
THE ROLE OF SHORT INTENSIVE TASK BASED TRAINING COURSE IN IMPROVING EMERGENCY MEDICINE PERFORMANCE AMONG INTERNS IN DUHOK, KURDISTAN REGION, IRAQ

ABDULLAH J. RAJAB, MBChB, MSc (Community Medicine)*
SAMIM A. AL-DABBAGH, MBChB, DTM&H, D. Phil (Oxford)**

Submitted 10 Mar 2011; accepted 28 Apr 2011

ABSTRACT

Background and objectives Medical education has witnessed a dramatic change in the way information is delivered to equip students with essential knowledge and skills. In Iraq, emergency medicine has been recognized as a discipline that needs improvement. Task based learning has been shown to be associated with improved competency of health care professionals in performing tasks they face in real life. The aim of the study is to evaluate the role of task based training module program in improving emergency medicine related procedural skills of newly graduated interns.

Methods A quasi-experimental study design was utilized. The study was conducted in June and July 2010. A sample of newly graduated intern from Duhok College of Medicine in the academic year 2008/09 was taken and was divided into 2 groups: intervention and control. Inclusion criterion for being in the intervention group was that interns who had never worked in emergency units/departments in any hospital. Nine essential emergency medicine procedures were selected to be included in the training module. Pre and post assessment of interns in regards to practical skill performance using Objective Structured Clinical Examination tool was done. Mannequins were used for both training and assessment.

Results Low rates of practical skill performance were detected among both control and intervention groups prior to the implementation of the training module (43.3% vs 33.3). After implementation the reverse was noticed. Relevant rates were 43.3% versus 88.6% ($p < 0.001$). Both gender and final graduation mark were not found to have a significant effect on practical skill performance. Overall, participants had a good satisfaction towards the adoption of task based training module approach in learning emergency medicine procedural skills.

Conclusion Task based training as a learning method is found to be effective in teaching emergency medicine procedural skills that are needed to have competent interns in performing their tasks. Such an approach can be adopted both for training undergraduate students and postgraduate doctors to improve their practical skills.

Duhok Med J 2011;5(1):1-14.

Key words: Task based, Emergency medicine, Training course, Interns

The experience in developed countries suggests that the modified traditional curricula have not succeeded in improving the quality of medical care available to the public. In the developing countries, where traditional methods of medical teaching have simply been copied regardless of the local circumstances, the results have been

catastrophic.¹ Nevertheless, the past several decades has brought about dramatic changes in medical education resulting from the introduction of new educational strategies into the educational process.² Novel concepts have prevailed in medical schools like problem based learning (PBL), integrated curriculum, and

* Director, Department of Continuing Medical Education, General Health Directorate, Duhok.

** Professor and Chairman of Department of Family and Community Medicine, School of Medicine, Faculty of Medical Sciences, Duhok University.

Correspondence author: Abdullah J. Rajab. Email: abdrekani@duhokhealth.org. Telephone: 009647504571423

task based learning (TBL). Studies have shown that in TBL, students can perform tasks which health care professionals are faced with in real life and it was found that it is an effective and efficient strategy for delivering relevant knowledge of the work in health care centers and hospitals.^{3,4} It has been found that in most of the medical schools it is possible for a student to qualify as a doctor without even performing practical skills as intravenous cannulation, and then learn it during the internship.⁵ Educational research indicates that conventional format of teaching medical students (lecture-based learning) is frequently unstructured, the acquisition of skills is left largely to chance and is subject to little quality control, students are inadequately monitored, and feedback is seldom given. Students passively absorb information rather than actively acquire knowledge. Also, the conventional teaching method separates the first few years of basic science teaching from the clerkships in the clinical years of study.⁶

Recently, the Institute for International Medical Education in the USA has articulated the Global Minimum Essential Requirements expected in the teaching of all physicians regardless of the country. These standards were set to overcome the complexity and variability of rules applied by different countries.⁷

Changing health needs in countries experiencing economic and social growth are creating a greater demand for all types of emergency medical services. Factors contributing to this demand include globalization and rapid urbanization with resultant changes in demographic and disease patterns. Due to these factors, many countries recognize the necessity and value of establishing quality emergency health care systems and are striving to create effective emergency medical programs.⁸ The incorporation of a basic level of emergency medical care into health care systems could have a significant positive impact on the well-being of populations. It would respond to

the self-perceived needs of populations and decrease the long-term human and economic costs of illness and injury.⁹ Injuries constitute one the top ten cause of death in the world¹⁰ and in Kurdistan Region.¹¹ Trauma is considered one of the top causes of morbidity and mortality in Iraq. In Duhok governorate, 74.02% of trauma cases aged 45 or less. Managing trauma cases partly require health care professionals that are competent in skills essential for performing emergency medicine related procedures.

Emergency medicine was recognized by Iraqi Ministry of Health as one of the important fields that need improvement.¹² Despite that, the undergraduate curriculum has failed to fully meet the needs of emergency departments in the country, including Kurdistan Region. Also, medical doctors in the emergency department complain that the new graduates lack the practical skills necessary for performing emergency medicine procedures. Furthermore, the emergency medicine is not yet formally recognized as a medical speciality¹³ and is mostly practiced by inadequately trained clinicians in poorly equipped emergency departments.¹⁴ It should no longer be assumed that the medical house officers are competent in procedural skills. Deliberate methods must be developed and administered to ensure adequate procedural skill educational opportunities with the ultimate goal of improving patient outcomes. Accordingly, medical educators need to consider what graduating medical students should know about the management of acutely sick and injured patients as well as how to best achieve the educational objectives of the medical school.¹⁵

Because of the potential widespread use of task based learning as a new teaching strategy, it was decided to conduct a study that aimed at assessing the emergency medicine related procedure skill performance of newly graduated junior house officers after being involved in Task Based Training Module (TBTM).

METHODS

This study utilized a quasi-experimental design. It was performed during the months of June and July 2010. Azadi Teaching Hospital in Duhok governorate was chosen to be the place for conducting the training program. It is the main tertiary care hospital with availability of enough teaching facilities, equipment, and convenience of the place to the trainers and trainees.

Participants comprised of newly graduated interns from the Duhok College of Medicine (DCM) for the year 2008-2009. They were divided into two groups: intervention and control. The intervention group included 21 out of 24 eligible interns who had never worked in emergency departments in any hospital. The other 3 did not respond because of improper notification. The 21 participants in the control group were randomly selected out of 29 interns who had already completed their internship in one of the emergency units in Duhok governorate.

Nine procedures were chosen based on the availability of mannequins and the importance of the procedure, including cardiopulmonary resuscitation and cardiac defibrillation, basics of wound management, male urethral catheterization, triage in mass casualty, basics of airway management, endotracheal intubation, naso-gastric intubation, arterial blood gas sampling and puncture, and intravenous cannulation. For all the stations, mannequins (plastic models) were used except for triage in mass casualty in which clinical scenarios, videotapes, and case management protocols were utilized for the assessment. Moreover, lecture handouts, flow charts, and materials on frequently asked questions about the relevant skills and systematic performance checklists which needed to be performed at the stations were given to the trainees. Also, participants were shown professional videotapes for EM procedures. Details on the selected procedures were adopted from

accredited sources.¹⁶⁻³¹ Each procedure in the training course was facilitated by a senior doctor working in EM departments. In addition to being specialized in their fields, trainers underwent a three-day intensive training program on Basic Assessment and Support in Intensive Care by a visiting team composed of distinguished anesthesiologists and intensivists from Australia, Hong Kong, New Zealand and South Africa.

Procedural skill performance was measured using Objective Structure Clinical Examination (OSCE). Checklists were developed to be used by the trainers to assess trainees in the nine clinical stations in order to focus on the competence to be evaluated. The scores at each station were calculated as the percentage of items for which trainers gave the students full credit. As an objective assessment, a five-point quality type Likert's rating scale was used, ranging from 1 to 5 (1 = not done, 2 = poor, 3 = equivocal, 4 = good, 5 = excellent). Meanwhile, the trainers also gave marks on each of the subtasks in the procedure. These marks were summed up to form the total mark gained by the participants per task. These marks were allocated to the subtasks by the assessor himself according to the importance or the relevance of a certain subtask compared to the others. For example, a certain subtask may worth 20 marks out of 100 while another subtask within the same procedure may worth only 10 marks. Also, the trainers assigned the trainees a global rating (subjective assessment) of overall performance of the participants at each station. The criterion-referenced grading system was used. This system does not compare students to each other in their performance on an assessment. A criterion or "pass" level was established, and anyone who scores at or above that level passes and anyone who scores below, he/she fails. This was accomplished by using the traditional percent correct scale (0-100) where 100 is perfect performance. Competent

performance on the OSCE was operationally defined as 60%. This standard applied to individual tasks as well as to the overall assessment process. The attitude of the participants towards the new task-based approach in EM learning was assessed using a five-point frequency type Likert's scale (5= always, 4= very frequently, 3= occasionally, 2= rarely, and 1= very rarely). The parameters against which the attitude was assessed were attitude to learning, response to advice, initiatives for learning and readiness to share.³²

Feedback regarding trainee's perceptions on the task-based training approach, training module contents, and OSCE as a training and assessment tool was assessed via a questionnaire form using a five-point agreement type Likert's scale.

Baseline assessment of procedural skill performance was assessed prior to implementation of TBTM. After the preliminary assessment, only the intervention group participated in the training program. After implementation of the program, the skill performance of the intervention group in regard to emergency procedure skills was compared to their performance before TBTM implementation. Skill performance was reassessed between the intervention and control groups after TBTM implementation.

The statistical package for social sciences (SPSS) version 17 was used to enter the data and perform analysis.³³ Data were summarized using mean and standard deviation for continuous variables, and counting and percentages for categorical variables. An independent samples t test was used to assess statistical differences in the mean practical skill performance between the intervention and control groups. Paired t test was used to assess the mean differences in practical skill performance of the intervention group after participation in the training course. Regression analysis was used to determine

role of college graduation score and gender in predicting change in the skill performance score among participants in the intervention group.

RESULTS

Variation in the mean total scores for individual tasks between control and intervention groups before and after implementation of TBTM is shown in table 1. The overall mean practical skill performance were low among both groups before TBTM implementation. However, the rate in the control groups was significantly higher than that in the intervention group (43.3% versus 33.3%). The table also demonstrates that the posttest-intervention group had a statistically significant higher overall mean practical skill performance compared to the control group for all the nine EM procedure tasks (88.6% vs. 43.3%, $p < 0.001$).

The intervention group had a statistically significant higher overall mean practical skill performance score for EM procedures after implementation of the TBTM compared to their overall mean score prior to the training course (88.6% vs. 33.3%, $p < 0.001$) (Table 2). Even for the individual task, there was statistically significant difference in the mean practical skill performance score of the intervention group for all the nine EM procedures before and after implementation of TBTM ($p < 0.001$ for each procedure).

The final assessment of participant's attitude towards TBTM showed that posttest-intervention group had a significantly higher mean attitude score compared to the pretest-intervention group for all tested attitude parameters ($p < 0.001$) as shown in table 3. Gender and final college graduation scores had a non significant role in the degree of changes in the practical skills of the intervention group as illustrated in table 4.

As shown in table 5, the opinions of the participants involved in the training

module revealed that the overall acceptance of training module items by the participants was 83.1% which is 23.1% higher than the minimum value of acceptance of 60%. The acceptance values ranged from a minimum of 74.3% for the item (The participants had prior knowledge about the training program) to 95.2% for the item (Overall, would you

rate the training program content as beneficial?). Also, it revealed that the participants recognized the OSCE stations as realistic and representative of the real life practice of interns (95.4%). Also, they expressed their will to generalize the training program for the remaining interns (81.9%).

Table 1. Practical skills assessed per EM-tasks by rating scale (intervention (n=21) vs. control group (n=21)) before and after implementation of TBTM

EM procedure task	Study group	Percent of trainees got a rating scale of					Mean (\pm SD)	P-Value
		1 <20	2 20-39	3 40-59	4 60-79	5 (\geq 80)		
Basics of airway management	Pre intervent.	42.9	33.3	19.0	4.8	0.0	29.1 (17.8)	0.412
	Post interven.	0.0	9.5	33.3	0.0	57.1	80.1 (14.3)	<0.001
	Control	0.0	81.0	19.0	0.0	0.0	32.5 (5.4)	
Arterial blood gas sampling and puncture	Pre intervent.	81.0	9.5	9.5	0.0	0.0	11.9 (14.9)	<0.001
	Post interven.	9.5	14.3	4.8	23.8	47.6	67.0 (28.2)	0.002
	Control	0.0	19.0	81.0	0.0	0.0	44.4 (4.6)	
Triage in mass casualty	Pre intervent.	4.8	4.8	85.7	4.8	0.0	44.7 (7.7)	<0.001
	Post interven.	0.0	0.0	0.0	9.5	90.5	94.4 (8.1)	<0.001
	Control	0.0	0.0	71.4	28.6	0.0	56.1 (6.0)	
Endotracheal intubation	Pre intervent.	66.7	23.8	4.8	4.8	0.0	14.9 (17.6)	<0.001
	Post interven.	0.0	0.0	0.0	28.6	71.4	87.3 (11.4)	<0.001
	Control	0.0	100.0	0.0	0.0	0.0	31.0 (4.0)	
Intravenous cannulation	Pre intervent.	4.8	28.6	66.7	0.0	0.0	40.7 (10.0)	0.451
	Post interven.	0.0	0.0	4.8	4.8	90.5	92.3 (11.8)	<0.001
	Control	0.0	61.9	38.1	0.0	0.0	38.8 (6.0)	
Naso-gastric intubation	Pre intervent.	0.0	4.8	95.2	0.0	0.0	47.5 (6.0)	0.011
	Post interven.	0.0	0.0	0.0	0.0	100.0	100.0 (0.0)	<0.001
	Control	0.0	9.5	66.7	23.8	0.0	54.1 (9.5)	
Cardiopulmonary resuscitation and cardiac defibrillation	Pre intervent.	42.9	52.4	4.8	0.0	0.0	22.6 (9.4)	<0.001
	Post interven.	0.0	0.0	0.0	0.0	100.0	95.3 (4.8)	<0.001
	Control	4.8	57.1	38.1	0.0	0.0	39.1 (9.8)	
Basics of wound management	Pre intervent.	0.0	14.3	76.2	9.5	0.0	47.0 (7.4)	0.042
	Post interven.	0.0	0.0	0.0	19.0	81.0	83.3 (6.2)	<0.001
	Control	0.0	33.3	66.7	0.0	0.0	41.4 (9.7)	
Male urethral catheterization	Pre intervent.	14.3	33.3	38.1	14.3	0.0	41.2 (16.6)	0.006
	Post interven.	0.0	0.0	0.0	0.0	100.0	97.3 (3.3)	<0.001
	Control	0.0	0.0	100.0	0.0	0.0	52.6 (4.6)	
Total score	Pre interven.	0.0	90.5	9.5	0.0	0.0	33.3 (5.9)	<0.001
	Post interven.	0.0	0.0	0.0	0.0	100.0	88.6 (4.5)	<0.001
	Control	0.0	4.8	95.2	0.0	0.0	43.3 (2.3)	

Pre intervent. = pre intervention; *Post intervent.* = post intervention

THE ROLE OF SHORT INTENSIVE TASK BASED TRAINING COURSE

Table 2. Practical skills assessed per EM procedure tasks by rating Scale (Post intervention (n=21) vs. control Group (n=21))

EM procedures (Task)	Study group	Percent of trainees got a rating scale of					Mean (\pm SD)	P-Value
		1 <20	2 20-39	3 40-59	4 60-79	5 (\geq 80)		
Basics of airway management	Post interven.	0.0	9.5	33.3	0.0	57.1	80.1 (14.3)	<0.001
	Control	81.0	19.0	0.0	0.0	0.0	32.5 (5.4)	
Arterial blood gas sampling and puncture	Post interven.	9.5	14.3	4.8	23.8	47.6	67.0 (28.2)	0.002
	Control	0.0	19.0	81.0	0.0	0.0	44.4 (4.6)	
Triage in mass Casualty	Post interven.	0.0	0.0	0.0	9.5	90.5	94.4 (8.1)	<0.001
	Control	0.0	0.0	71.4	28.6	0.0	56.1 (6.0)	
Endotracheal intubation	Post interven.	0.0	0.0	0.0	28.6	71.4	87.3 (11.4)	<0.001
	Control	0.0	100.0	0.0	0.0	0.0	31.0 (4.0)	
Intravenous cannulation	Post interven.	0.0	0.0	4.8	4.8	90.5	92.3 (11.8)	<0.001
	Control	0.0	61.9	38.1	0.0	0.0	38.8 (6.0)	
Naso-gastric intubation	Post interven.	0.0	0.0	0.0	0.0	100.0	100.0 (0.0)	<0.001
	Control	0.0	9.5	66.7	23.8	0.0	54.1 (9.5)	
Cardiopulmonary resuscitation and cardiac Defibrillation	Post interven.	0.0	0.0	0.0	0.0	100.0	95.3 (4.8)	<0.001
	Control	4.8	57.1	38.1	0.0	0.0	39.1 (9.8)	
Basics of wound management	Post interven.	0.0	0.0	0.0%	19.0	81.0	83.3 (6.2)	<0.001
	Control	0.0	33.3	66.7	0.0	0.0	41.4 (9.7)	
Male urethral catheterization	Post interven.	0.0	0.0	0.0	0.0	100.0	97.3 (3.3)	<0.001
	Control	0.0	0.0	100.0	0.0	0.0	52.6 (4.6)	
Overall practical skills Score	Post interven.	0.0	0.0	0.0	0.0	100.0	88.6 (4.5)	<0.001
	Control	0.0	4.8	95.2	0.0	0.0	43.3 (2.3)	

Post intervent. = post intervention

Table 3. Pre-intervention vs post-intervention assessments of participants' attitude towards the task-based EM training (Intervention group)

Attitude parameters	Pre-intervention assessment Mean (SD)	Post-intervention assessment Mean (SD)	Mean difference	95% C.I.	P value
Attitude to learning	24.2 (4.9)	64.5 (13.8)	40.3	33.8- 46.7	<0.001
Response to advice	44.2 (8.3)	72.9 (14.9)	28.7	21.1- 36.2	<0.001
Initiative	13.9 (4.1)	62.8 (12.7)	48.9	43.06- 54.7	<0.001
Sharing Ideas	33.2 (10.1)	69.8 (15.9)	36.6	28.2- 44.9	<0.001
Total	29 (4.5)	67.5 (7.1)	38.5	34.7- 42.2	<0.001

Table 4. Regression analysis assessing effects of gender and final graduation mark on the degree of change in practical skills of intervention group

Independent variable	Beta coefficient	Standard error	P value
Gender (female)	-3.278	3.360	0.342
Final college graduation mark	-0.308	0.274	0.277

Table 5. Participant's feedback on training course and OSCE assessment tool

Evaluation item	Satisfaction rating scale					Satisfaction index
	Totally disagree	Disagree	Equivocal	Agree	Totally agree	
The participants had prior knowledge about the training program	2	3	2	6	8	74.3
There was a coherent progression of the training program from beginning to end?	1	2	1	7	10	81.9
Quality of training program outlines was good	2	2	2	8	7	75.2
Statement of program objectives was clear	1	2	2	6	10	81
The training program met my expectations	1	1	2	7	10	82.9
Organizations of training program activities was appropriate	1	1	1	7	11	84.8
Helpfulness of teaching staff was good	1	2	0	6	12	84.8
Availability of training materials was good	0	0	1	8	12	90.5
The training materials were useful	0	0	2	9	10	87.6
Clarity of presentations was good	1	1	1	8	10	83.8
The schedule of the OSCE was appropriate	1	0	1	8	11	86.7
OSCE is an appropriate way to assess knowledge and practical skills in emergency medicine	2	3	1	5	10	77.1
OSCE training in EM to be generalized for remaining interns	1	1	1	10	8	81.9
OSCE stations were realistic and representative of a real-life practice events	1	2	3	5	10	95.4
Overall, would you rate the training program content as beneficial?	0	0	0	5	16	95.2
Overall, would you rate the organization of the training program as well?	0	2	1	6	12	86.7
Overall, would you rate the quality of the teaching as good?	0	0	1	6	14	92.4

Overall satisfaction index 83.1%

DISCUSSION

In this study, we used a quasi experimental study design as it lacks random assignment. This method is the best alternative to randomized trials³⁴ because it was not feasible to randomly assign newly graduated interns into intervention group and control group because their internship program was set by Duhok Health Authority before the start of TBTM. Mannequins offer realistic clinical challenges that enable assessment of a

variety of skills that are inaccessible to traditional methods like oral assessment methods.³⁵ Also, there are ethical concerns using real patients despite that their use will maximize validity.³⁶ Because we were the first in using simulated models in training programs in the governorate to assess competency of medical doctors in EM, no pre-trained simulated patients were available in DCM. A similar approach was used in a study in Iran.³⁷ OSCE tool has been identified as a valid and reliable method of assessing clinical

competency³⁸ and is found to be particularly appropriate to emergency medicine.³⁹ Considering that this was the first time of OSCE use in the assessment of an entire cohort of interns, the decision to set 60% as a passing score for each station was arbitrary.⁴⁰ Setting standards (defendable passing scores and grades) in an assessment method is a matter of judgement but requires the use of systematic methods. Qualified and unbiased judges were selected to come up with defensible passing scores.^{38,41} Only nine procedures were selected for training because of logistic limitations, their importance in the real life.^{42,43}

Pre intervention assessment findings indicated that there was a statistical significant difference in the mean overall practical skill performance score between the control and intervention groups (43.3 vs 33.3, $p < 0.001$). On further analysis at the level of individual tasks, the control showed a higher practical performance score in six out of the nine EM procedures (Arterial blood gas sampling, triage in mass casualty, endotracheal intubation, nasogastric intubation, cardiopulmonary resuscitation and male urethral catheterization). The problem of having interns with deficiency in basic clinical skills and performing practical procedures has been addressed in other studies.^{44,45} Lack of skills in performing certain procedures but not the others were reported in other studies.^{46,47}

As finding shows, the control group might had a higher chance of performing some of the procedures included in the study compared to the intervention group who had not yet have the chance to do the same procedure. We noticed that for the procedures that are more likely to be performed in emergency departments, the control group had much higher mean practical performance score compared to that in the intervention group. In a study, doctors were asked to grade their subjective confidence at performing listed practical skills before and after working in

accident and emergency (A&E). There was a significant improvement in confidence for the practical skills after working in A&E.⁴⁸

After the implementation of TBTM, the intervention group had gotten significant improvement in their clinical skills (both overall and for all individual tasks). And for some tasks, the differences in the mean scores for the intervention group were double or triple of that of the control group. A study that was conducted in the Medical City Teaching Hospital in Baghdad during the period January – September 2006 about training 92 doctors on cardiac and trauma life support. The study found that no one gained the pass mark in the Advanced Cardiac Life Support, Basic Trauma Life Support and Advanced Trauma Life Support questions before giving the lectures. After the lectures, all participants succeeded in gaining the pass mark for the same questions.⁴⁹ Other studies have also shown improvement in the procedural skill performance of doctors after being exposed to training.^{50,51} Regression analysis showed that both gender and final college graduation mark had a non significant role in the degree of improvement in the practical skills among the intervention group. This further may ascertain that the improvement could be solely attributed to the effect of the task based training approach in medical education. Our findings were unlike a study that evaluated competency of medical interns in Shiraz that used OSCE for assessment which showed that in spite of the fact that these students' performance in medical knowledge and clinical judgment were favourable, they functioned incompetently in clinical skills. Moreover, the results of their finding examination correlated with the participants final grade point averages. Namely, the top students in OSCE were also the top students in their medical education. Male interns performed better than females in this examination.⁵²

In general, task based training of

medical doctors in EM procedure using simulation like mannequin was found to be successful in improving interns' competency in performing essential EM procedures. Similar findings have been found in another study.⁵³ A study performed by Al-Dabbagh and Al-Tae'e to evaluate a task-based community oriented teaching model of family medicine found out that the task-based teaching model in family medicine significantly improved performance skills of the study participants. Also, the participants were found eager to learn a greater variety of skills and to examine a large number of cases if readily accessible.⁵⁴

In regard to attitude of the intervention group towards the task based training approach as an innovative style of learning process in DCM, participants had a better impression on this approach after its implementation. The significant positive shift in the participants' attitude towards the task based training approach adopted in the training course may be because this is a new method as we mentioned or the training course was well-organized and addressed the areas that the participants had concerns or weakness. These could further be explained by the finding of a satisfaction score of 83.1% as a feedback from the training course participants about the usefulness of task based training program and also of OSCE. The positive feedback on TBL approach is consistent with other studies.^{55,56} A multimodular concept of training, including such simulator-based techniques, may relieve the widespread shortage in clinical experience, and hence greatly facilitate improvement of quality of care and patient safety.⁵⁷

REFERENCES

1. Lam TP, Lam YY. Medical education reform: the Asian experience. *Acad Med.* 2009;84(9):1313-7.
2. McKimm J. Current trends in undergraduate medical education: program and curriculum design. *Samoa Med J.* 2010;1(2):40-8.
3. Sivalingam N. Teaching and learning of professionalism in medical schools. *Ann Acad Med Singapore.* 2004;33(6):706-10.
4. Ozkan H, Degirmenci B, Musal B, Itil O, Akpinar H, Akalin E, et al. Task-based learning (TBL) in Dokuz Eylul University Medical School, Turkey. *Med Teach.* 2004;26(3):279-80.
5. Tekian A. Have newly graduated physicians mastered essential clinical skills? *Med Educ.* 2002;36(5):406-7.
6. Nandi PL, Chan JN, Chan CP, Chan P, Chan LP. Undergraduate medical education: comparison of problem-based learning and conventional teaching. *Hong Kong Med J.* 2000;6(3):301-6.
7. Al-Moamary MS, Mamede S, Schmidt HG. Innovations in medical internship: benchmarking and application within the King Saud bin Abdulaziz University for Health Sciences. *Educ Health (Abingdon).* 2010;23(1):367.
8. Thomas TL. Developing and implementing emergency medicine programs globally. *Emerg Med Clin North Am.* 2005;23(1):177-97.
9. Razzak JA, Kellermann AL. Emergency medical care in developing countries: is it worthwhile? *Bull World Health Organ.* 2002;80(11):900-5.
10. World Health Organization. World health statistics 2008. Geneva: World Health Organization; 2008.
11. Kurdistan Ministry of Health. Annual review 2009. Erbil, Iraq: Ministry of Health; 2009.
12. Al-Hilfy TKY. Towards quality and accreditation in health professions education in Iraq - accreditation in health professions education. *MEJFK.* 2007;5(4):3-7.
13. Al Sheibani BI, Hadi NR, Hasoon T. Iraq lacks facilities and expertise in emergency medicine. *BMJ.* 2006;333(7573):847.
14. David SS, Vasnaik M, T VR.

- Emergency medicine in India: why are we unable to 'walk the talk'? *Emerg Med Australas.* 2007;19(4):289-95.
15. Wald DA, Lin M, Manthey DE, Rogers RL, Zun LS, Christopher T. Emergency medicine in the medical school curriculum. *Acad Emerg Med.* 2010;17 (Suppl 2):S26-S30.
 16. Barker T, Patel Y. Basic airway management (emergency medicine) [Internet]. 2008 [cited 2009 Dec 14]. Available from: <http://www.proceduresconsult.com/medical-procedures/basic-airway-management-EM-procedure.aspx>
 17. Thomsen TW, Setnik GS. Basics of wound management (emergency medicine) [Internet]. 2008 [cited 2009 Dec 14]. Available from: <http://www.proceduresconsult.com/medical-procedures/basics-of-wound-management-EM-procedure.aspx>
 18. Thomsen TW, Setnik GS, Feller-Kopman D. Arterial blood gas sampling (emergency medicine) [Internet]. 2008 [cited 2009 Dec 14]. Available from: <http://www.proceduresconsult.com/medical-procedures/arterial-blood-gas-sampling-EM-procedure.aspx>
 19. Thomsen TW, Setnik GS, Binder D. Cardiac defibrillation (emergency medicine) [Internet]. 2008 [cited 2009 Dec 14]. Available from: <http://www.proceduresconsult.com/medical-procedures/defibrillation-EM-procedure.aspx>
 20. Ortega R, Sekhar P, Song M, Hansen CJ, Peterson L. Peripheral intravenous cannulation. *N Engl J Med* [Internet]. 2008 [cited 2009 Dec 16]; 359: e26. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMvcm0706789#figure=preview.gif>
 21. Thomsen TW, Setnik GS. Male urethral catheterization. *New Engl J Med* [Internet]. 2006 [cited 2009 Dec 15]; 354: e22. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMvcm054648>
 22. Kabrhel C, Thomsen TW, Setnik GS, Walls RM. Orotracheal intubation. *N Engl J Med* [Internet]. 2007 [cited 2010 Dec 15]; 356: e15. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMvcm063574>
 23. Thomsen TW, Shaffer RW, Setnik GS. Nasogastric intubation. *N Engl J Med* [Internet]. 2006 [cited 2009 Dec 15]; 354: e16. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMvcm050183#figure=preview.gif>
 24. Tegtmeier K, Brady G, Lai S, Hodo R, Braner D. Placement of an arterial line. *N Engl J Med* [Internet]. 2006 [cited 2009 Dec 15]; 354: e13. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMvcm044149#figure=preview.gif>
 25. Thomsen TW, Barclay DA, Setnik GS. Basic laceration repair. *New Engl J Med* [Internet]. 2006 [cited 2009 Dec 16]; 355: e18. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMvcm064238#figure=preview.gif>
 26. Fitch MT, Manthey DE, McGinnis HD, Nicks BA, Pariyadath M. Abscess incision and drainage. *N Engl J Med* [Internet]. 2007 [cited 2009 Dec 16]; 357: e20. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMvcm071319#figure=preview.gif>
 27. Ortega R, Mehio AK, Woo A, Hafez DH. Positive-pressure ventilation with a face mask and a bag-valve device. *N Engl J Med* [Internet]. 2007 [cited 2009 Dec 16]; 357: e4. Available from: <http://www.nejm.org/doi/full/10.1056/NEJMvcm071298#figure=preview.gif>
 28. Ashkenazi I, Kessel B, Khashan T, Haspel J, Oren M, Olsha O, et al. Precision of in-hospital triage in mass-casualty incidents after terror attacks. *Prehosp Disaster Med.* 2006;21(1):20-3.
 29. Garner A, Lee A, Harrison K, Schultz

- CH. Comparative analysis of multiple-casualty incident triage algorithms. *Ann Emerg Med.* 2001;38(5):541-8.
30. Hirshberg A, Holcomb JB, Mattox KL. Hospital trauma care in multiple-casualty incidents: a critical view. *Ann Emerg Med.* 2001;37(6):647-52.
31. Mackway-Jones K, Carley SD, Robson J. Planning for major incidents involving children by implementing a Delphi study. *Arch Dis Child.* 1999;80(5):410-3.
32. Abbatt FR. Teaching for better learning. A guide for teachers of primary health care staff. 2nd ed. Geneva: World Health Organization; 1992.
33. SPSS Statistics 17.0. SPSS software, release 17.0.0. Chicago, IL: SPSS Inc; 2008.
34. Harris AD, McGregor JC, Perencevich EN, Furuno JP, Zhu J, Peterson DE, et al. The use and interpretation of quasi-experimental studies in medical informatics. *J Am Med Inform Assoc.* 2006;13(1):16-23.
35. Norcin JJ, McKinley DW. Assessment methods in medical education. *Teaching and Teacher Education.* 2007;23:239-50.
36. Carraccio C, Englander R. The objective structured clinical examination: a step in the direction of competency-based evaluation. *Arch Pediatr Adolesc Med.* 2000;154(7):736-41.
37. Taghva A, Panaghi L, Rasoulia M, Bolhari J, Zarghami M, Esfahani MN. Evaluation of reliability and validity of the Psychiatry OSCE in Iran. *Acad Psychiatry.* 2010;34(2):154-7.
38. Hijazi M, Downing SM. Objective structured clinical examinations as an assessment method in residency training : practical considerations. *Ann Saudi Med.* 2008;28(3):192-9.
39. Johnson G, Reynard K. Assessment of an objective structured clinical examination (OSCE) for undergraduate students in accident and emergency medicine. *J Accid Emerg. Med* 1994;11(4):223-6.
40. David MH. Association of Medical Education in Europe medical education guide no. 15: problem-based learning a practical guide. *Med Teach.* 1999;21(2):130-40.
41. Guraya SY, Alzobydi AH, Salman S. Objective structured clinical examination: examiners' bias and recommendations to improve its reliability. *Journal of Medicine and Medical Science.* 2010;17(1):269-72.
42. Ahmed R, Naqvi Z, Wolfhagen I. Psychomotor skills for the undergraduate medical curriculum in a developing country--Pakistan. *Educ Health (Abingdon).* 2005;18(1):5-13.
43. Elango S, Jutti RC, Kandasami P, Teng CL, Loh LC, Motilal T. Assessment of basic practical skills in an undergraduate medical curriculum. *leJSME.* 2007;1(1):41-5.
44. Matheson C, Matheson D. How well prepared are medical students for their first year as doctors? The views of consultants and specialist registrars in two teaching hospitals. *Postgrad Med J.* 2009;85(1009):582-9.
45. Eziyi A, Ademuyiwa SO, Eziyi JAE, Salako AA, Aderounmu AOA, Oyedej ASA. Knowledge and experience of medical students with male urethral catheterization. *East and Central African Journal of Surgery.* 2009;14(2):18-24.
46. Premadasa IG, Shehab D, Al-Jarallah KF, Thalib L. Frequency and confidence in performing clinical skills among medical interns in Kuwait. *Med Teach.* 2008;30(3):e60-5.
47. Sanders CW, Edwards JC, Burdenski TK. A survey of basic technical skills of medical students. *Acad Med.* 2004;79(9):873-5.
48. Brazil E, Macnamara AF, O'Connor N, Bodiwala GG. Accident and emergency medicine--still a useful 'apprenticeship'? *Eur J Emerg Med.* 2002;9(3):244-7.

49. Khattab OS. Starting basic and advanced, cardiac and trauma, life support program's will improve the emergency medical service in Iraq. *Middle East Journal of Emergency Medicine* [Internet]. 2007 [cited 2010 Feb 27]; 7(2). Available from: <http://www.hmc.org.qa/mejem/sept2007/edited/os3.htm>
50. Aksay E, Sahin H, Kiyas S, Ersel M. Current status of emergency residency training programs in Turkey: after 14 years of experience. *Eur J Emerg Med*. 2009;16(1):4-10.
51. Promes SB, Chudgar SM, Grochowski CO, Shayne P, Isenhour J, Glickman SW, et al. Gaps in procedural experience and competency in medical school graduates. *Acad Emerg Med*. 2009;16 Suppl 2:S58-62.
52. Mosavi Nsab M, Bazrafkan L. Evaluation of medical intern's competence about ambulatory prevalent diseases. *J Med Educ*. 2003;4(1):23-6.
53. Steadman RH, Coates WC, Huang YM, Matevosian R, Larmon BR, McCullough L, et al. Simulation-based training is superior to problem-based learning for the acquisition of critical assessment and management skills. *Crit Care Med*. 2006;34(1):151-7.
54. Al-Dabbagh SA, Al-Tae WG. Evaluation of a task-based community oriented teaching model in family medicine for undergraduate medical students in Iraq. *BMC Med Educ*. 2005;5:31.
55. Sharifah Sulaiha S A, Nurjahan MI, Lee N. Task-based learning: Student's perception of their skill in participating in small group discussions. *IeJSME*. 2009;3(1):8-12.
56. Ozan S, Karademir S, Gursel Y, Taskiran HC, Musal B. First graduates' perceptions on a problem-based and task-based learning curriculum. *Educ Health (Abingdon)*. 2005;18(2):256-71.
57. Eich C, Russo S, Timmermann A, Nickel EA, Graf BM. New perspectives for simulator-based training in paediatric anaesthesia and emergency medicine. *Anaesthesist*. 2006;55(2):179-84. [Article in German]

پوخته

رولێ خولین فیژیکری بین کورت و چر ل سەر پیشیخستنا کاری نوزدارین نشته جین خولا ل نوزداریا تهنگافیا ل دهوکی-مهريما کوردستانا عراقی

پیشهکی و ئارمانج: یا دیاره کو گهورینین زور بهرجاف ل فیژیکرنا بزیشکی ل سهرانسه ری جیهانی یی هاتینه ریدان. ههروهسا یا دیاره کو نوزداریا تهنگافیا ل عراقی پیئقی پیشیخستنی یه. فیژیکرنا بزیشکی ب شیوازی بجهینانا کارا یا هاتیه نوپاتکرنا کو یا ب هیزه ل دور بلندکرنا ئاستی زانینی و پراکتیکری ل نیک کارمه ندین تهندروستی. ئارمانجا فیژیکرنا ئهوه کو ههلسهنگاندنا پروگرامین فیژیکری ب شیوازی ب جهینانا کارا لدور ب هیژکرنا شیانین زانستی و پراکتیکی ل دهه دهرجویین کوليجا بزیشکی یا دهوکی ل سالا 2009-2010.

ریکین فهکولینی: شیوازی فهوکلیینین (وه ته جریبی) هاته بکار ئینان بو بجهینانا فیژیکرنا. گروبهکی نوزدارین نشته جی و خولا ئهویین کاردکه ن ل نه خوشخانین دهوکی ب مهرجهکی کو هیشتا کار نه کریبت ل نه خوشخانا تهنگافیا و ل پشکین تهنگافیا ل نه خوشخانین دی. نهه کریارین نوزداریا تهنگافیا بین فهه کو بینه زانین هاتنه ژیکرتن وهه پروگرام بو چیکرنا پهرتوکه کا فیژیکری و دا ل خولا مهشکرنا نوزدارین نشته جی و خولا هاتینه دهست نیشانکرنا بو فیژیکرنا. ههروهسا گروبهکی دی ژوان نوزدارین نشته جی و خولا ئهویین کاری خول جهین نافبری ته مامکری هاتینه ژیکرتن وهه کونترول. ئامرازی اوسکی OSCE هاته ژیکرتن بو ههلسهنگاندن و تاقیکرنا شیانین پراکتیکی لدهه نوزدارین نیشه جی و خولا.

ئه نجام: فیژیکرنا دیارکر کو ئاستی ههردو گروپا یی نزم بو بهری خولا مهشکرنا دهست پی بکهت (43.3٪ مو قابل 33.3٪). بهی ئه نجامین بهروفازی دیاربوون بشتی خولا مهشکرنا بدیمای هاتی (88.6٪ مو قابل 33.3٪). ههروهسا دیاربوو کو نه جهندهری پشکدارا و نه نمرا وانا یا دهرجونی ل کوليجا بزیشکی ئهگه رهه هه بوو ل سهر ئه نجامین خولی. بشکدارا شیوازی فیژیکرنا بزیشکی ل دور نوزداریا تهنگافیا ئهوا هاتیه ئه نجامدان ل خولی ب باشی قهله م دا.

دهرئه نجام: فهکولینی دیارکر کو فیژیکرنا نوزداریا تهنگافیا ب ریکا ب کارئینانا شیوازی (فیژیکرنا پالپشت ب کاری) ل نیک قوتابیین کولیزین بزیشکی، و نوزدارین نشته جی و خولا و ههروهسا ل نیک خوانده قانین خاندنا بلند یا پر بهایه و جهی باوه رییه.

الخلاصة

دور الدورات التدريبية المكثفة، القصيرة الأمد و المعتمدة على المهام في تطوير اداء المقيمين الدوريين في طب الطوارئ في دهوك-اقليم كردستان العراق

خلفية واهداف البحث: لقد شهد التعليم الطبي تغييرات دراماتيكية في كيفية اىصال المعلومة اللازمة لتاهيل الطلبة بالمهارات المعرفية والادائية. في العراق تم اعتبار طب الطوارئ من المواضيع التي تحتاج الى تطوير. لقد تم التيقن من ان التدريب الطبي المعتمد على المهام مرتبط بتحسين اداء الكوادر الصحية و الطبية في انجاز المهام التي تواجههم في حياتهم الوظيفية. ان الهدف من هذه الدراسة هو تقييم دور البرامج التدريبية و التعليمية المعتمدة على المهام في تطوير اداء المتخرجين الجدد من كليات الطب في مجال تنفيذ الاجراءات الطبية العاجلة في مجال طب الطوارئ.

طرق البحث: لقد اعتمدت طريقة البحث شبه التجريبي في تصميم هذه الدراسة التي نفذت خلال شهري حزيران و تموز من العام 2010 في دهوك. البحث اعتمد على عينة من الطلبة المتخرجين سنة 2009-2010 من كلية طب دهوك و الذين بدورهم قسموا الى مجموعتين: مجموعة التدخل و المجموعة الضابطة. العوامل التي حددت مجموعة التدخل هو ان لا يكون الطبيب المقيم الدوري قد اكمل تدريبه في مستشفى الطوارئ او اي من الوحدات او الاقسام الخاصة باستقبال الحالات الطارئة في مستشفيات دهوك الاخرى. لقد تم اختيار تسعة من الاجراءات المستخدمة في طب الطوارئ بكثافة لتكون المادة التدريبية النظرية و العملية للكتيب التدريبي التي استخدم لاحقاً كمنهج تدريبي للأطباء المقيمين المشمولين بالبحث. كذلك فقد تم اختيار الفحص السريري الهادف و المنظم في اختبار المهارات المعرفية و الادائية للعينة موضوع البحث قبل و بعد البدء بالبرنامج التدريبي.

النتائج: لقد سجلت مستويات متدنية في اداء كلا المجموعتين التدخلية و الضابطة في تنفيذ المهارات الادائية للاجراءات الطبية العاجلة في مجال طب الطوارئ قبل البدء بالبرنامج التدريبي. (34.3% مقابل 33.3%)، ولكن النتائج ظهرت معكوسة تماماً بعد تطبيق البرنامج التدريبي للأطباء العينة (88.6% مقابل 33.3%). كما تبين ان كلاً من الجندر و معدل التخرج النهائي من الكلية لا تاتر لهما على اداء اطباء العينة في البرنامج التدريبي. كما تلقى البرنامج التدريبي قبولاً جيداً من الاطباء العينة في اعتماد الاسلوب التدريبي المعتمد على المهام في التدريب على اداء الاجراءات العاجلة في طب الطوارئ.

الاستنتاج: ثبت ان الاسلوب التعليمي المعتمد على المهام فعال في تدريب و رفع الكفاءات الادائية للاجراءات الطبية العاجلة في مجال طب الطوارئ لدى الاطباء المقيمين الدوريين. و يمكن الاعتماد و التوثق من فعالية هذا الاسلوب أيضاً في تدريب طلبة الكليات الطبية و كذلك طلبة الدراسات العليا على الاجراءات العاجلة الخاصة بطب الطوارئ.