Evaluation of "Office-based" Course of Intern Students at Shahid Beheshti University of Medical Sciences

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Abstract

Background and Purpose: *"Office-based" course in General Medical Curriculum of Shahid Beheshti School of medicine (the reform program) is a four-month course that is presented in the last six months of the program for interns. Office is a major practice setting after graduation for general practitioner in Iran and for this purpose physicians' offices in health care centers have been selected.*
Purpose of the course is to prepare interns to work independently and they have passed all their courses and had adequate knowledge to practice but they had not enough experience of office-based practice in the community and outpatient settings. This study was designed and implemented aimed to determine the program's weaknesses and strengths in the range of the course stakeholders 'questions (5 major questions), and provide proposed solutions to policy-makers in order to improve and promote the program of "office- based education internship" of Shahid Beheshti School of Medicine.
Methods: *The assessment was conducted in 3 descriptive study and the population under study included 44 interns and 36 physician mentor in 36 health care centers which were all centers under office based education plan in Shahid Beheshti medical school from October till December of 2014.*
The instruments used for data collection were questionnaires (mentor physician and intern students) and a check list made by the researcher.
Mentor physician questionnaire contained 23 items, student questionnaire contained 20 items and documentations review check list and evidence included contained 30 items. Twenty items were on a 4-point Likert-type (weak, less than expected, as expected as and higher than expected), 14 items on a 3-point Likert-type (none, partially, totally), 33 items on two-choice question (Yes/No) and 6 as an open question. All items had the same value. Face and content validity were checked by Scientific Committee and evaluations of Shahid Beheshti University of Medical Sciences.
For checking educational achievement, a student self-assessment and mentor assessment were performed in 3status, at the beginning of the course, after 2 months and after 4 months.
Results: *The gap between design and implementation was at least 14.1%. More than 75% of mentors had desirable conditions in terms of scientific, educational and professional competencies from the perspective of students but mentor physicians' abilities in basic skills of practice was lower compared with educational and professional abilities.*
Students' skills at the beginning of the first two months of office-based course internship was lower than expected in all areas and at the end of the 4-month course learning reached 95% to 100%.
Per capita, variety and number of patients referring to teach students (90.6% of the centers) were sufficient. 66.7% of mentor physicians were interested in working as a general physician and 42.7% were interested in teaching students. 52.8% of mentor physicians did not receive any fee and 100% of the recipients were not satisfied with the amount of the fee. In 81.2% of health care centers, work and training space was appropriate and there were some difficulties about equipment.

Conclusions: *The results of this study showed that health centers are appropriate educational setting for general medical students' office-based course and effective on promoting their essential skills of practice. Although educational and professional competencies of about 75% of mentors was desirable but the necessity of considering mentors' training, becoming more familiar with the goals and standards of the program, as well as the promotion of knowledge at the same time with considering financial motives and job promotion can play an important role in presenting this program.*
The need to pay attention to provide basic facilities in the centers, as well as continuous and periodic evaluation are other recommendations of the study.

Keywords: *EVALUATION, OFFICE-BASED COURSE*

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Introduction

Olson et al. showed that it is already difficult for students to gain adequate exposure to patients in teaching hospitals, in the greater Newcastle area of New South Wales (1). Nowadays there is greater emphasis in outpatient medical education, because the severity of hospitalized patients' illness has increased, the length of hospital stays decreased and physicians are utilizing the outpatient setting to evaluate and treat all but the most seriously ill patients (2). Internal medicine has been moving from the inpatient to the ambulatory setting for the education of both medical students and residents, provided for the most part by the need for better graduates (3).

The results of other studies have shown that positions of outpatient education provide the best opportunity for learning common outpatient problems, chronic diseases' management, screening, health maintenance, patient-physician relationship and psychosocial aspects of care (4, 5). All outpatient education sites are not the same. The ambulatory teaching site is recognized valuable by medical students. These sites had an adequate number with variety of patients and students preferred enthusiastic and available preceptors (6, 7). Irby reviewed the articles and suggested the provision of direct supervision, accurate evaluation and frequent feedback as critical issues for teaching in the ambulatory setting (6, 8, 9)

Office-based course is a course in which Interns learn to assess and manage common ambulatory problems through office experiences under supervision and guidance of their preceptors (10).

General practitioner's office is a place in which patients are managed irrespective of age, sex and illness. In the GP's office, patient's problem solving and decision-making process is different from specialized health care centers and is based on the prevalence and incidence of a disease at the community level, in undifferentiated way and at early stage of development, which shows the importance of office-based education for general practitioner students (8).

The ambulatory setting offers unique learning opportunities for learners including, caring for patients whom are seen primarily in outpatient setting (focused history taking, physical examination, reasoning and patient management based on patient compliant), observing the natural course and treated progression of diseases through continuity of care, practicing health promotion and disease

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prevention strategies, developing patient communication and negotiation skills and dealing with social, financial and ethical aspects of medical care (8, 11).

Increasing self-confidence in student, offering a choice between therapeutic and diagnostic options for a patient is other features of office-based education program (11). Educational institutions require physicians (community-based) interested in teaching students in their offices (8, 12).

UME program of Shahid Beheshti medical school has been reformed from October 2004 with several interventions including change in organization of content and educational strategies in all the 4 phases. The "office-based education" course is a major change in the fourth phase (internship) of Shahid Beheshti UME program. In traditional UME program in Iran, medical students were passing 18 months as an intern and were graduating as an independent general practitioner, but in the reform program they should pass the new four-month course, "office-based education course" before graduation.

"Office-based education" course in reform program is a 4-month course that is presented to interns in the last 6 months of the program. The purpose of office-based education program is to prepare interns who pass all their education stages and have enough knowledge to practice but have no office practice experience in the community environment and for outpatient. The 4-month office-based education program helps interns acquiring necessary experience by mentor physicians in health centers to be in their main and real position at the community level and in a controlled environment similar to the real environment (8).

Concerns about the quality of community-based education have been expressed, and a call has been issued to assess the quality of medical education, particularly in remote clinical teaching sites.

After more than eight cohorts of interns, which past the course, now it's time to evaluate the processes and outcomes of the program. It is necessary to evaluate and review training programs quantitatively and qualitatively in order to improve the quality complying with predetermined criteria and standards (13, 14).

Evaluation of office-based education course of Shahid Beheshti School of Medicine is desperately needed to introduce more of its strengths and weaknesses.

Methods

Identification of main question of evaluation

We interviewed with major stakeholders namely the mangers in medical school and health deputy, faculty members and students, to identify their concerns and to determine the questions and focus of evaluation. After divergent and convergent phase for refinement of questions, we listed questions of evaluation as below:

1. How much gap is between design and implementation of "office based course" in Shahid Beheshti medical school?

2. Is the health care GPs' office appropriate as a educational setting for "office based course "?

- Is the case mix in the offices appropriate for general practice?
- Do physician mentors have qualification for teaching medical students?
- Is there enough educational equipment in health care centers?

3. Are there any educational quality assurance system in place for supervising the education in the offices?

4. How much are medical students interested in practice as a general practioner in future?

5. To what extent the medical students achieved the objectives of office based course?

Evaluation of the office based education course were performed in 3 descriptive study and the population under study included 44 interns (from 52 interns) and 36 physician mentor (from 39 mentors) from 36 Shahid Beheshti university health care centers where office based education program were running from October till December of 2014 The Questioners were developed based on main evaluation questions identified and the concerns expressed by stakeholders in interviews. Two questioners were designed: one had 20 items for medical students and one with 23 items for physician mentors with 3 option (not at all to all) or 4 option (poor to more than expectation) Likert's scale with 6 open. Also one checklist with 30 items was used for observation of facilities in the health care centers by one of the researchers for all the health care centers.

All health care centers were in Tehran and affiliated to East, North and Shemiranat health care networks of Shahid Beheshti University of Medicine. Content validity of questions was checked by panel of experts familiar with the course. Case mix and case count of all the health care centers were calculated at one month later.

For checking educational achievement, a student self-assessment was arranged based on the course objectives in 3 statuses, at the beginning of the course, after 2 months and after 4 months.

Also the physician mentors estimated student competencies based on the course objective at the same times.

Most of concerns were seen from two or three view points for increasing validity. Analysis was performed by SPSS and mainly descriptive- inferential statistics were used. Twenty-five of the medical students were female (56.8%) and 19 were male (43.2%). Twenty-eight of the physician mentors were female (77%) and 8 were male (23%).

Results

Based on students' report, the gap between design and implementation were 14.1% (Table 1).

Of all mentors, 79.7% were scored 17 to 20 from a total of 20 by students for professionalism. Similarly, 75% of mentors were scored in clinical practice and 79.5% in the teaching competence, 17 to 20 from a total of 20 by students (Table 2).

Of all physician mentors, 66.7% were completely interested in working as a general practitioner and 47.2% were completely interested in working as a physician mentor.

The survey showed that only 15/9% of students were completely interested in to work as a general practitioner in Iran after graduation (Table 3)

In term of basic equipment in the health care centers the observations showed several shortcomings (Table 4).

Periodic assessment of the program had been done in 36.1% of health care centers by faculty members of medical school and health deputy of university, but no document was found as an evaluation report.

The findings of the study about achievement of seven educational objectives of the office-based course are given in Table 5. The survey of the mentor physicians and the medical students showed that at the beginning of the first two months of the course, medical students' competencies in any of the areas were not as expected.

At the end of the second two months, self-reported students' competencies had been improved in all areas between 95 to 100 percent. While the survey of mentor physicians showed that the students' competencies had been improved up to 50 to 90% (except medical knowledge).

In response to the question of whether a health center is an appropriate place for office-based education (in terms of sufficient number of patients and diversity of cases), 91.7% of mentor physicians considered the number of patients referred to health centers sufficient for training medical students and

Table 1. Gap between the design and implementation of office-based course in general medical degree program in SBMU

No.	Question	Student
1	Health care center tour was held by the mentor on the first day	79.6%
2	The mentor explained to complete the portfolio at the first day	88.6%
3	Students are familiar with their duties from the first day	93.2%
4	Students informs of daily educational program	84.1%
5	Implementation of daily educational program was in accordance with what has been announced	86.4%
6	Discussion and feedback session holds in accordance with the guideline at the end of the day and after patients' visit	84.1
Implementation in compliance with the design		85.9%
Gap between design and implementation		14.1%

75% of mentor physicians considered diversity of diseases in health center sufficient for training medical students. Census the number of patients in last month were shown 93.7% of health care centers had 15 patients daily per capita and variety of patients were appropriate for a general practice (Table 6).

Table 2. Scores of physician mentors on professionalism, clinical practice and teaching competence by medical students completing office-based course in general medical degree program in SBMU

Mentors' score	<14	14- 16.9	17- 20
Professionalism scores (%)	6.7	13.6	79.7
Clinical practice scores (%)	6.8	18.2	75
Teaching scores (%)	6.9	13.6	79.5

Table 3. Interest of SBMU medical student to work as a general practitioner

Interest level	Number (students)	Percentage
Not at all	17	38.6
Partially	20	45.5
Completely	7	15.9

Of all mentor physicians, 52.8% (19 out of 36 physicians interviewed) had received no compensation and 17 physicians who received compensation declared it's amount is not enough to compensate their educational services.

Table 4. SBMU Health centers' basic facilities and equipment required for Office-based course implementation

Items	Appropriateness (%)
Work and educational environment	81.2
Basic facilities (desk and chair)	34.4
Adult barometer	100
Child barometer	75
otoscope	90.6
Examination bed	93.8
Weighting Scales	84.4
Stethoscope	100
Flashlight	100
Health child booklet	96.9

Table 5. Achievement of Educational objectives based on students' and mentors' report

Learning area		At the beginning of the first two months	At the beginning of the second two months	In the end of forth months
Medical knowledge	Mentor	70.4%	100%	100%
	Student	63.6%	93.5%	100%
History taking	Mentor	63%	90.9%	95.5%
	Student	81.9%	100%	100%
physical examination	Mentor	55.6%	86.4%	95.5%
	Student	81.9%	90%	100%
Decision-making	Mentor	44.4%	50%	100%
	Student	54.5%	93.3%	96.7%
Laboratory Testing and Diagnostic imaging	Mentor	59.3%	81.8%	95.5%
	Student	75%	93.3%	96.6%
Communication skill	Mentor	66.7%	72.7%	100%
	Student	72.7%	100%	100%
patient records	Mentor	55.6%	68.2%	81.8%
	Student	68.1%	93.4%	100%
reporting to mentor	Mentor	74%	90.9%	95.5%
	Student	72.7%	86.7%	100%
Patient Education	Mentor	44.4%	68.2%	90.9%
	Student	68.2%	93.4%	100%
self-learning management	Mentor	74.1%	83.6%	95.5%
	Student	-	-	-
Commitment	Mentor	67.7%	90.9%	95.5%
	Student	-	-	-

Table 6. Variety and number of cases in 32 health centers in last month (October 2014)

Diseases or problems	per office/day	Max per office/ month
Common cold (adult)	3.9	400
Common cold (child)	2.1	200
Diarrhea	0.5	50
Allergy	1.3	150
Revised drug	1.6	200
Psychological problems	0.5	80
Neuromuscular disorders	0.8	40
Chronic disease (hypertension and diabetes)	2.9	300
Pharyngitis	1.1	150
Skin and hair and pédiculoses	0.3	30
Total	**15 per office/day**	
Health examination	2.1	225
Mother and child visit	1.8	300
Health certificate examination	7.1	500
Total	**11 per office/day**	
Occupational Medicine (only 5 centers)	8.2	140
Marriage counseling by the mentor physician(only in one center)	3.7	176

Discussion

The gap between design and implementation of the course from the perspective of students is at least 14.1% and we can suppose it would be more if the experts evaluate the gap. Lack of enough motivation and various common obstacles of clinical education have been identified by Darasa et al. including, limited training time, lack of adequate financial support, lack of access to an appropriate training environment (15).

Revision of the program according to health centers' conditions, including changing the discussion and feedback program for the morning (before a patient visit) and faculty development programs are suggested for the improvement.

Providing an appropriate and timely feedback was one of the concerns in the evaluation of Hewson educational programs at UCLA (3) and our study also showed that evaluation system was in appropriate and should be the focus of improvement more rigorously. Michael Brusai has emphasized effective evaluation and feedback to students' office-based education for improving clinical and practical function of medical graduates (3).

Periodic evaluation process and sending the results to health centers for recognizing weaknesses and strengths, while acknowledging the outstanding activities, can create proper incentives for the staff this practice will inform health centers of their weaknesses and strengths, so provide the possibility to solve the problems in a proper time.

The average of clinical competencies of the physician mentors in comparison with educational and professional competencies showed the clinical competencies needed more attention. Perhaps this concern led the managers of office based course to register the mentors for Master of family physician course. Distance education of Master of family physician considered for scientific promotion of the mentors and also continuous medial education with focus on professional and educational competencies scheduled weekly by the Deputy of health in SBMU.

Levy et al. showed the community-based preceptors' financial compensation as significant financial support and recognition of their valuable contributions and support (16) which increased the quality of education (17).

Educational financial protocol seemed necessary for the mentors' motivation to participate actively in training the students which has been considered by deputy of health as an educational compensation since the end of the evaluation.

Providing basic facilities of general practice are essential for proper care delivery and training and the health deputy rectified the shortages based on the evaluation report.

Fulkerson and Wang-cheng study showed that the number of patients referred to offices affected educational effectiveness and efficiency (17).

Of all the health centers, 93.7% had 15 patients daily per capita with desirable case mix. Three out of 32 centers did not meet appropriate case count for teaching the course and were replaced with centers where the case mix and case count were sufficient. But about 35% to 55% of physician mentors who were not interested in practicing as a GP or educational mentor are notable.

Also less than 16% of the students were interested to work as a GP which must be considered as an important factor for students' dissatisfaction with the course.

At the beginning of the course, the highest distant to the desired objective has been reported in the area of "clinical decision" (50%) by both students and the mentors while the first area which reached its desired level was "clinical Knowledge". This study showed that passing a 4-month office-based internship course is necessary to gain essential experiences in outpatient practice and placing in their future career.

Darasa's study about quality of education in outpatient setting has shown that training the mentors' teacher-student communication skills, training students' skills of patients' care and clinical reasoning is necessary in outpatient care (18).

Conclusion

It is suggested to prioritize evaluating the Lack of willingness to cooperate for completing the questionnaires and not believing in effectiveness of the evaluation practices students were the limitations of the course evaluation.

Continuous evaluation and recording in a specific database for any center can establish a good monitoring system and provide better judgment of the course in each health care center.

For a more objective measure of students' competence assessing students' performance by standard performance assessment test (ex. OSCE) before and after the course will show real achievement of the objectives.

Conflict of Interest

The authors declare that they have no competing interests.

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