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Assessment the Role of Basic Science Courses in Dentistry Capability Based on Opinion of Dentistry Students of Babol Medical Science University

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Abstract

Curriculums need a correct cognition of students' requirements in order to train the qualified people. Current study is designed and conducted to assess the role of basic science courses on dentistry ability of Dentistry Students of Babol Medical Science University. This cross-sectional study is conducted on dentistry students studying in the last two semesters at Babol University of Medical Sciences admitted in 2007 and 2008 and by using a questionnaires 38 questions about 9 competencies of dentistry. The answers were classified into five grades from zero to four with scores including Not at all = 0, A little = 1, Somehow = 2, Very = 3, and Very much = 4. The required information was extracted from information recording forms and was calculated and analyzed by using SPSs.V.18 software and in terms of frequency of answers, frequency percentage and average marks.

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Among 60 contestants (23 males and 37 females), the highest competency score was related to effective communication (% 63), using basic sciences in direction of patient, diagnosis, treatment and prevention (%61) and solving the problem (%61). The lowest score of competency is related respectively to the community and social grounds for healthcare (%42) and preliminary clinical qualifications (%45).As commented by students, basic science courses are not effective on training of professional dentists. Thus some changes are needed to conduct on basic science curriculums to train dentists with high competency.

Key words: competency; students; basic science courses; dentistry.

1. Introduction

In new world, many basis changes are observed every day in educational centers, especially higher education or university centers [1]. Whereas medical science universities are totally responsible to educate professional, skilled and committed human forces to fulfill the needs of people, the exclusive position of science and technology centers is clearing every day more than before in the society [2]. The purpose of dentistry training is to educate dentists with needed capabilities to follow the professionality at work. A university can claim the successfulness to achieve the educational purpose if a high quality could be observed at the university final output [3]. The extent of occupational capability and the professionality of postgraduates of theses universities are depended on amount of training purposes and programs to be accomplished. Presenting new methods such as those based on patient's problem in training of physician group are developed to create a proper connection between the content of basic science courses and the clinical cases. Assessment the relationship and harmony between the quality of dentistry basic science courses and clinical sciences were the concerns of curriculum designers and planners and those who are involved in dentistry science across the world [4]. The studies conducted in medical schools indicated that medical students do not have the needed competencies even the desired basic capabilities such that the medical schools of Indiana and Brown universities introduced a medical curriculum based on competency included 9 cases of capabilities that are mentioned as following: effective communication, preliminary clinical qualifications, using sciences to direct diagnosis, controlling the patient, treatment and prevention, lifelong learning, self-awareness, self-care and personal development, healthcare social and communicative possibilities, moral ratiocination and judgment, problem solving and recognizing the role of a professional practitioner [5,6].Whereas the knowledge about usefulness of basic science courses is determinable for future planning and applying better and more effective educational methods, the usefulness and quality and quantity of basic scientific education always been in doubt and question [7] . The studies indicated that university knowledge about students and society professional requirements was limited and uncompleted and the training purposes of students are not in harmony with society needs. The above problem causes the assessment based on capability and competency educational qualification to be an important issue in education and the determination of competency evaluation and accurate measurement of its performance was an important subject to develop a systematic approach for training and evaluation [8]. Traditionally, dentistry training is concentrated on subjects that are trained to the students during their studying. But now in educational systems, the focus is on abilities that are created after passing the educational period in students. Thus according to above definition about the role of general dentist in health system, it is needed to evaluate the students capability to remove the possible shortages through creating needed changes in curriculums. On this basis, many programs

are conducted across the word to correct and review the dentistry curriculum. Our country is not excluded from this principle and above changes make it unavoidable to review the dentistry curriculum. Dentistry curriculum have changed in our country. Undoubtedly the dentistry traditional training method has many defects so this current study helps to achieve a good understanding of the problems observed in dentistry traditional training methods. Also to evaluate new training method, the traditional method results are needed; the findings of this study can be used for future comparison between the traditional training and the new educational method. Therefore current study is designed on the purpose of assessing the role of basic science courses in dentistry occupation competency based on dentistry students' viewpoint from Babol Medical Science University.

2. Materials and methods

This study is conducted in terms of a cross-sectional study. The population subject of research includes the dentistry students studying in the last two semesters at Babol University of Medical Sciences admitted in 2007 and 2008. All the necessary information for conducting this survey was obtained by a questionnaire that had been prepared for this purpose. The questionnaire includes the information related to the 9 competencies consisting of 65 questions. In Iran, Biabangardi and his colleagues estimated its reliability coefficient at 0.85 and the reliability of its contents was confirmed by 10 professors [5]. The questionnaire was modified and the questions decreased to 38 questions. Then, it was distributed between 10% of the students in terms of pilot and 2 weeks later was repeated. Moreover, based on the comments of students, the ambiguous questions were modified and were mentioned in the questionnaire and its reliability was confirmed by two professors.

The comments of students concerning the effect of courses of basic sciences in nourishing the 9 competencies of dentistry graduates (effective communication with the patient, preliminary clinical qualifications, use of sciences in direction, diagnosis and control of patient and treatment and prevention, lifetime learning, personal growth and self-awareness, community and social grounds for healthcares, ethical reasoning and judgment, solving personal problems of patient, diagnosing the role of a professional dentist) were inserted in the questionnaire. The answers were classified into five grades from zero to 4 with scores including Not at all = 0, A little = 1, Somehow = 2, Very = 3, and Very much = 4. The required information was extracted from information recording forms and was calculated and analyzed by using SPSs.V.18 software and in terms of frequency of answers, frequency percentage and average marks.

3. Findings

The population subject of research includes dentistry students who are studying in the last two semesters of Babol University of Medical Sciences admitted in 2007 and 2008 and are divided into 23 males (%37.1) and 37 females (%59.7). The highest score about competency is related to communication (%63), using the basic science to direct the patient (%61) and solving the problem (%61), respectively. The lowest score of competency is respectively for social background of healthcares (%42) and preliminary clinical qualifications (%45).

The average score obtained by students in term of nine competencies of students is shown in table 1. Table 2

shows comparison between the obtained scores by female and male students divided by nine competencies.

Table 1: Scores obtained by students at nine competencies

competency	Maximum score of competency	average	Standard deviation	Percentage of responding
Communication	12	63.7	61.1	%63
Preliminarily clinical qualifications	24	90.10	68.1	%45
Patient directing, diagnosis and etc.	20	26.12	84.1	%61
Lifelong training	16	41.7	75.1	%46
Self-awareness, protection of …..	20	55.9	57.1	%47
Social conditions…	4	68.1	624.0	%42
Reasoning and judgment…	20	83.9	05.2	%49
Solving the problem	24	75.14	94.1	%61
Understanding the role of a/an…..	12	25.6	40.1	%52

Table 2: Comparing the scores obtained by males and females divided based on ninefold competency

Competency	Maximum score of competency	Males Average ± standard deviation	Females Average ± standard deviation	p-value
Communication	12	7.73±1.60	7.56±1.64	0.69
Preliminarily clinical qualifications	24	10.95±1.71	10.86±1.68	0.84
Patient directing, diagnosis and etc.	20	11.69±2.14	12.62±1.56	0.06
Lifelong training	16	7.52±1.56	7.35±1.88	0.71
Self-awareness, protection of …..	20	9.47±1.56	9.59±1.60	0.78
Social conditions…	4	1.56±0.58	1.75±0.64	0.25
Reasoning and judgment…	20	9.69±2.18	9.91±1.99	0.68
Solving the problem	24	14.82±2.12	14.70±1.85	0.81
Understanding the role of a/an…..	12	6.30±1.22	6.21±1.52	0.81

4. Discussion and Conclusion

A major part of curriculums prediction is to determine the training needs in each educational period. Clarifying the students' viewpoint has an important role to make clear the educational needs. Current study is designed and conducted to assess the role of basic sciences courses on dentistry competency based on dentistry students viewpoint of Babol Medical Science University; the study indicated that in term of students' opinion, the basic science courses do not have major role in nine categories of dentistry competency and a meaningful difference was not observed after differentiation the gender.

As commented by students, basic science courses plays higher role in effective communication with patient, using basic sciences to direct the patient, diagnosis, treatment, prevention and solving the problem. In Arak Nasri and his colleagues indicated in their own study that learning knowledge to test the sciences does not have any effect on clinical communication with a patient [9]. In Tabriz Alipour and his colleagues showed same results that there is a separation and lack of harmony between the basic sciences courses and the clinical level courses which confuse the students and make them tired [7]. In Grant study it is shown that passing the courses of communication skills is very helpful and in term of our students, they play a role in communication [10].

By Biabangardi and his colleagues which assessed the opinion of medical professors about the role of basic sciences courses on medical competency, basic science does not have noticeable effect on an effective communication with patient. The participants of Biabangardi's study believed that higher experience to communicate more effective with patient will be achieved after graduation which is against the result of current study [5]. The inconsistency occurs because of the difference between students' role in patient treatment of two medical and dental fields. It seems dentistry students spend more time to treat the patient.

In our study, based on students' comments, the basic science courses have %45 role on preliminary clinical qualifications since basic sciences courses present in training traditional curriculums separately from clinical course, we should not expect the competency of "preliminary clinical qualifications" to be formed in students.

In current study, competency of "using basic sciences to direct the patient, diagnosis, treatment and prevention" and "solving the problem" achieve the highest score after "effective communication". In competency of diagnosis, treatment and prevention, the highest role is achieved in questions about the ability to differentiate between health and disease and also the role of basic sciences courses to understand the basic information obtained from the patient.

Also based on students' comments, basic science obtained lower score in competency of " social conditions of healthcare, self-awareness, self-care and personal development". Based on students viewpoint, lower role in competency was related to self-awareness, self-care and personal development related to the question about capability of determination and distinguish the effective problems on health, welfare and professional capabilities.

The results indicated that changing the curriculums of basic sciences period is needed to train and educate dentists with better competency.

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