




# **The Role of Innovative Versus Traditional Medical Education in Kurdistan Health Reform: EM as an Example**

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- **In developed countries  modified traditional curricula  have not succeeded in improving the quality of medical care.**
- **In developing countries, traditional curricula copied regardless of local circumstances  catastrophic results**
- **New educational strategies:**
  - **Problem based learning (PBL)**
  - **Integrated learning**
  - **Task based learning (TBL)**



# **Conventional (lecture-based learning):**

- **In most medical schools, students qualify as a doctor without even performing essential practical skills.**
- **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.**

# **Task Based Learning (TBL)**

- **Students can perform tasks which health care professionals are faced with in real life**
- **Effective and efficient strategy for delivering relevant knowledge**

# Emergency Medicine

- **Changing health needs in countries experiencing economic and social growth**   
**greater demand for all types of emergency medical services.**
- **Many countries recognize the necessity and value of establishing quality emergency health care systems and are striving to create effective emergency medical programs**   
**Significant impact on the well-being of populations.**

# EM

- **Trauma is one of the top causes of morbidity and mortality in Iraq.**
- **EM was recognized by MOH as one of the important fields that need improvement .**
- **Undergraduate curriculum failed to fully meet the needs.**
- **The new graduates lack the practical skills.**
- **EM is not yet a medical specialty and it is practiced in poorly equipped departments.**

# **Aim of the study**

- **To test the role of a Task Based Training Module (TBTM) in improving EM procedural skills.**

# Methods

- **Quasi-experimental design, June and July 2010.**
- **Azadi Teaching Hospital in Duhok governorate.**
- **Participants comprised of newly graduated interns from the Duhok College of Medicine (DCM) for the year 2008-2009.**
- **The intervention group: 21 who had never worked in EM.**
- **The control group: 21 participants completed their internship in one of the EM units in Duhok governorate.**



# Methods

- **The trainers were senior doctors working in EM related disciplines. They underwent a comprehensive three days intensive training on Basic Assessment and Support by a visiting team of intensivists.**
- **The training aids used for eight of EM procedures were:**

**Lectures, Videotapes, Handouts, Flowcharts**

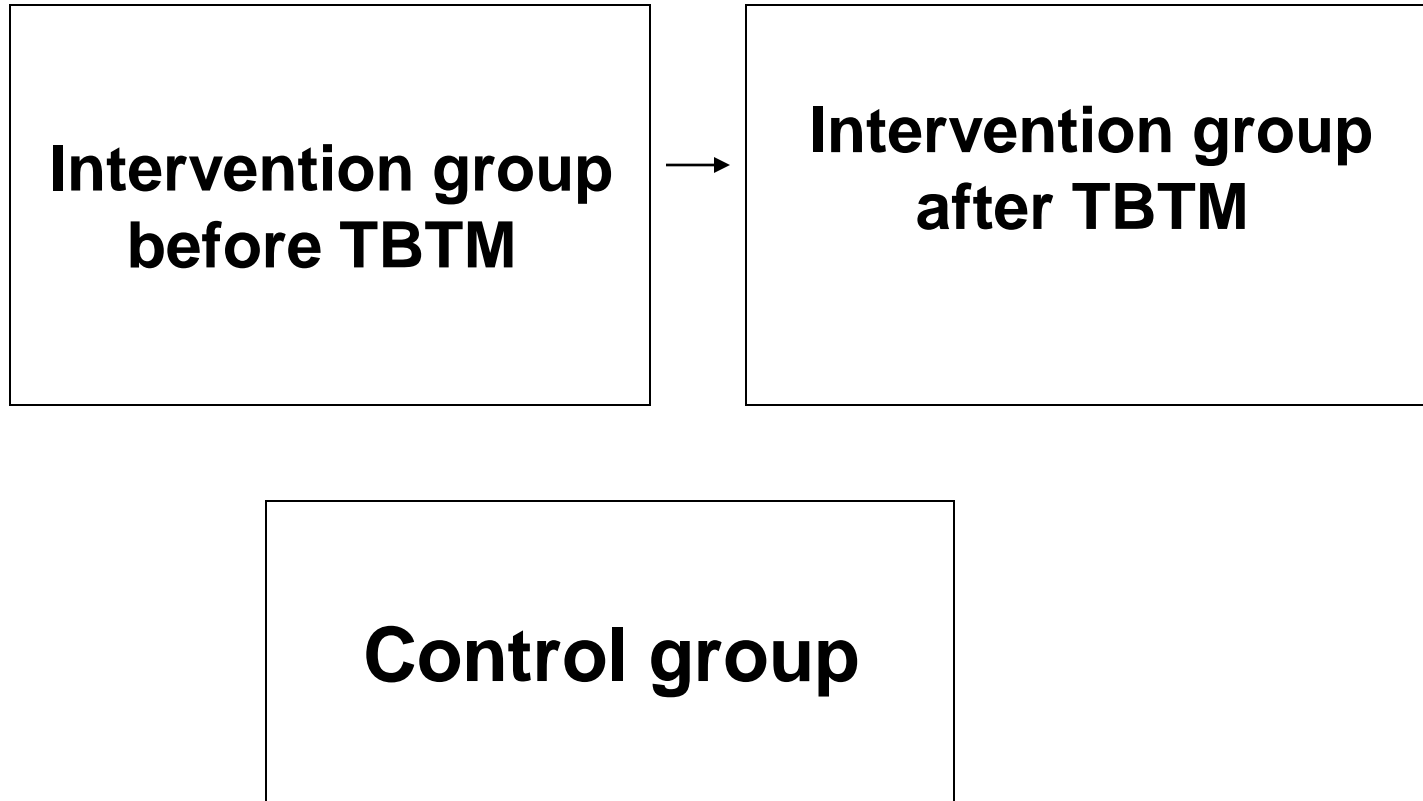
**FAQs and Mannequins (for the first time in training of interns).**

# **TRIAGE**

**On the other hand, case scenarios, case management protocols and videotapes were the main tools of training on the EM procedure of Triage in mass casualty.**

- **OSCE was used as tool for skill performance assessment against a five point rating scale checklist. Weighing mark for each subtask was distributed according to its importance.**
- **The attitudes of participants towards TBTM was assessed using a five-point scale.**
- **Feedback regarding trainees perceptions on TBTM and OSCE as a training and assessment tool via a questionnaire of five –points scale.**

# Assessment of procedural skill



**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 Procedures Tasks	Groups	Percent of trainees got a rating scale of					Mean (± SD)	P-Value
		1	2	3	4	5		
		<20	20-39	40-59	60-79	(≥80)		
<b>Basics of Airway Management</b>	Pre Interven.	42.9%	33.3%	19.0%	4.8%	0.0%	29.1 <sub>(17.8)</sub>	0.412
	Post Interven.	0.0%	9.5%	33.3%	0.0%	57.1%	80.1 <sub>(14.3)</sub>	
	Control Group	0.0%	81.0%	19.0%	0.0%	0.0%	32.5 <sub>(5.4)</sub>	<0.001
<b>Arterial Blood Gas Sampling and Puncture</b>	Pre Interven.	81.0%	9.5%	9.5%	0.0%	0.0%	11.9 <sub>(14.9)</sub>	<0.001
	Post Interven.	9.5%	14.3%	4.8%	23.8%	47.6%	67.0 <sub>(28.2)</sub>	
	Control Group	0.0%	19.0%	81.0%	0.0%	0.0%	44.4 <sub>(4.6)</sub>	0.002
<b>Triage in Mass Casualty</b>	Pre Interven.	4.8%	4.8%	85.7%	4.8%	0.0%	44.7 <sub>(7.7)</sub>	<0.001
	Post Interven.	0.0%	0.0%	0.0%	9.5%	90.5%	94.4 <sub>(8.1)</sub>	
	Control Group	0.0%	0.0%	71.4%	28.6%	0.0%	56.1 <sub>(6.0)</sub>	<0.001
<b>Endotracheal Intubation</b>	Pre Interven.	66.7%	23.8%	4.8%	4.8%	0.0%	14.9 <sub>(17.6)</sub>	<0.001
	Post Interven.	0.0%	0.0%	0.0%	28.6%	71.4%	87.3 <sub>(11.4)</sub>	
	Control Group	0.0%	100.0%	0.0%	0.0%	0.0%	31.0 <sub>(4.0)</sub>	<0.001
<b>Intravenous Cannulation</b>	Pre Interven.	4.8%	28.6%	66.7%	0.0%	0.0%	40.7 <sub>(10.0)</sub>	0.451
	Post Interven.	0.0%	0.0%	4.8%	4.8%	90.5%	92.3 <sub>(11.8)</sub>	
	Control Group	0.0%	61.9%	38.1%	0.0%	0.0%	38.8 <sub>(6.0)</sub>	<0.001

EM Procedures Tasks	Groups	Percent of trainees got a rating scale of					Mean (± SD)	P-Value
		1 <20	2 20-39	3 40-59	4 60-79	5 (≥80)		
Naso-gastric Intubation	Pre Interven.	0.0%	4.8%	95.2%	0.0%	0.0%	47.5 <sub>(6.0)</sub>	0.011
	Post Interven.	0.0%	0.0%	0.0%	0.0%	100.0%	100.0 <sub>(0.0)</sub>	
	Control Group	0.0%	9.5%	66.7%	23.8%	0.0%	54.1 <sub>(9.5)</sub>	<0.001
Cardiopulmonary Resuscitation and Cardiac Defibrillation	Pre Interven.	42.9%	52.4%	4.8%	0.0%	0.0%	22.6 <sub>(9.4)</sub>	<0.001
	Post Interven.	0.0%	0.0%	0.0%	0.0%	100.0%	95.3 <sub>(4.8)</sub>	
	Control Group	4.8%	57.1%	38.1%	0.0%	0.0%	39.1 <sub>(9.8)</sub>	<0.001
Basics of Wound Management	Pre Interven.	0.0%	14.3%	76.2%	9.5%	0.0%	47.0 <sub>(7.4)</sub>	0.042
	Post Interven.	0.0%	0.0%	0.0%	19.0%	81.0%	83.3 <sub>(6.2)</sub>	
	Control Group	0.0%	33.3%	66.7%	0.0%	0.0%	41.4 <sub>(9.7)</sub>	<0.001
Male Urethral Catheterization	Pre Interven.	14.3%	33.3%	38.1%	14.3%	0.0%	41.2 <sub>(16.6)</sub>	0.006
	Post Interven.	0.0%	0.0%	0.0%	0.0%	100.0%	97.3 <sub>(3.3)</sub>	
	Control Group	0.0%	0.0%	100.0%	0.0%	0.0%	52.6 <sub>(4.6)</sub>	<0.001
Total Score	Pre Interven.	0.0%	90.5%	9.5%	0.0%	0.0%	33.3 <sub>(5.9)</sub>	<0.001
	Post Interven.	0.0%	0.0%	0.0%	0.0%	100.0%	88.6 <sub>(4.5)</sub>	
	Control Group	0.0%	4.8%	95.2%	0.0%	0.0%	43.3 <sub>(2.3)</sub>	<0.001

**Table 2. Preliminary vs. Final Assessments of Participants' Attitude towards the Task-Based EM Training (Intervention Group).**

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

**Table 3. Regression Analysis Assessing Effects of Gender and Final Graduation Mark on the Degree of Change in Practical Skills of Intervention Group**

<b>Independent variable</b>	<b>Degree of change in practical skills</b>		
	<b>Beta coefficient</b>	<b>Standard error</b>	<b>P value</b>
<b>Gender</b>	-3.278	3.360	0.342
<b>Final college graduation mark</b>	-0.308	0.274	0.277



**Table 4. Participant's Feedback on Training Course and OSCE Assessment Tool**

Evaluation item	Satisfaction Rating Scale					Satisfacti on 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%**

# Recommendations

- Adopting at least some necessary components of innovative style instead of the traditional type of UMC currently in use in Kurdistan medical colleges such as student centered learning instead of teacher centered method, community rather than hospital based learning, and introduction of elective courses.
- Establishing skill laboratories in medical colleges to train students on essential practical procedures.
- Strengthening the adoption of task based learning process in teaching both knowledge and practical skills especially in emergency medicine.