

Objective Structured Practical Examination (OSPE)

(An innovative approach in assessing clinical competence)

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Introduction

Testing, measurement and evaluation play an important role in all educational institutions, including Nursing Educational Institution. Evaluation tools have far reaching consequences for students in their success or failure, consequently educators have the responsibility for development of testing devices or procedures that fairly evaluates student's achievements and yields accurate results.

The traditional system of practical examination in Nursing Education consists of either assigning a procedure to a student or a patient for identifying the needs on a priority basis for giving care, this depends upon student's ability and availability of the patient for a particular procedure.

In spite of the innovations in the mode of evaluation of students' performance, the importance of conventional system of practical examination can not be denied.

- It helps us to observe and assess student for different professional and technical skills in a real life situation. It enables us to have an overall view of the students' performance.

However the conventional system has its own drawbacks.

- It is subjective, as the student's score depends on the whims, fancies and mood of the examiner.

- It is time consuming and there is a lack of standardized conditions in bedside, which affects student's score.

Realising the magnitude of the problem prevailing in assessment of students, the Department of Physiology (Nayar et al, 1986) at All India

Institute of Medical Sciences (AIIMS) introduced a new pattern of practical examination called OSPE, which has greater objectivity, reliability and validity.

What is OSPE?

Objective Structured Practical Examination (OSPE) - is a new pattern of practical examination. In OSPE each component of clinical competence is tested uniformly and objectively for all the students who are taking up a practical examination at a given place.

Through OSPE one gets a reasonable idea of the extent of achievement of each student in every practical skill related to a particular discipline. It can be used for formative and summative evaluation.

How to organise an OSPE

In order to organise an OSPE one has to spell out objectives of practical experiences in a given discipline related to a particular subject such as practical examination in medical surgical Nursing each student is supposed to :

1. Demonstrate practical skills
2. Make accurate observations
3. Analyse and interpret data
4. Identify the patient's problems
5. Plan alternative Nursing interventions

The present system of examination does not measure the student's competence in these areas systematically.

Following are a few examples to show how through short questions each of the objectives of skill component can be determined or assessed.

1. Demonstrate practical skills

This may be done by assigning a student to :-

- Monitor and record oral temperature
- Convert 39°C fever to F°
- Attach a heart monitor to a patient
- Test urine for sugar
- Start an I.V. drip on a patient

2. Make correct and accurate observations

This may be done by assigning a student to :

- Interpret the type of fever from the given graph.
- Identify the type of arrhythmia from the E.C.G. graph provided.
- Differentiate between normal and abnormal E.C.G.

These questions may not require the examiner to observe the student in action. These questions can be answered on a paper which can be collected later on for evaluation.

3. Analyse and interpret data

This is one of the important skill component to be judged for the continuity of patient care. The Nurse has to perform this task where she may come across normal and abnormal data in relation to patient's investigation reports.

The student is asked to interpret :

- Haemogram : normal or abnormal
- Liver function test reports
- Renal function test reports
- Laboratory reports

4. Identify patient's problems

In order to organise her work the Nurse has to identify the patient's problems and set priority so as to cater to the immediate needs of the patient, such as to identify :

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- Dyspnea on the basis of her observations
- Rigor following blood transfusion
- Coning following lumbar puncture
- CSF rhinorrhoea following head injury

5. Plan alternative Nursing interventions in a given situation

In order to provide need based care the Nurse plans alternative Nursing interventions, as in case of air way obstruction the student Nurse is expected to :

- Keep the patient in side lying position
- Do oropharyngeal suction
- Check and record vital signs
- Start O₂ inhalation if required
- Keep the things ready for endotracheal intubation.
- Assist the doctor in intubating the patient

In order to assess the certain practical skills, the OSPE is organized in the form of several stations through which the candidates rotate till they complete one full round.

Types of stations :

In order to have a comprehensive appraisal of the student performance during OSPE, different types of stations are planned and organized alternatively.

Type of stations : Stations are of two types :

1. **Procedure Station :** It requires a student to perform a task, eg. monitoring of oral temperature. When a student performs the task, simultaneously she is being observed and marked against the checklist being prepared in advance by a silent but vigilant examiner. Eventually the student gets a score according to the skill demonstrated by her.
2. **The Question Station :** The student answers the question being asked on the answer sheet provided and leave the answer sheet in the place specified.

The question station may have a question related to the procedure station such as convert 39°C fever to F° by using a formula, and on procedure station student is asked to monitor oral temperature and record it.

How to score students in OSPE :

1. For each specific skill, a checklist is prepared by breaking the skill being tested into essential steps and score is assigned to each step which is proportional to the importance of the step related to a particular procedure.
2. The objectivity in assessment is achieved by getting each component tested at one particular station by the same examiner and have the students rotate through all the stations.
3. The time allowed is same for all the stations, 3-5 minutes is the length of time allocated to each station.

The following are the outlines of an OSPE of 6 stations which are designed for 1st year B.Sc. (Hons) Nursing Students, AIIMS. (Table 1).

Examiner A,B,C stand in a place from where they can have a good view of what the candidate is doing at a station. They have a checklist on which they tick as they observe. A copy of fresh checklist is used for every candi-

date and examiner concerned enters the Roll No. of each candidate so as to know the score of each candidate separately.

Questions for station 2,4,6 are printed on cyclostyled sheet separately in terms of stations number so as to provide one copy to each candidate at each question station. The same sheet also serves as an answer sheet. The question should be specific and short answer. The key to the question is prepared in advance.

Before starting the OSPE, the examiner concerned should obtain baseline information regarding the patient, for e.g. monitor the blood pressure and make a note for it.

What instructions are to be given to the students regarding OSPE

1. Write your Roll No. in bold figures and display it on your white coat so that the examiner can identify the candidate.
2. Students are asked to report at a particular time, all of them are collected in a room or hall and explained the procedure of the examination.
3. Students may be given instructions that they will rotate around station (numbered 1 to 6) spending 3 minutes at each station. A bell will ring

Table 1

Station	Question	Method of Scoring
1 (Procedure station)	Check & Record B.P.	Observed and scored by the examiner A using the checklist
2 (Question station)	List 5 factors which help in maintaining B.P.	Answer on a sheet provided
3 (Procedure station)	Take oral temperature and record it.	Observed and scored by the examiner B.
4 (Question station)	Convert 39°C fever into F° by using the formula.	Answer on a sheet provided
5 (Procedure station)	Test the urine for albumin and record it.	Observed and scored by the examiner C
6 (Question station)	List five causes of albuminuria	Answer on a sheet provided

Station-1

Check List for recording Blood Pressure by Auscultation method.

M.M.=3

Roll No. _____

1. Deflates the cuff completely	Yes (.1)	No
2. Ties cuff correctly	Yes (.3)	No
3. Locates artery before auscultation	Yes (.3)	No
4. Inflates cuff to raise pressure above 200 m.m. Hg	Yes (.2)	No
5. Lets mercury drop promptly	Yes (.1)	No
6. Continues to let the mercury drop slowly	(0.5)	(0)
7. Notes systolic pressure	Yes(0.5)	No(0)
8. Notes diastolic pressure correctly	Yes(0.5)	No(0)
9. Takes more than one reading	Yes(0.5)	No(0)

at the beginning and at the end of 3 minutes.

- At each station, you will either demonstrate a skill, make observation, or make calculation from the data provided or answer the question asked.
- At each station further specific instructions are given as to what you should do.

As the students enter the room, one invigilator rings the bell with the help of a timer at every 3 minutes interval.

At the end of OSPE the checklist of examiners A,B,C, pertaining to a given candidate and her answer sheets put together to give her a final score.

Through OSPE one can find out at what particular step the candidate erred in carrying out a specific procedure and a subsequent feedback can be given to rectify her mistake, instead of making a general comment like "Performance was good" or "Most of them did well".

What are the advantages of OSPE ?

- It is more objective, reliable and valid than the traditional system of examination.
- All students are subjected to the same standardised test.
- Emphasis is shifted from testing factual knowledge to testing of skills, that too in a short time.
- It helps to ensure wide coverage of all practical skills.

objectivity, reliability and validity in evaluating the performance of students can be improved, however, certain limitations of OSPE cannot be overlooked.

- OSPE is used only in simulated situations due to the non-availability of patients for the same procedure.
- The simulated situation may not reflect the real life situation.
- Students cannot be assessed for different skills, such as IPR, communication skill and dexterity in handling equipments.
- Empathy towards the patients cannot be evaluated.
- A student skill in using holistic approach while providing Nursing care cannot be assessed.
- It is also time consuming to construct an OSPE.
- It cannot be used by a single handed person, it needs more resources in terms of manpower, time and money.
- There is no interaction between examiner and examinee.

It would be ideal to use an OSPE in combination with traditional system of practical examination, as both these approaches would enable the examiner to assess the multiplicity of skills in the students in a given situation.

Though OSPE is a new concept in the field of Nursing, if used systematically it would yield more accurate results and improve standards of Nursing Practice.

Conclusion :

In a nutshell one may say that evaluation of skill is complex and it cannot be assessed by one single device as no single method of evaluation is a foolproof system by itself.

Through OSPE,

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