Original article

Implementation of Serial Workshop by Students Educational Need: Trend to Accountability in Medical Education

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Abstract

Introduction: The aim of this study was to assess professors' and students' educational needs and implementation of serial workshops and then evaluate the effect of these educational workshops on the knowledge and practice of medical students. ***Method:*** Students' educational needs and the clinical professors'opinion were used tocomplete the needs assessment process.120 Medical students participated in serial workshops. This program was applied to develop educational accountability program. In each workshop, students' knowledge was evaluated by valid and reliable multiple-choice questions before andafterthe course. In some workshops, their performance was measured by the OSCE test.Descriptive analysisandpaired t- test were used to evaluate difference in students' mean score. ***Finding:*** Results of before and after series of workshops in various areas revealed that workshop programs had a significant impact on the promotion of students' knowledge (The mean score of students before and after workshops). Then,the evaluation of theirperformance through the OSCEtest was significant($P < 0.05$). Furthermore, students' evaluation on workshops demonstrated that almost all of them were satisfied with the proportion of the content of the workshops, with the theme of the announced program, with the quantity of presented material in the workshop, withthe appropriateness of the content to future employment needs and the ability to create order in the meetings.According to professors' opinion, number of errors in prescription, errors in radiography request and malpractice in resuscitation were decreased and students' performance in clinical wards was approved. ***Conclusion:*** The results showed that training through workshops leads to increase the level of knowledge, function and satisfaction in the medical students. It is recommended that this method be used to improve the professional abilities of students based on educational needs. ***Application / Improvements:*** Looking ahead, we should consider strategies for leading changes in education and training. Purposeful teaching is the best way to develop accountability in medical education

Keywords: workshops; students; needs assessment; Knowledge; Performance; Educational accountability

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Introduction:

Annually, billions of dollars are allocated to continue activities in medical education sector[1 -2]. In many countries it has been shown that continuous medical education is performed under the supervision of organizations such as: professional health, health system and some other stimuli[3]. Students' learning begins with a real problem or a mystery through which the educator tries to find the problem and work out an appropriate solution for it[3]. This is one

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of the innovative issues and approaches in medical education[4]. There are several methods in medical education. The traditional method of teaching has several advantages such as investing less time for teachers and for students as well. However, one of its most fundamental pitfalls is the lack of necessary time to analyze the material as well as its superficiality[5]. On the other hand, new educational strategies and methods demand more time and practice [6]. One of the most common continuous medical education activitiesis to hold training sessions[1,7]. Training sessions include courses and workshops in different forms. The nature of training sessions are dramatically different due to several factors including: the content, number of participants, the degree and type of interaction and the target group [8]. Educational workshop is a teaching method that concentrates on the mutual relationship between students and teachers in real situations. In this teaching method, students have enough time to think, analyze and use their knowledge to deal with the existing educational problems. Looking ahead, we should consider strategies for leading changes and development of knowledge and practice in students as a health professional[9-10].

The future of medical education holds major trends in this field include globalization, rapid technology developments, and the need for assured quality and accountability. Therefore medical school graduates across the country should have the skills necessary to prevent and diagnose diseases and treat patients with mental and physical diseases[11].

Because medical students are in direct contact with the health of patients, it is very important to investigate the factors affecting their learning[12]. More attention should be attracted to professors' strategiesthat are one of the most important factors in learning. It has been observed that these professors, in fact, lack the necessary innovations in medical education which will cause that future physicians' needs are not safeguarded properly and they will encounter with serious problems at the time of offering service to patients [13]. Also, some evidence suggests that no attention is paid to developing training programs in Iran. And existing standards, when compared to countries such as America and some European countries like the Netherlands, will lead to dissatisfaction.While the process of medical education through student-centered programs based on need, system-based curriculum, takes steps to integrate pre-clinical courses. Iranian medical students still suffer from the lack of educational programs that are designed on the basis of their qualifications.Such an approach to curriculum has also been reported by some Asian countries [13]. Most empowerment programs for students are done theoretically or in-the-field. But, using workshops with respect to the simulation of the actual situation in order to setthe stage for students' practice and perseverance and their preparation them to meet the needs of the community is at its minimum and either training needs have remained unknown orneed-based compensation plans have not been designed for it. As a result, needs assessment about effective strategies to improve knowledge and practice on the basis of community needs and students' professional future needs is of high importance. Consequently, the aim of the present study was to explore the effect of these educational workshops on the knowledge and practice of medical students of Jahrom University of Medical Sciences.

Material and Methods:

Comprehensive analysis of clinical students' performance,assessing students' knowledge deficit , Students' educational need and the clinical professors' opinion were used to complete the needs assessment process. Totally120 medical students participated in serial workshops in different subjects .Some workshop were applied to Clerkship and others were arranged for Internship . This program was applied to develop educational accountability in clinical wards. In each workshop, students' knowledge was evaluated by valid and reliable multiple-choice questions .This questions standardize by taxonomy, difficulty and differentiation factors. All contents were designed and developed by students'educational needs and it was related to students' knowledge and performance deficit. Clinical pharmacology workshop wascompleted by pharmacy model as a simulation in education and training . Students' knowledge was evaluated in two stages before and after and their performance was evaluated by the OSCE test. Descriptive analysis as a mean and standard deviation and analytic statistics as paired t- test were used to evaluation of difference in students mean score, pretestand post-test. Workshop efficacy was completed by a survey questionnaire by students at the end of workshops .

Results: Educational need assessment criteria from students' and teachers ' opinion were showed in(Table 1-3).(Table 1 to 3 cite here)

The results of measuring the performance of students in the cardiopulmonary resuscitation workshop showed a significant difference in before and after training . ETT skills increased after workshop but ,it wasn't significant .(Table 4 cite here).

The results of measuring the students' knowledge in

clinical pharmacology workshopshowed a significant difference in before and after training. This workshop was arranged for intern students. (Table 5 cite here). Furthermore, the results of the workshop on how to request X- Ray, showed a significant difference before and after intervention (Table 6 cite here).

The results of the orthopedic emergency workshop , showed a significant difference before and after intervention (Table 7 cite here).

Evaluating workshops by the student showed that most of them were satisfied with the proportion of the content of the workshops, with the quantity of presented content in the workshop, with the appropriateness of the content to future professional needs and the ability to create order in the meetings. 33 students completed questionnaire and others did not complete all items and were excluded from the study. .The level of students' satisfaction was showed in table 8 (Table 8 Cite here)

Discussion:

Now most traditional teaching methods lack the necessary efficacy. The reason is that they are mostly theory-based and do not care about performance. The results of this study showed significant differences in medical students' knowledge and practice before and after workshops based on educational needs , and the majority of students were satisfied with the serial workshops. These findings were consistent with the results of other studies. Dogra and his colleagues took benefit of a blended learning approachin their study that included video, PowerPoint presentations and workshopto increase knowledge and practical skills of interns for the control and prevention of nosocomial infections, this results showed thatthe post-test scores were significantly higher than pre-test scores. In the end, the students believed that such educational programs had numerous positive effects onimproving their knowledge and skills [14]. In a research done by Rezaei and Nabaei to investigate the effect of educational workshops on the students' self-learning skill, the results showed that the most important problem in their study was related to the amount of content and concepts (75% students), 92% of them stated that educating self-learning skill can increase motivation of themin their learning [15]. The study of Shaista , etal after cardiopulmonary resuscitation workshop for MBBS 1st year students of the workshop and examining the impacts of these workshops on them, the results of pre-test and post-test showed significant progress in the knowledge of the students. Moreover, these workshops enhanced the students' performance of cardiopulmonary resuscitation on mannequins. All students participating in the workshops were successful in attaining cardiopulmonary resuscitation skills [16]. Other studies showed that the students' knowledge and practice are reinforced in various fields of knowledge, attitude, performance and skill and in the field of clinical decision in educational workshops.[20-17]. According to the research carried out by Yaset and colleagues, the effect of educational workshop on the information of decision-making based on evidence andknowledgeand on skills and behavior of the students indicated that these features increases rapidly [21].These results confirmed our results about effects of workshop on students' knowledge and performance.

The effect of educating cardiopulmonary resuscitation on the knowledge and practice of the students through the OSCE test has also been approved in many cases (26-22). As it is obvious, the results of these studies are consistent with the results of the present study. It perhaps results from the fact that educational workshop method, according to its inherent characteristics, stimulates the individual to learn the content and at the same time the student, in accompaniment with the teacher, to think about the subject matter. In fact, in this way, students are situated in a simulated environment and hence the confidence and motivation to learn rise in the students.The results of the study of Al-Najjar et al. stated that most of the participants had considerable satisfaction with the workshops and acknowledged that problem-based learning and educational needs can increase their findings[20]. Parallel to mentioned-above results, students evaluated the proportion of the content of the workshops with the theme of the announced program, the quantity of presented material in the workshop, the appropriateness of the content to job requirements and the ability to create order in the meetings as to be good or very good.

Conclusion:

The results showed that training through workshops leads to increase the level of knowledge, function and satisfaction in the medical students. It is recommended that this strategies be used to improve the professional abilities of students based on educational needs. Attention to accountability in educational program may increase students' professional skills and Students will prepare for dealing with critical situations in clinical wards.

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Table 1: items used in the needs assessment of students

1) Introductory Workshops with the hospital, the people in charge at the hospital and Medical Records
2) Introductory Workshop with Imaging (MRI-CT Scan X Ray)
3) CPR workshop
4) Important par-clinical workshop (VIA-CBC-Chest X-ray ECG)
5) Workshop of different injections and suturing
6) Workshop of early encounter with some emergency (coma, burns, fractures, poisoning, ...)
7) Complementary workshop of history-making
8) Complementary Workshop of Physical Examination
9) PrescriptionWorkshop
10) Workshop of interpreting laboratory tests
If you consider any other workshops that are not on this list, please write 1. 2. 3. …

Table (2): items used in the needs assessment of students

1)would you like to participate in this workshops?
2)Do you want intensive workshops to be held?
3)Do you like workshops to be held in the course of 2 months and does not take up many hours a week?
If you were to choose three out of 10 cases mentioned workshop, write the number of these 3 cases. First choice: Number ..... Second choice: Third choice ..... Number: Number ..... .

Table (3): items used in the needs assessment of students

1) Do you think it is better that these workshops be held in basic sciences courses?
2) Do you think it is better that these workshops be held in clinical courses?
3) Do you think it is better that the choices are always optional?
4) Do you think it is better that this program enters curriculum and is compulsory?
5) Do these workshops lead to an increase in your motivation and confidence to enter the clinical course?
6) Do these workshops pave the path for more purposeful learning by bringing students closer to the concepts of being physicians prior to clinical course?

Table (4): OSCE skill test results before and after cardiopulmonary resuscitation workshop

N=75

Skill	Stage	Mean	SD	T	P
ETT skills Maximum score :4	Before After	2.76 2.77	0.43 0.41	0.83	0.67
Airway management Maximum score :3	Before	0.81 2.90	0.30 0.41	24.9	0.01
Dc shock Maximum score :4	After	2.80		39.8	0.004
Foreign Body management Maximum score :4	Before After	2.84 2.94	15.69	15.6	0.04
Cardiac massage Maximum score :5	Before After	2.79 2.89	0.31 0.47	19.60	0.03

T from paired t- test

Table (5): The results of clinical pharmacology workshop before and after the intervention

N= 64

Test position	*Number*	*Mean**	*SD*	*T*	*P*
Before	64	6.45	1.57	22.28	0.0001
After	53	9.56	0.72		

T from paired t- test

*Maximum score from 15

Table (6): the average score of students' knowledge of how to obtain X-rays

N=120

Stage	*Mean**	*SD*	*T*	*P*
Before	6.68	1.64	16.15	0.0001
After	10.74	0.44		

T from paired t- test

*Maximum score from 15

Table (7): The results of evaluating students on orthopedic emergency workshop before and after the workshop in Internship

Stage	*Number*	*Mean**	*SD*	*T*	*P*
Before	46	20.08	1.24	8.78	0.0001
After	46	23.45	1.96		

T from paired t- test

*Maximum score from 30

Table (8): The average of each of assessment items in the workshops

Items	Very good	Good	Average	Weak	Very weak
the proportion of the content of the workshops with the theme of the announced program	30(90.9)	3(9.1)	------	------	------
Program quality in terms of presenting new scientific topics	22(66.7)	10(30.3)	1(3)	------	------
the quantity of presented material in the workshop	21(63.6)	12(36.4)	------	------	------
the appropriateness of the content to your job requirements	27(81.8)	6(18.2)6	------	------	------
Your overall feeling about the lesson	24(72.7)	8(24.1)	------	1(3)	------
Your satisfaction with holding time	10(20.3)	7(21.2)	14(42.4)	2(6.1)	------
Fitness of workshop Time with workshop content	12(36.4)	15(45.5)	4(12.1)	2(6.1)	------
The applicability of the material presented in the workshop	------	27(84.4)	3(9.4)	2(6.2)	------
Your satisfaction of venue	25(75.8)	6(18.2)	1(3)	1(3)	------
Offered audiovisual services	19(57.6)	10(30.2)	4(12.1)		------
The quality of light in the hall	------	22(66.7)	10(30.3)	1(3)	------
Management ability in maintaining order at meetings	30(90.9)	3(9.1)	------	------	------
Your satisfaction from the use of learning assist tools	------	21(63.6)	11(33.3)	1(3)	------
Presenting all the content on schedule	25(75.8)	7(21.2)	3(9.1)	1(3)	------
Professor's command of the contents and classroom management style and the ability to attract participants	------	33(100)	------	------	------
Your overview on the professor	------	33(100)	------	------	------

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