

The Effectiveness of the Community Medicine Undergraduate Program in Medical Schools on Enabling Medical Graduates to Work in the Health Systems

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ABSTRACT

Introduction: The main mission of medical schools is to train competent medical trainees for providing primary health care services, management of health care team and improving the health status of the population. The aim of this study was to determine the effectiveness of the undergraduate program of community medicine department among the graduates as general (family) physicians in health system of East Azerbaijan, North-West of Iran. **Methods:** In this cross-sectional study all family physicians of East Azerbaijan province were included. A questionnaire on the views of graduates about the effectiveness of community medicine undergraduate program was used for gathering data. Data were analyzed by T-test, ANOVA, and Pearson correlation. **Results:** Performance of community medicine department in creating competency for providing effective health services among physicians was 2.13 and management competency was 1.96 out of 4. To teach the necessary skills to meet the professional needs in Primary Health Care (PHC), Tabriz Community Medicine Department was better compared to Azad and other medical schools ($p < 0.001$). **Conclusions:** The results of the study showed that the community medicine program in undergraduate medical education was effective for future career of physicians in the health system. There is a need to revise the health management courses in community medicine program.

Introduction

The main objectives of health system are promoting people's health and response to their changing needs.¹ Hence, the efficient and competent human resources are needed to meet these objectives.² Furthermore, Medical schools are responsible for educating physicians capable of meeting the needs of their communities³ such as: providing integrated health care services, managing health team and being able to make plans to improve the health status of the community.⁴

Community-based education has been considered as a suitable approach for health promotion according to various international declarations, summits and policy reports.⁵⁻⁶ Therefore, Medical schools have paid more attention to community-based education since thirty years ago.⁴

A number of researches in the world demonstrate that almost all of the medical students experience their first contact to family medicine and primary health care through community Medicine department. These studies have revealed that medical schools did not meet the expected outcomes. Finally improving the status of community-

based education and revising educational curriculums are recommended.^{4,7-17}

Community-based education has started 25 years ago with establishing Community medicine departments in medical universities of Iran.¹³ For the time being, medical students get familiar with the country health system and get ready for accepting responsibility of health team management, health problem and patient management during the two-months clerkship and internship in community medicine departments.¹⁸ However, there is a gap between education and the direction of medical faculty due to the fact that there is no coordination between medical education and community needs.¹⁴⁻¹⁷

The aim of this study was to determine the effectiveness of undergraduate community medicine program to respond to the complex and dynamic health care system and also to get along with changes in medical education toward competency and outcome based education.²

Methods

A cross-sectional study was conducted among all doctors (worked as a family physician in public sector) in the East

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Azerbaijan province in the North-East of Iran between Dec. 2009 to May 2010. The study population consisted of 367 primary care physicians, the inclusion criteria were minimum 6 month of work history and working in the time of study.

The data were collected using a self-administered, anonymous questionnaire including 11 questions about personal and professional characteristics such as age, sex, year of graduation, graduated university, job experience, employment status, marital status, the distance of the place of work from the province center, covered population, passing two-month community medicine courses.

A 5-point Likert scale was used for section 2, with “completely effective”, “effective”, “relatively effective”, “relatively ineffective”, “completely ineffective” options about family physicians perception on effectiveness of community medicine department educational programs. The 24 items of the questionnaire were categorized in three subscales according to the course plan of undergraduate community medicine program.¹⁸ It also included three open questions about strengths, weaknesses and suggestions.

The questionnaire was originally developed by Jabbari *et al* in 2001.¹⁴ Cronbach’s alpha reliability coefficient was 0.877. Questionnaires were posted to all of 367 doctors with a cover letter explaining the objectives of the study. Furthermore, a code number were added to every questionnaire by the main researcher. Anonymity and confidentiality of respondents were ensured. The participants were reminded by telephone call.

All returned questionnaires were checked manually before they were forwarded to electronic data computer. The qualitative variables were analyzed after changing them into quantitative ones. The data were analyzed by SPSS version 13. The scores were collected and compared. Data analysis involved descriptive statistics, (frequency, relative frequency) and T-test, ANOVA, Pearson correlation were used for data analysis.

Ethical consideration of this study and the study protocol were approved by the Ethics Committee of Tabriz University of Medical Sciences (TUMS), which was in compliance with Helsinki Declaration.

Results

Questionnaires were completed by 236(64.5%) out of 367 family physicians of whom 50% were female, 28.9% (67) were single. Their employment status was different, 63.1% were contracted, 4.9% were formally employed and the rest work in the contract form. Their job experience was $5.238 \pm (4.53)$ years and most of them were graduated in 2000s. The average population that each physician covered was $4131.58 \pm (1298.51)$. 16% of the physicians were graduated from Tabriz Medical School, 14.3% from Azad University of Tabriz and 25% from other universities.

The employed physicians evaluated the relevancy of community medicine educational program to their job needs as follows: 40% good and excellent, 45.1% fair and 14.5% poor.

Table 1 shows the effectiveness of the community medicine programs on physicians’ competency for providing services.

On the scale of 0 to 4, the average of competency for

providing primary health services for each physician was 2.13 ± 0.74 . They evaluated the effectiveness of community medicine on creating competency in providing services in primary health setting 40% effective, 52% relatively effective, and 5% completely ineffective.

No significant correlation was observed between competency and age, graduation year, number of coverage population and distance of work place from the center. But there was correlation between job experience and competency of physicians in providing primary health services ($r=0.092$).

Comparing the mean scores between male and female and marital status were not statistically significant, but shaking down in the rural area had significant relation with the score ($P=0.003$). A significant difference was seen among the groups from different universities, their employment status and quality of education.

Less than one third of participants believed that community medicine course was effective in creating competency in health management, 63.5% found it relatively effective and 6% completely ineffective (Table 2).

The role of the groups in creating competency for management of health centers was average $1.69 \pm (0.69)$ out of 4.

The correlation among the competency for management of health centers, age ($r=0.02$) and job experience ($r=0.03$) was significant. No significant correlation was observed between competency and age, graduation year, covered population and distance of work place. Comparing the averages between sex, marital status and shaking down in the rural area were significant ($P=0.003$).

Having asked three open questions, the strengths and weaknesses of community medicine educational programs were clarified by family physicians (Table 3).

Increasing the knowledge of health system was considered as the strength of the community medicine program by the employed doctors and less training by faculty members in fields as its weakness. Their suggestions for reformation were enabling the physician for management of the system, applicability of educational programs employing experienced faculty members, enabling the physicians for doing office works respectively.

Discussion

We did not find any similar study because of their different educational curriculums. While most of the experts emphasize on the evaluation of the final effect of medical education in work places, unfortunately except a few countries such as Finland,⁷ Sudan,⁹ Vietnam,¹⁰ the others pay less attention to it. Two hundred and thirty eight out of 367 employed physicians participated in this study (64.5%). Ignoring the physicians who had less than 6 months job experience, the level of participation was over 70% which was compatible with Vietnam¹⁰ (87%), Finland⁷ (73.1%). In this respect, the lack of detailed information system about the graduate employment status, great loss of family physicians because of contractual employment and desire to enter to residency can be involved. Therefore, high level of the employed participation is not expected.

In this study the percentages of the compatibility of the community medicine program to the needs of their career

Table 1. distribution of relative frequency in creating competency for providing services in health system

Item	Completely effective and effective (%)	Relatively and little effective (%)	Completely ineffective (%)
The effectiveness of the course on learning the levels of PHC	34.3	61.9	3.8
The effectiveness of the course on acquiring skills for providing PHC services	44.3	49.8	5.9
The effectiveness of the course on evaluation of PHC services	50	46	4
The effectiveness of the course on acquiring skills for outpatient management	31.2	60.8	8

Table 2. Distribution of relative frequency of physicians' belief about the course in creating competency for the management of health care centers

Item	Completely effective and effective (%)	Relatively and little effective (%)	Completely ineffective (%)
The effectiveness of the course on the knowledge about social aspects of the health	30.8	65.8	3.4
The effectiveness of the course on the knowledge about whole system	36.3	61.2	2.5
The effectiveness of the course on the knowledge about the country health system	46.8	51.1	2.2
The effectiveness of the workshops on management skills	21.5	68.1	10.3
The effectiveness of the practical classes on management skills	30.6	61.2	7.9
The effectiveness of the practical classes on evaluation skills	22.9	72.4	4.7

Table 3. The strengths and weaknesses of community medicine educational programs mentioned by family physicians and their suggestions.

Strengths	Number of respondents (%)	Rank
Familiarity with health system and PHC	133 (44.03)	1
Acquiring basic skills of family medicine	12 (3.97)	2
Familiarity and competency for providing PHC services	12 (3.97)	3
Weaknesses		
Less training by faculty members	59 (21.93)	1
Poor health system management skills	49 (18.21)	2
Poor collaboration between health and education deputies	13 (4.65)	3
Less outpatient training	11 (4.08)	4

were 40% good and excellent, 45% fair and 14.5% poor. However, 84% of the students were more satisfied with the faculty health educational programs than the hospital ones in Finland. Also in a study in Finland⁷ the percentages for the question about the capability of the medical education in meeting their needs in work place were 30% good, 46% fair and 24% poor which were relatively compatible with our data. In Finland the question was asked from the doctors of all wards of hospital (57%), health center (26%) research centers and other organizations (9%) which can be its difference with the present study.

The result achieved in the evaluation on taught skills was 2.001, whereas it was three times more (22.4) among the last year medical students in Turkey.⁴ In both studies the students emphasized on the role of community-oriented curriculums in enabling them to work at health centers as soon as they graduate. In addition, in our study the most important suggestion of the physicians was the promotion of the physicians' competency for management. In another study done in Karachi, Pakistan,⁸ the level of acquired skills was 19.1 compared to basic science (39.1%) and clinical one (30%). In a study done by Nuffield institution and WHO on Iranian health managers, presenting applicable materials in education and enabling those in management of health system were focused on.¹⁹

The other aspect of this study was evaluating the capability of the physicians in providing services in the health system. The level of the program effectiveness was as follows: 40% effective, 52% fairly effective and 5.5 ineffective. In the previous study done by our colleagues, the highest percentage (52%) was for providing health services to mother and child.¹⁴ However, in this study the highest percentage (50%) was for the evaluation of PHC services by doctors.

The results are closer to the idea that medical education does not prepare the physicians for working at primary health care and general health in 21st century.¹¹

The graduates in Finland, on the other hand, were significantly satisfied with training the health (84%), so it is crucial that some basic changes be seriously done on the educational curriculum.¹⁹

The data on evaluation of the educational programs in Ege University in Turkey has found the community-oriented educational program effective in achieving competency for solving the problems of the society.¹¹ In a research in Hacettepe university in Turkey the level of the skill for providing PHC services were 2.44 which were closer to ours, 2.13.⁴ However, the level of this skill was 86% in Gezira University in Sudan compared to Khartoum University which was 59%. The contradiction was related to the methodology of the research. In this study the level of creating competency in physicians in management of health and treatment centers was 1.96 and in two universities of Sudan were 79% and 47% respectively.⁹ This result is compatible with the result of the open question which asked the participants' suggestions for managers and programmers because competency for management of health system was prior for the physicians. Besides, in a research published by WHO and Leeds institute, the managers insisted on the necessity of their competency in management and team works.¹⁹ It was reported by Karachi medical school that the percentage of students who had

learnt general health skills was low(19.1%). So, it could be said that creating competency for management of health centers must be considered more than the other aspects of educational program.

Conclusion

The effectiveness of undergraduate community medicine program in enabling the employed doctors in family physician program for providing PHC services was good and in management of health centers was not satisfactory. The undergraduate community medicine program needs a revision specially in executing parts of the programs (the way of holding educational fields and lodging in them). Our study is similar to those few ones in the world emphasizing on necessity and effectiveness of community-based education which is the only strategy to guarantee the successful of PHC.

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Competing interests

None to be declared.

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