university financially cover the costs needed for production of the software, it is possible to develop spin-off section of the university in the national scale through advertisements; so, it will serve as both an income resource and a way for publicizing the university in the national level. One of main advantages of EPMP is this fact that the method is very efficient in instruction of courses which need reasoning. However, like any other teaching method, it involves some challenges and shortcomings, e.g. high expenses needed for production of the software since its production requires someone who is expert in medical education field and is able to design steps and phases needed for this method. Further, for implementation of the method the students are required to be familiar with operating systems such as Windows and internet. The final challenge seen in all teaching methods which have answers is that they are rather time-consuming. Among the opportunities for application of this method is offering conditions simulated with the real clinical situations which causes students come out from passive and servile learning and actively participate in learning process. It is worth to mention that one of the challenges of this method is students’ dependency on the software and electronic learning which may causes their unwillingness to interact with other students.

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References


