

# HOW TO ASSESS AND IMPROVE QUALITY OF MEDICAL EDUCATION: LESSONS LEARNED FROM FACULTY OF MEDICINE IN SARAJEVO

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## ABSTRACT

There is no such science as medicine where half life is 7 years, what means that in 3-4 years 50% of current knowledge will be wrong. If doctors use old techniques and methods then they will cure patients wrongly. Very fast and rapid increase of biomedical sciences and medical information in certain way force medical professionals to continuity learning in order to stay update. In this project a quantitative method of examination has been used. For the purposes of the research a survey questionnaires were created consisted of 28, 35 and 18 questions for all three groups of examinees. Beside general characteristics (sex, age, faculty, and year of studies) the questionnaire included questions referring to the variables of structure, process and results in the system of education. Authors used Lickert five degree scale for the evaluation. Total of 521 students of the faculties of biomedical science in Sarajevo were surveyed; students of the Faculty of Medicine, Faculty of Dental Medicine (Stomatology), Faculty of Pharmacy, Nursing College, students of final year and postgraduate students from Faculty of Medicine, University of Sarajevo. On the basis of survey results authors concluded that the following should be done: The reform needs to be carried out in accordance with possibilities and needs, general faculty rules should include regulations that refer to insuring the quality of education, a continuous quality of studying needs to be insured – internal and external evaluation of the quality of work of respective education institution needs to be carried out, education standards need to be set, i.e. minimum knowledge and skills which a student needs to gain during studies is to be set, curriculums and programs need to be harmonized with countries in the region and Western Europe, Regular evaluation of lecturers needs to be done, Increase of size and content of the practical part of teaching needs to be encouraged as well as distance learning organized on Cathedra for Medical Informatics and Family Medicine at Faculty of Medicine in Sarajevo, increase of international and regional mobility of students needs to be encouraged, students need to be included in the faculty reform, panel discussions need to be organized where students will be informed on the reform progress, where students can talk about their problems, give suggestions and solutions to certain situations. Students are motivated to study further when their ideas are accepted, the number of books in libraries

needs to increase in accordance with financial possibilities and audio/visual and electronic aids need to be purchased and in place. Concept of quality incorporates at least three dimensions and has three different meanings. Those are:

- Comparative meaning in terms of the level of perfectionist,
- Quantitative meaning in terms of the level accessed and
- Appropriateness for certain purpose.

Objective of this study is to begin process of improvement of educational process at biomedical faculties at University of Sarajevo, but ultimate goal of all involved in medical education should be large number of health professionals who will be able to work independently and cure patients in best manner in 21st century.

KEY WORDS: quality of medical education, assessment, survey, learning

## INTRODUCTION

There is no such science as medicine where half life is 7 years, what means that in 3-4 years 50% of current knowledge will be wrong. If doctors use old techniques and methods then they will cure patients wrongly. Very fast and rapid increase of biomedical sciences and medical information in certain way push medical professionals to continuity learning in order to stay update. All above emphases fact that doctors need swift access to medical information on developments and improvements as well as medical students who desire increased exposure to basic or clinical research. Also, medical students need quality education to enable them to work independently after graduation, to have practical knowledge how to receive latest medical information without delay, and to have knowledge to search for new and the best possible and accurate techniques, therapy and treatments (1,2,3,4,5). Bologna declaration is new European approach how to achieve all mentioned. Bosnia and Herzegovina as a state recognized necessitates of this development perspective and signed it on 18 September 2003. In the light of new approach to university education and the process of joining European Union authors decided to access and evaluate current educational process at Faculty of Medicine, University of Sarajevo. Aims of the study are: to determine current level of knowledge among medical students, to determine level of knowledge among medical students before enrolment at Faculty of Medicine and other biomedical faculties (Pharmaceutical, Stomatology and Nursing college), University of Sarajevo, to find out students' opinion on their needs for further education and shortcomings in the educational system. In the study also were include students of the final year and postgraduate student from Faculty of Medicine, University of Sarajevo. Students also gave suggestions what should be changes in the curriculum. Surveyed were students of

all six year of study, students of final year and postgraduate students at biomedical faculties with accent on Faculty of Medicine, University of Sarajevo. Mechanisms for assessment, advancement and management of the quality could be different. Authors used Donabedian's tripartite approach to the quality: structure, process and results as main elements of the quality taken over from industry. The structure quality includes characteristics of resources of an education institution. The process quality implies activities which were taken by university teaching staff as well as other involved for the purpose of education of students. The end result quality implies gained knowledge and skills during the studies as well as readiness to perform tasks of medical doctor (6,7,8,9). Different systems of education of future medical workers were tried in the past. Each system intended to prepare young medical workers for a complex medical practice with all possible advantages and shortcomings. The ex-cathedra lectures, practical examinations, seminars and the final exam were the practice that was used and it is still in use at B&H faculties where a student is nothing but passive gatherer of information presented by a lecturer. Some of the methods of education popular in the world are: bedside teaching, discipline based approach, elective program, integrated teaching, self directed learning, small group teaching, subject based education. Method which is being advocated the most today, recommended by World Health Organization, is the problem based learning which is characterized by an emphasis on student self-motivation and their responsibility to learn, orientation to problems which students will encounter in their practice, assessment of total progress of students instead of examining individual disciplines, exercise of professional skills. The biggest advantage of contemporary methods in education is that students learn through self-examination and critical thinking how to learn, how and where to look for necessary information and how to use it. Students are ac-

tive participants in their education and for the great part it is up to them what the end result will be. In all this, teachers have a new role. In order to take up that role, they need specific education which will enable them to promote, make easier and lead the self-directed learning process instead of giving student answers to problems which they will meet in their professional career.

## MATERIALS AND METHODS

In this project a quantitative method of examination has been used. For the purposes of the research a survey questionnaires were created consisted of 28, 35 and 18 questions. Beside general characteristics (sex, age, faculty, and year of studies) the questionnaire included questions referring to the variables of structure, process and results in the system of education. Authors used Lickert five degree scale for the evaluation and assessment. Total of 521 students of the faculties of biomedical science in Sarajevo were surveyed; students of the Faculty of Medicine, Faculty of Dental Medicine (Stomatology), Faculty of Pharmacy, Nursing College and post-graduate students from Faculty of Medicine, University of Sarajevo. Questions were formulated in a clear and simple way, easy to understand and in line with intellectual capabilities of an average student. Participants in the survey were randomly chosen but with the attention to have students of all years of studies and all biomedical faculties represented. The surveys were carried out in period February – June 2006 at the biomedical faculties in Sarajevo. The survey questionnaires were created on the basis of a model for evaluation of quality of medical education. A data base was created in MS Access, questions were created and the survey results were shown in graphs. Questionnaires used in the survey.

## RESULTS

In the survey 491 undergraduate students were interviewed: 98 – first year, 81 – second year, 79 – third year, 84 – fourth year, 78 – fifth year and 71 – final year of study. Sex structure of interviewed student was: 64% of female and 36% of male. Organization of the teaching process (question 6) was given a mark 2,88 by students (Figure 2). The number of books in library (question 7) was given a mark 2,15 by students. Student service work (question 8) was given a mark 3,15 by students. Average mark given by students for equipment of faculties with modern technical tools which help in the realization of the teaching process (question 9) was 2,51. Rooms where classes take place in their respective faculty students gave an aver-

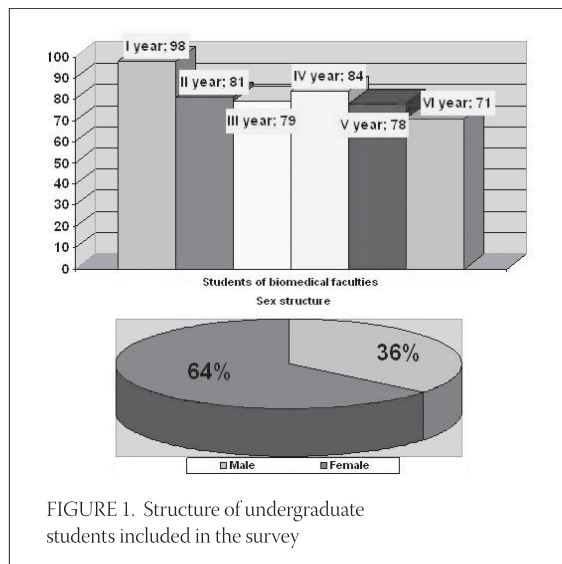


FIGURE 1. Structure of undergraduate students included in the survey

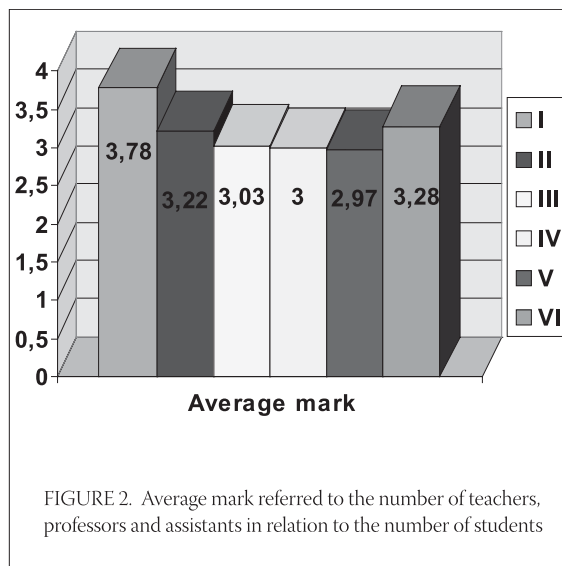


FIGURE 2. Average mark referred to the number of teachers, professors and assistants in relation to the number of students

age mark 3,09 (question 10). In the question 11, students marked the quality of lectures at their respective faculties with an average mark 3,34. In the question 12, students could, if they find something wrong with their lecturers, select multiple answers among the ones that were offered. Results were shown in figure 2 per year of study. Figure 4 presents the key question: Do you feel that after you graduate you can work without help of experience physicians in primary health care? Results were shown in figure 3 per year of study. On the basis of survey results one concludes that the following should be done:

- The reform needs to be carried out in accordance with possibilities and needs.
- General faculty rules should include regulations that refer to insuring the quality of education.
- A continuous quality of studying needs to be insured – internal and external evaluation of the quality of work of respective education

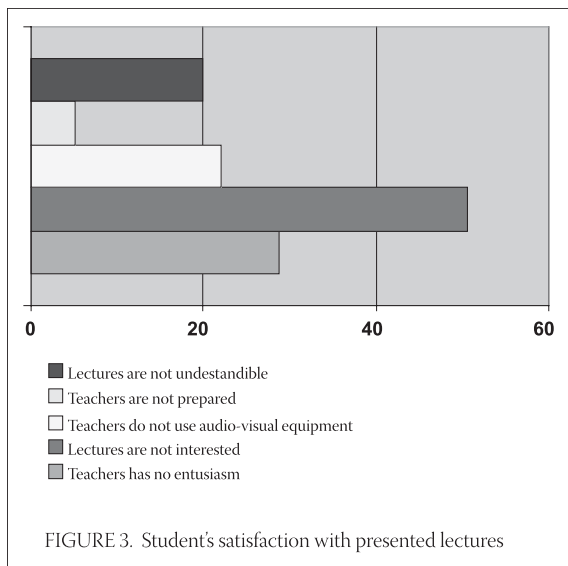


FIGURE 3. Student's satisfaction with presented lectures

institution needs to be carried out.

- Education standards need to be set, i.e. minimum knowledge and skills which a student needs to gain during studies is to be set.
- Curriculums and programs need to be harmonized with countries in the region and Western Europe.
- Regular evaluation of lecturers needs to be done.
- Increase of size and content of the practical part of teaching needs to be encouraged as well as distance learning organized on Cathedra for Medical Informatics and Family Medicine at Faculty of Medicine in Sarajevo. Increase of international and regional mobility of students needs to be encouraged.
- Students need to be included in the faculty reform.
- Panel discussions need to be organized where students will be informed on the reform progress, where students can talk about their problems, give suggestions and solutions to

certain situations. Students are motivated to study further when their ideas are accepted.

- The number of books in libraries needs to increase in accordance with financial possibilities and audio/visual and electronic aids need to be purchased.

## DISCUSSION

World health organization uses the following scheme for quality assessment. The key element of quality system are: Organization of management including quality policy and plan, clear organisational structure, designated individuals with responsibility for establishing and managing the quality system and job descriptions for all staff. Furthermore: national and international standards (Bologna declaration), documentation including standard operating procedures and document control, training of all staff, assessment including evaluation, validation, internal quality control, audit and external quality assessment. Continuous quality improvement requires ongoing assessment and review of the effectiveness of all elements of the quality system using both internal and external mechanisms to ensure that the quality standards are being met consistently. Benefits of internal and external quality assessment include: comparison of own performance with performance of other educational institutions, identification of problems relating to educational process, provision of information and education to improve given objectives, encouragement of best practice. Also, provision of useful information can assist in setting standards, review equipment, literature and educational techniques, and to ensure effective planning and organization (10,11).

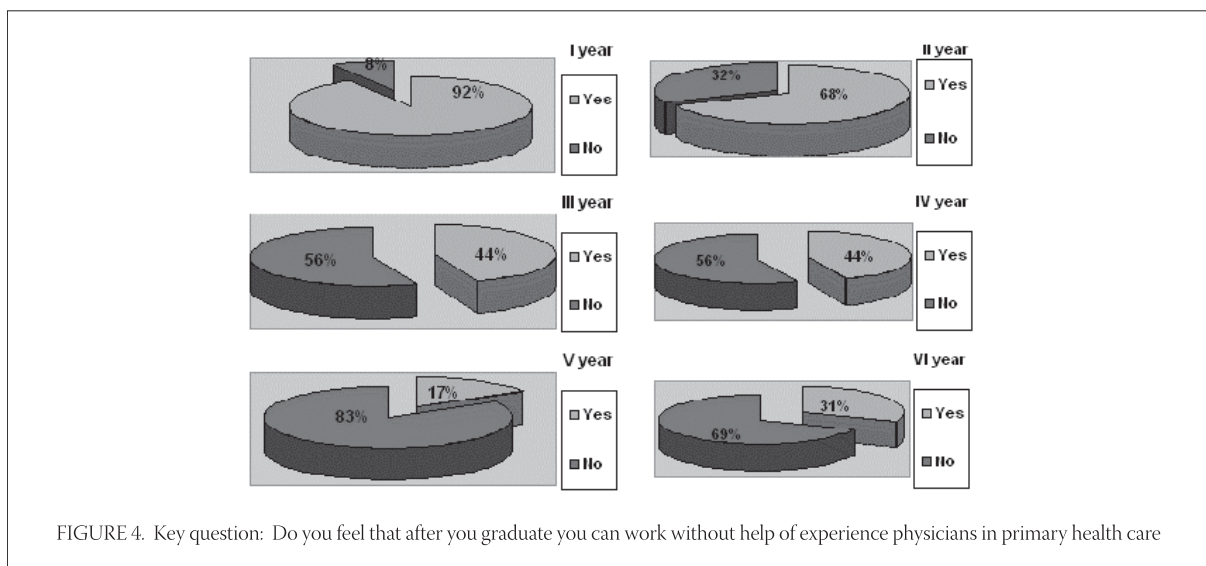


FIGURE 4. Key question: Do you feel that after you graduate you can work without help of experience physicians in primary health care

## CONCLUSION

This project conducted and realized under the teaching staff from Cathedra for Medical Informatics, Faculty of Medicine University of Sarajevo is one of the very first trays to assess, monitor, evaluate and in the professional manner to measure and improve quality of educational process and ability of graduates to enter into health system trained and having proper competencies to cure patients of 21st century. Concept of quality incorporates at least three dimensions and has three different meanings. Those are:

- Comparative meaning in terms of the level of perfectionist,
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First phase in improving quality of medical education should be regular measuring of standard teaching procedure and organization of the overall process at the University. Processes and outcome indicators that could be used to access the success should be agreed on. Inspection bodies from the cantonal ministry of education have not been focused on improvement of education but on minimal standards for the function of educational process. It is one of the reasons why quality of the education varies from university to university. We are all witnesses of the number of new universities all over the BiH which make very bad situation in education worse. After first phase it should be established accreditation agency for education institutions with very specific goals in order to divide "good" institutions from "bad". Also, in terms of medical education Ministry of Health should take part in educational process and be proactive in creation of curriculum and to determine number of necessary medical professionals needed in health system. Objective of this study is to begin process of improvement of educational process at biomedical faculties at University of Sarajevo, but ultimate goal of all involved in medical education should be large number of health professionals who will be able to work independently and cure patients in best manner in 21st century.

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