RESEARCH ARTICLE

COSPE IN ANATOMY: AN INNOVATIVE METHOD OF EVALUATION.

Saju Binu Cherian.

Associate Professor, Department of Anatomy, Apollo Institute of Medical Sciences and Research, Hyderabad, India-500033

……………………………………………………………………………………………………....

Manuscript Info	*Abstract*
……………………….	…………………………………………………………
	Introduction: Evaluation process of teaching- learning outcome in Anatomy is a complex task as this basic science discipline is an extensive subject. Evaluation includes three multiple domains: theoretical knowledge, practical knowledge and clinical knowledge. The assessment of practical knowledge involves oral and specimen discussions. Considering the fact that still the first year undergraduates are assessed by Traditional practical examinations (TPE) and for uniform assessment of the whole class and with the advances in computer and software technology available, we tried to refashion it with Computer Assisted Objective Structured Practical Examination (COSPE). **Objectives:** To design a tool for assessment of teaching- leaning outcome with accuracy, efficacy and to have uniform examination of whole class in a stress free environment. **Methodology**: All the 100 students were subjected to COSPE at the same time. The questions were formulated and presented on Power point presentation with necessary animations. The presentation was then projected on an LCD screen with an auto display that projected a new slide every 3 min. Specimens were well labeled. Answer key was prepared during the test itself and handed over to examiners with answer scripts. Student responses towards COSPE were collected. **Result and Conclusions**: The responses of students towards COSPE were favorable. This method of evaluation enabled uniform assessment of the whole class as COSPE was administered in one session. It is of significant advantage for institutions unable to conduct traditional spotter exam. It was less cumbersome, less time consuming and also less taxing for faculty and students.

……………………………………………………………………………………………………....

Introduction:-

Anatomy, a basic science discipline taught to undergraduate medical students, is an extensive subject and the evaluation process of its teaching- learning outcome is a complex task. Evaluation includes three multiple domains: theoretical knowledge, practical knowledge and clinical knowledge [1]. The assessment of practical knowledge involves oral and specimen discussions. The examination should be acquisition of essential anatomical skills such as power of observation, identification and interpretational abilities for effective clinical practice [1]. Considering the fact that still the first year undergraduates are assessed by Traditional practical examinations (TPE), we tried to refashion

---

Corresponding Author:- Saju Binu Cherian.
Address:- Associate Professor, Department of Anatomy, Apollo Institute of Medical Sciences and Research, Hyderabad, India- 500033..

325

it with Objective Structured Practical Examination (OSPE), a versatile multipurpose evaluative tool that can be utilized to evaluate students in practical assessment. OSPE is a cognate of (Objective Structured Clinical Examination) OSCE,described in 1975 and later in 1979 by Harden et al [2]. OSPE is the standard mode of assessment of competency, clinical skills and satisfactorily complimenting cognitive knowledge testing.

OSPE is administered usually with multiple stations designed around a specific objective. The objectives tested under OSPE include higher levels of cognitive and psychomotor skills. The normal process of OSPE starts with identifying the key objective followed by evaluation at cognitive and psychomotor levels. About 30 students were subjected to OSPE at a given time in two circuits of 15 stations each. A student will be given 90 seconds in each station and each student rotated through each station. Faculty coordinators will have to prepare each station by either tying or flag labeling the specimen using twine or beaded pins. The availability of two similar specimens with same level of difficulty in identification for two circuits was also a matter of concern. Some stations frequently required visits by faculty as the students removed the pins or threads. At times, the student did not alert the faculty out of fear. All these prevented uniform assessment for the whole class. The faculty reverberated this concern and also felt that it was time consuming.

The advances in computer and software technology available offer several advantages for the development and administration of computerized examination for medical education purposes. Based on their feedback, a more practicable method of administering OSPE was evolved and thus computer assisted evaluation of OSPE was developed which was redefined as Computer Assisted Objective Structured Practical Examination (COSPE).

Aims and Objectives:-
To develop an efficient tool to assess the practical aspects of anatomical knowledge with accuracy, efficacy, with power of observation, identification and interpretational abilities for effective clinical practice with less time in a stress free environment.-

Methodology:-
Undergraduates at AIMSR undergo three sessional examinations and one pre- final examination with two sessions of practical assessment before their university examination. Traditional gross anatomy practical exams include clinical charts, specimen discussions and oral examination which include embryology and radiology also. We introduced Computer Assisted OSCE after their second sessional examination. All the 100 students were subjected to COSPE at the same time. The students were oriented well to COSPE before the conduct of exam. The questions were formulated in such a way to test their power of observation, identification and interpretational abilities and presented on Power point presentation with necessary animations. The presentation was then projected on an LCD screen with an auto display that projected a new slide every 3 min. Specimens were well labeled. Answer key was prepared during the test itself and handed over to examiners with answer scripts. Student responses towards COSPE were collected.

Results:-
Generally, the responses of students towards COSPE were favorable. Following are the responses of students towards COSPE
Table 1:- Student responses to COSPE.

Effective self assessment in less stressful environment
More clarity of structures
Innovative way of examining
Fun learning experience
Very beneficial
Interesting and good recollection of practical sessions
Brilliant idea
Memory based learning
Tension free
Must be conducted once in a week

Discussion:-

Feedback given by students was constructive and showed high acceptance.

Anatomy teaching is undergoing significant changes due to time constraints, limited availability of cadavers and technological developments in the areas of three-dimensional modeling and computer-assisted learning. The success of any teaching program lies in planning a curriculum which allows the students to gain maximum applicable knowledge and skills in the short span of time available[3]. The spotter test is an assessment that has been used widely to test practical knowledge of anatomy. The use of traditional specimen-based anatomy spotters as a means of assessment has declined in recent years. This is partly due to increasing student numbers and thus time required for conducting such exams; marker variability and impartiality are also issues [4]. Traditional spotter formats often focus solely on knowledge recall, in addition to being an onerous marking burden on staff where consistency in marking free text responses can be questioned[5].

OSPE remains the most efficient tool to assess the practical aspects of anatomical knowledge in a system where basic knowledge is integrated with the clinical or functional part of anatomy [1]. OSPE reduces the fear of the student facing the examiner and hence reduces anxiety and improves the performance of student [6]. OSPE, the chances of bias because of the mood of the examiner etc. are less as compared to traditional examination, also it is more transparent, and with less anxiety level makes the student more comfortable as compared to traditional practical examination. OSPE as a single method is time consuming, more space is required and affects the performance of students because out of vast portion only few and selective questions are asked [5]. To innovate this method, computer-assisted OSPE (COSPE) was introduced for the first time at AIMSR

Conclusion:-

This method of evaluation enabled uniform assessment of the whole class as COSPE was administered in one session. It is of significant advantage for institutions unable to conduct traditional spotter exam. It was less cumbersome, less time consuming and also less taxing for faculty and students.

An innovative method of orchestrating objective structured practical examination (OSPE) in Anatomy for first year MBBS students at Apollo Institute of Medical Sciences and Research, Hyderabad is described here.

References:-

1. Yaqinuddin A, Zafar M, Ikram MF,Ganguly P. What is a n objective structured practical examination in anatomy?.Anat Sci Educ 2013;6(2): 125-33
2. Harden RM, Gleeson FA. Assessment of clinical competence using an objective structured clinical examination (OSCE) Med Educ.1979; 13:41–54.
3. Mostafa Kandil Soliman. Evaluation of teaching methods of human gross anatomy among medical students, Interns and residents in King Fahad Medical City, KSA. APMEC 2013
4. Morton, Stuart Xu, Yong and Joplin, Ruth. Evaluation of a new automated spotter style exam for assessment of anatomical knowledge. Clinical Anatomy 2012; 25(6)
5. Choudhury B, Gouldsborough I, Shaw FL. The intelligent anatomy spotter: A new approach to incorporate higher levels of Bloom's taxonomy.Anat Sci Educ. 2015 (9): 440-445
6. Gaikwad AP, Patil AD. An Introduction of OSPE for Embryology to First MBBS Students in Anatomy Department. Sch. J. App. Med. Sci., 2015;3(6B):2306- 2308