

Brief report

Medical students' perception of the proposal for theme-based integrated multi-disciplinary objective structured practical examination in Saudi Arabia

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This study aimed to find the opinion of preclinical medical students concerning a new suggested approach for practical assessment. Fifty-three female students agreed to participate in this study, out of 87 registered students in years 2 and 3 of the basic science phase of the College of Medicine, Qassim University, Kingdom of Saudi Arabia. Full explanation was made to the students of theme-based integrated objective structured practical examination (TBI-OSPE), followed by distribution of a questionnaire to collect the students' opinions. The study was conducted in January 2015. Results showed that 78% of respondents were accepting of this new approach, and that only 5.7% rejected it. This difference was statistically significant ($P < 0.05$). This study suggested a new model for assessment of preclinical students' competencies using the proposed tool (TBI-OSPE) rather than standard classical OSPE, particularly in curricula involving high levels of integration and theme-based problems. This form of assessment would more positively enhance learning.

Keywords: Curriculum; Medical students; Saudi Arabia; Surveys and questionnaires

Historically, objective structured practical examination (OSPE) has been related to and conceptually synonymous with the previously-implemented objective structured clinical examination (OSCE) [1]. OSPE is primarily used to validly, fairly, and reliably evaluate students' competencies in the practical domains of basic sciences, with a good capacity for distinction between different categories of students [2,3]. In classical multi-disciplinary (Fig. 1) or mono-disciplinary OSPE, students are assessed via 15-20 stations. Each station involves either a procedure or a response, and is designed to test a component of basic science competency. Noticeably, most institutes using OSPE apply it in a mono-disciplinary examination (i.e., an examination in one discipline) [2]. Qassim College of

Medicine, Kingdom of Saudi Arabia, is adopting an innovative curriculum using problem-based learning (PBL), a hybrid approach, and implements standard classical OSPE rather than theme-based integrated OSPE (TBI-OSPE), with first-through third-year medical students gaining early exposure to clinical skills via a clinical skills laboratory. The classical multi-disciplinary OSPE currently implemented by the College was introduced in 2011. As currently implemented, the guiding principle of this classical OSPE is to allow the various basic science departments to participate in practical examination of the students at the end of the course. However, in the context of a PBL approach, in which problems are usually designed based on pre-planned themes, the practical examination should also be designed on the same principles (i.e., theme-based integration rather than classical OSPE). With TBI-OSPE, we suggest another form of examination that—instead of preparing OSPE stations from a single department (mono-disciplinary OSPE) or independent stations from different departments

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Received: February 21, 2016; Accepted: March 30, 2016;

Published online: March 31, 2016

This article is available from: <http://jeehp.org/>

in the same examination (multi-disciplinary OSPE)—respects and acknowledges the themes or areas addressed by educational problems during implementation of the course (block). This means that if students complete, for example, a cardio-

vascular block, with themes including hypertension, cardiac failure, cardiomyopathy, endocarditis, and so on, the TBI-OSPE should be designed such that in practical examination, the laboratory examination stations relate closely to samples selected from among these themes. For example, for the selected theme of hypertension, all basic science departments should provide relevant examination stations related to hypertension (Fig. 2). This study aimed to examine the opinions of preclinical students, including their insights and perceptions, concerning this suggested form of TBI-OSPE.

This was a descriptive observational study. Fifty-three female students of years 2 and 3 in the preclinical phase, out of a total of 87 subjects, agreed to participate in the study to investigate student perception of the suggested type of practical examination. A 5-point Likert scale (from “strongly agree” to “strongly disagree,” with “I can’t judge” as the midpoint) was used for 5 items on a questionnaire. Its reliability, according to Cronbach’s coefficient alpha test, was 0.924. Students of years 2 and 3 are more familiar with the classical OSPE currently conducted in the College, as this examination style has been implemented in the preclinical phase for about 5 years. Background information on the suggested TBI-OSPE was provided-

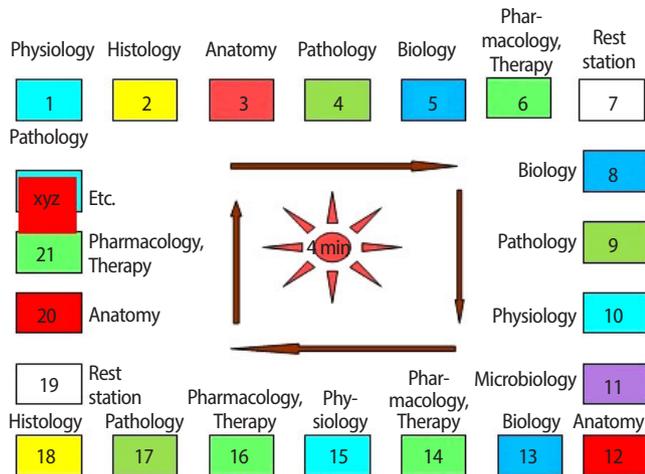


Fig. 1. Diagram of classical multi-disciplinary objective structured practical examination in the College of Medicine, Qassim University, Kingdom of Saudi Arabia.

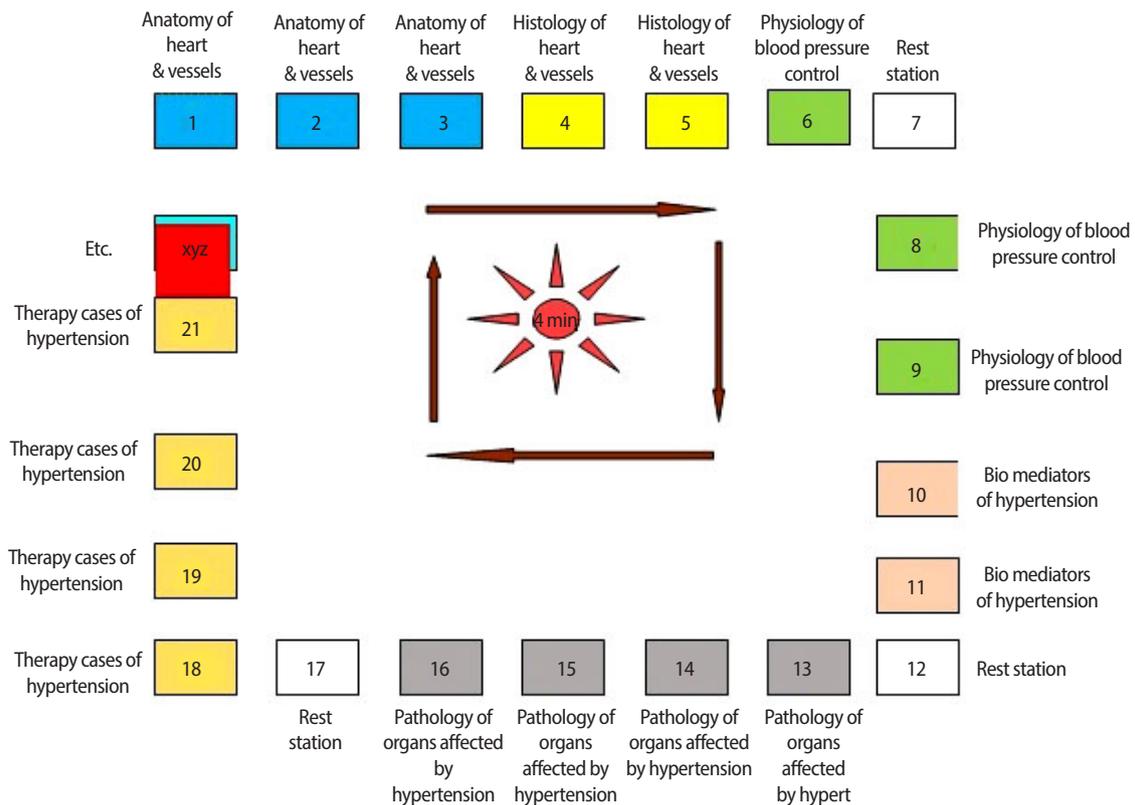


Fig. 2. Diagram of theme-based integrated multi-disciplinary objective structured practical examination newly proposed in the College of Medicine, Qassim University, Kingdom of Saudi Arabia.

Table 1. The opinions of medical students concerning theme-based integrated multi-disciplinary objective structured practical examination (TBI-OSPE), in the College of Medicine, Qassim University, Kingdom of Saudi Arabia, 2015

No.	Question	No. Accepting (%)	No. Neutral (%)	No. Rejecting (%)	P-value
1	Theme-based integrated OSPE would enable me to deal with the exam stations better	39 (73.6)	11 (20.7)	3 (5.7)	< 0.001
2	Theme-based integrated OSPE seems logical, as it is consistent with the integrated system of problem-based learning	45 (84.9)	5 (9.4)	3 (5.7)	< 0.0001
3	Theme-based integrated OSPE would enhance my understanding of experimental course knowledge	46 (86.8)	5 (9.4)	2 (3.8)	< 0.0001
4	Theme-based integrated OSPE would enhance my understanding of course/block knowledge	44 (83)	5 (9.4)	4 (7.6)	< 0.001
5	Theme-based integrated OSPE seems more logical than currently implemented standard OSPE	33 (62.3)	17 (32)	3 (5.7)	< 0.001
Median		44 (78.1)	5 (16.2)	3 (5.7)	< 0.05

ed to the students who participated in this examination, in addition to documentation and explanation of the principles given in a background paper, which was distributed to the participants. Questions raised by the students were addressed and fully clarified by the staff concerned. These activities were all completed before distribution of the questionnaire. The survey was conducted in January 2015. Students' responses were collected, described, and analyzed using the Chi-square test of significance, with a probability level of $P < 0.05$ accepted as significant. Informed consent was obtained from all subjects.

Table 1 shows the opinions of the students who agreed to participate in this survey ($N = 53$). Almost 78% of respondents indicated acceptance of the idea (with a median of 44), as opposed to 5.7% who rejected the idea (with a median of 3) and 16.2% who expressed neutral opinions (with a median of 5); the difference was statistically significant ($P < 0.05$).

The objective of this study was to examine the preclinical students' perception of the proposed practical examination approach, TBI-OSPE. Over the past few years, the use of standard classical OSPE (Fig. 1) as an evaluation tool for practical competency has received satisfactory feedback from both students and teachers [3]. The most important advantage of OSPE is the examination's promotion of transparency—emphasis is placed on objective rather than subjective assessment of students [1]. Practical examination is structured objectively in many medical subjects across many countries at this time [4]. The same method used for other components of the examination can be used with the release of 3-4 themes, depending on the logistics and structure of the examination. During TBI-OSPE implementation, students will rotate (as in classical OSPE, during which each student begins at a random station and rotates to the next station successively) to complete all the examination stations corresponding to all themes. This form of assessment would acknowledge the themes studied during courses/blocks, as well as the integration of problems that high-

light the natural history of disease from the pre-pathogenesis to overt pathological stages, and therapeutic approaches to disease. In a course or block addressing endocrine diseases, to provide another example, themes such as diabetes or thyroid/pituitary dysfunction could be considered as bases for TBI-OSPE design, with all related basic science departments contributing appropriate stations that are relevant to and consistent with the theme selected. This proposed type of OSPE maintains logical consistency with innovative curricula like PBL, which is characterized by high levels of integration, and it also enhance learning through assessment.

In this study, we explained the principles of this examination style to students who agreed to participate in the study (female students from years 2 and 3, $N = 53$). A 5-item questionnaire based on a 5-point Likert scale was used to collect students' opinions. A significant number of students ($P < 0.05$) indicated positive perceptions of TBI-OSPE, for example that they expected it to enable them to better handle examination stations, that it is a logical approach and consistent with the essence of integration in PBL, that it would enable them to better understand experimental knowledge in a course/block, that it would enhance their learning, and that it seems a better substitute for the currently implemented regular OSPE. Of interest in the students' responses was that almost 32% were unable to make a judgment about this form of examination. This was a logical occurrence, because the students had not participated in TBI-OSPE previously and were more familiar with the classical form of OSPE; they expressed their expectations with respect to this examination type. Increasingly, medical educators are trying to integrate basic medical sciences with relevant clinical sciences to introduce the theoretical basis of clinical practice in a meaningful way [1]. This study was subject to some limitations—for example, only female students from years 2 and 3 of the preclinical phase agreed to participate. Year 1 students were excluded because they had not yet been exposed to classical OSPE, making them unable to com-

pare it with the proposed new type of assessment. Another limitation was that the students expressed their perceptions based only on their understanding of the principles behind this examination; they had not participated in this type of assessment like they had in classical OSPE. Further study is needed incorporating both male and female students in a real implementation model to compare regular OSPE with TBI-OSPE.

In conclusion, this study suggested a new model for assessment of preclinical students' competencies using the proposed tool of TBI-OSPE, rather than standard classical OSPE, particularly in curricula with high levels of integration and theme-based problems, like PBL. This form of assessment would more positively enhance learning.

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Conflict of interest

No potential conflict of interest relevant to this article was reported.

Acknowledgements

The authors acknowledge the medical education department's contribution in making the monitoring room (equipped with audio-visual facilities) accessible for conducting this re-

search, as the monitoring room allowed the researcher to follow, observe, and appraise the performance of students in both phases of program implementation: learning and evaluation.

Supplementary material

Audio recording of the abstract.

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