

Evaluation of the Effects of Direct Observation of Procedural Skills (DOPS) on Clinical Externship Students' Learning Level in Obstetrics Ward of Kurdistan University of Medical Sciences

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Abstract

Background and purpose: Importance of clinical skills learning in medicine cannot be overemphasized but it seems that due attention is not paid to this issue. This study is an attempt to examine the effectiveness of direct observation of procedural skills (DOPS) in this regard.

Methods: In this study all externs passing the obstetrics ward rotation in 2005 and 2006 for the first time participated. In this study, at first, 7 fundamental skills were selected and checklists for skill evaluation was prepared. Student's skills was evaluated before and after traditional education (control group) and before and after intervention which added DOPS. Examiners were requested to also provide a global judgement of students performance. The data was analysed with paired T-test, T-test by SPSS software.

Results: In this study 73 students participated of whom 42 students (57.5%) were in control group, and 31 (42.5%) were in intervention group. In control group 47.6% and in interventional group 58.1% were male. Comparing students' scores for each skill, the intervention group had significantly improved more than control group ($p=0.0001$). Comparing the interventions means of students' averages for all skills before and after intervention (49.49 vs 86.03, $p<0.0001$) with those of control group (49.99 vs 77.43, $p<0.0001$) showed that the intervention group performed significantly better than control group (36.54 vs 27.44, $p<0.0001$). The examiner teacher's opinion about doing each skill by the student correctly showed that the students' skills in interventional group was more correct than control group. T-test showed a significant difference between groups in improvement of all skills ($p=0.000$).

Conclusion: Using DOPS can be very useful in increasing student's skill learning.

Key words: DOPS, SKILL TRAINING.

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Introduction

Since establishment of universities, theoretical and clinical educational methods has been changing and improving. The most important aim of educational systems was improving effectiveness of education and learning (1).

For general physician, it is essential to learn skills, doing examinations and procedures (2). In fact, learning these skills and competencies by medical students is essential for them to save patients and improve people's health in future (3). So, it is necessary to verify traditional education and doing some interventions in educational practice (4, 5). If not guided propely, trainees or students have to invent their own learning activities to comply with the demands that the curriculum makes upon them — they would have to “fill in the gaps” in the curriculum structure. These gaps can have deleterious effects on trainees' development, especially if their ability to provide the missing components is constrained by the context in which they are working. (6)

Several authors comment on the lack of rigorous testing of procedural skills. One method for evaluating medical students' learning is direct observation of procedural skills (DOPS), it is the observation and evaluation of a procedural skill performed by a trainee on a real patient. (7)

There is little research on the acceptability of DOPS; however they appear to be acceptable to both examinees and examiners. Trainees generally welcome the opportunity to be observed by someone more experienced and to receive immediate feedback (8, 9).

Despite the lack of evidence on its quality, direct observation of an individual's procedural skills certainly has high face validity. Examinees are observed in a situation which very closely resembles normal clinical practice, since there are real patients and the procedures are selected from routine tasks. The only real authenticity issue is that

doctors may not perform according to their usual standards due to the anxiety of knowing they are being assessed. If a doctor knows they are being observed this may influence their behavior, so it may be argued that this method is not assessing performance, but competence. (10)

Despite this criticism, the Royal College of Physicians, who developed a DOPS instrument for the Foundation Program, anticipated that it would be found to be highly valid and reliable instrument, particularly compared to the previous logbook based system(10, 11, 12).

Although not a new instrument, the use of DOPS for junior doctors has been practiced in recent years. In some training programs it is replacing other instruments used for the assessment of procedural skills such as

log books and supervisor evaluations. (7, 13)

DOPS is not widely used for assessing senior doctors. One exception is the use of DOPS by the Royal Australasian College of Physicians as part of its maintenance of professional standards program since 1994. (14) It also is one of the new assessments being piloted in the UK as part of the new “Foundation Program” for medical graduates in their first two years of practice before they begin specialist training. (15)

Methods

In this interventional study all the externs attending obstetrics ward in 2005 and 2006who passed this rotation for the first time participated. Based on a review of texts (16, 17), 7 fundamental skills were selected through an analytic hierarchic process (AHP) and then these skills were prioritized by obstetrics specialists and a checklist for assessing the skills was prepared. This skills were fetal heart rate auscultation, determination of gestational age by abdominal palpation, Leopold's maneuver, Pap smear taking, IUD insertion, bimanual vaginal examination and breast examina-

tion. Then the checklist was prepared to evaluate Students' skills based on textbooks introduced as reference by Ministry of Health (16, 17) and options which are required for doing each skill. This checklist, consisted of these 7 skills, confirmed by all obstetrics specialists in Kurdistan University of medical sciences. Grading was determined based on a Likert's type scale and the mean of teacher's grading considered each skill mark. Non of examiner teachers were aware of doing this study.

The procedure was done in the following steps

- 1- Explaining the reasons and indications for doing each skill.
- 2- Recording observed student practice and evaluation based on the checklist.
- 3- Evaluation at the beginning of the curriculum to compare with evaluation at the end for measuring student's improvement in each skill.
- 4- Observation of skills in 15 minutes based on the student's request.
- 5- Giving feedback to the student in 5 minutes.
- 6- Doing the evaluation in a good environment by considering an appropriate time.
- 7- Giving the evaluation checklist to the student.

For doing this research, students were randomly divided to four groups, the first two groups passed routine training of obstetrics clinic of Kurdistan medical university while for the other two groups DOPS method was added to the routine.

Both groups were assessed at the beginning and at the end of the rotation based on the seven-skill checklist. At the end of each checklist the examiners also had to report their overall judgment of student's performance.

For examining the significance of findings paired T- test, T- test, and chi-square test were used. The analysis was done with SPSS ver 11 software.

Results

In this study 73 students participated of whom 42 students (57.5%) were in control group, and

31(42.5%) were in intervention group. In control group 47.6% and in interventional group 58.1% were male. There was no significant difference between two groups in terms of students' sex distribution ($p=0.377$).

Mean age in control group was 24.7 ± 1.63 , and in intervention group 24.4 ± 0.92 and in the control 24.6 ± 1.37 . There was no significant difference between two groups in terms of students' age distribution ($p=0.495$).

Comparing students' scores for each skill, the intervention group had significantly improved more than control group ($p=0.000$). (Table 1)

Comparing the interventions means of students' averages for all skills before and after intervention (49.49 vs 86.03, $p<0.0001$) with those of control group (49.99 vs 77.43, $p<0.0001$) showed that the intervention group performed significantly better than control group (36.54 vs 27.44 , $p<0.0001$).

The examiner teacher's opinion about doing each skill by the student correctly showed that the students' skills in interventional group was more correct than control group.

Discussion

Clinical decision making and safe patient management are vital elements of professional practice. Assessing these elements is difficult. Some researchers have developed techniques for this based on an approach, originally used as a research tool, called chart-stimulated recall. (18)

Knowing that a trainee can do a particular task is usefully reassuring for a supervisor. There has been recent interest in assessing trainees through directly observed procedural skills (DOPS). This practice has burgeoned simultaneously in a number of countries. (15, 19, 20, 21)

DOPS usually uses generic versions of rating scales, similar to objective structured clinical examination scales, applied to a real time practical procedure in a real setting. In that sense, it is noth-

ing new. Frequently, it is not convenient to have procedure-specific rating scales, although some researchers have worked with these. (22)

Marking each step of skills tends to increase reliability and validity of the exams, obstetrics teachers' global evaluation, a concurrent assessment, showed rather same results.

Our findings showed that interventional and control group was least different in Leopold maneu-

ver skill instruction was similar in control and interventional groups with skill being demonstrated and students' performance observed.

In summary, it is evident that DOPS improved the performance of our students. Traditional procedural training with heavier focus on factual knowledge and lower attentions to skill training can lead to a graduates with poor procedural competence(4).

Table 1: The mean of each groups scores for each of 7 skills

Group	Group		
	Control group	Interventional group	T-Test
Mean percentage in improvement of skill evaluation grade			
Fetal heart auscultation	30.07 ±14	47.05 ± 17.1	P=0.000
Determining of gestational age by abdominal palpation	22.95 ±14.5	49.3 ±20.9	P=0.000
LEOPOLD maneuver	35.55 ±18.7	47.04 ±24.6	P=0.034
PAP SMEAR taking	27.35 ±14.3	43.16 ±19.5	P=0.000
IUD insertion	25.35 ±8.4	32.35 ±11.2	P=0.014
Bimanual vaginal exam	27.34 ±14.9	40.66 ±19	P=0.004
Breast exam	22.58 ±11	54.02 ±32.8	P=0.000

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