

# PRIORITIZATION OF FACTORS BY MEDICAL FACULTY TOWARDS INTRODUCTION OF CENTRALIZED, OBJECTIVE STRUCTURED CLINICAL AND PRACTICAL EXAMINATION

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## ABSTRACT

**OBJECTIVES:** To prioritize the factors required for the implementation of the centralized, Objective Structured Clinical Examination (OSCE) and Objective Structured Practical Examination (OSPE) to standardize the clinical examination across the province of Khyber Pakhtunkhwa, Pakistan

**METHODS:** This cross-sectional descriptive survey following quantitative study design was conducted at four medical colleges from Peshawar, Pakistan, from October 2019 to January 2020. All study participants were practically involved in planning and executing OSCE/OSPE. A 20-item survey questionnaire was developed based on the protocol given in AMEE guide-87. All the validation steps, including pilot testing, were followed. Responses were analysed using SPSS-22.

**RESULTS:** Out of 100 faculty members where 72 participants responded. Thirty-eight (52.7%) participants belonged to private sector, 35 (48.6%) were working as demonstrators and 30 (41.7%) as assistant professors. Overall, 44 (61.1%) & 54 (75%) faculty members had some training in OSCE and OSPE respectively. The factors which were highly prioritized included central administration and management (65%), adequate human resource (64%), recruitment of examiners by the implementing body (61%), development of central OSCE/OSPE bank (60%), trained staff (57%), trained standardized patients (53%), the consensus for appropriate marking (50%), coordinated meetings before start of assessment (47%), closed-circuit television surveillance (26%), equipment provision by the examining body (21%), single venue for OSCE/OSPE conduction (19%), and traveling of students to the desired locations (10%).

**CONCLUSION:** The survey revealed that the central administrative body, training of faculty and staff, development of central OSCE/OSPE bank, and provision of equipment are integral to the implementation of centralized OSCE/OSPE.

**KEY WORDS:** Faculty, Medical (MeSH); Assessment (Non-MeSH); Staff Development (MeSH); Patient Simulation (MeSH).

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design OSCE/OSPE stations, train other faculty members, students and standardized patients, conduct the assessment as examiners and evaluate the whole process.<sup>4</sup> The presence of standardized patients (who may be actual patients or actors/simulators), their training for assessment purposes, and devising standard marking sheets for the examiners is part and parcel of OSCE/OSPE.

Conducting a successful OSCE/OSPE program needs considerable knowledge, skills and practice.<sup>5</sup> Different teams are involved in its preparation and implementation. There are challenges to the successful implementation of OSCE, like time management, examiners shortage, space issues, availability of standardized patients and many others, which need to be addressed to enhance the validity and reliability of this assessment tool.<sup>6</sup> In June 2004, clinical skills step 2 was introduced in the United States as a Medical Licensing Examination (USMLE).<sup>7</sup> The purpose of this form of assessment was to develop an assessment that is more valid and reliable. Although, implementing a centralized practical assessment is a challenging task but is achievable with proper planning ahead of its implementation.

To identify issues and create uniformity, standardization, and reforms in the present OSCE/OSPE practices, it is necessary to bring medical colleges under one umbrella of centralized OSCE/OSPE in our local context. This can be achieved by the main regulating and assessing body (Khyber Medical University), which is

## INTRODUCTION

Objective Structured Clinical Examination (OSCE), introduced by Harden in 1975, is an innovative assessment method that has replaced the traditional assessment methods of the subjective viva. It measures the key components of clinical performance that cannot be tested by traditional methods.<sup>1</sup> Since its inception, OSCE is used in summative and

formative assessments.<sup>2</sup> This method of assessment was later-on introduced in basic sciences disciplines and was named as Objective Structured Practical Examination (OSPE). It usually consists of 15 to 22 stations ranging from history taking from a standardized patient, physical examination, interpretation of an x-ray, laboratory reports, and identification of instruments.<sup>3</sup> The students rotate among all the stations. Teachers and faculty members are required to

**TABLE I: AGE AND GENDER DISTRIBUTION OF STUDY PARTICIPANTS**

Responses		College A (n=20)		College B (n=18)		College C (n=10)		College D (n=24)		Total (n=72)
		Male (n=9)	Female (n=11)	Male (n=5)	Female (n=13)	Male (n=4)	Female (n=6)	Male (n=7)	Female (n=17)	
Age (years)	<30	3	6	2	7	2	3	2	7	32 (44.4%)
	30-50	4	3	2	6	0	3	4	6	28 (38.9%)
	>50	2	2	1	0	2	0	1	4	12 (16.7%)

currently responsible for centralized written assessments on annual basis. This realization had led to the idea of conducting OSCE/OSPE centrally as well, which although is not new, but still required extensive planning. To achieve this objective, it is important to identify the perspectives of teachers and relevant faculty regarding the prioritization of factors for centralized OSCE/OSPE. This may help the policymakers and implementers in appropriately designing, conducting and evaluating this form of assessment. This study was aimed to identify the perceptions of medical faculty of public and private medical colleges from Peshawar, Pakistan towards the introduction of centralized OSCE/OSPE, factors affecting its implementation and challenges towards its introduction.

## METHODS

This cross-sectional descriptive survey following quantitative study design was conducted in four medical colleges (conducting MBBS programs) located in Peshawar from October 2019 to January 2020. Two were private medical institutions while the remaining two were public-sector medical colleges. For confidentiality, the names of the colleges are not mentioned and are labelled as A and B for the private sector, C and D for the public sector. All medical colleges have individual student strengths of 500 each, except one, which has the strength of 1250 students across all the years. A sample size of 100 was calculated using Cochran equation ( $n_0 = Z^2 pq / e^2$ ), keeping alpha error (Z) as 1.96, with a prevalence (p) as 5% and allowable error (e) as 0.1 (10%). The summative assessment in these institutions consists of written and practical components. Practical assessment comprises of OSCEs (in clinical years) and OSPEs (in basic sciences). The study was approved by the Advanced Study Research and Research Board of Khyber Medical University

(DIR/KMU-AS&RB/PF/0009B5 dated 18/9/2019). Ethical approval was granted by Ethical Review Committee of College A. Permission was obtained from other colleges for data collection. Written informed consents from the participants and permission from the respective institutions were taken before the survey questionnaire was distributed. Medical faculty of all specialties including pathology, forensic medicine, community medicine and department of medical education was involved in conducting OSCE/OSPE. Administrative, support staff and students were excluded from this study.

The survey questions were developed and validated following the approaches mentioned in developing questionnaires for educational research: AMEE guide no. 87.<sup>8</sup> The content validity index of an individual item (I-CVI), as well as the scale of overall items (S-CVI), was calculated. A CVI value of <0.5 of any items were omitted from the questionnaire and any item with 0.6 values was reconstructed according to the suggestion/remarks of the experts, and items with a rating of 0.7 and above were considered relevant by the experts for the questionnaire. Pilot testing of the questionnaire was done to ensure both its validity and reliability. Internal consistency was checked by distributing the 19-item questionnaire along with one open-ended question among 20 faculty members who were lecturers, assistant professors and professors of college A who conducted OSCE/OSPE as formative and summative assessments. Cronbach's alpha was found to be 0.78 or above for all items.

The data of participants was entered into SPSS version 22. Some of the variables were re-coded into new variables and relevant information was extracted.<sup>9</sup> Frequency and percentage of responses rate were mentioned through a 3-points Likert scale as "least prioritized, moderately prioritized, and highly prioritized".

## RESULTS

After piloting, the reliable and validated questionnaire was sent to 100 faculty members belonging to four medical colleges, where 72 participants responded. Thirty-eight participants belonged to private sector medical colleges and were of less than 50 years of age, 35 participants were working as demonstrators and 30 as assistant professors. Out of 72 participants, 32 (44.4%) were aging <30 years, 28 (38.9%) were from 30-50 years age group and 12 (16.7%) were 50 years of age (Table I).

Majority (n=19; 26.4%) of faculty were from Pathology department, followed by Community Medicine (n=18, 25%) and Physiology (n=10; 13.9%) departments (Table II). Overall, 44 (61.1%) faculty members had some training in OSCE and 54 (75%) had received training in OSPE (Table III)

Figure 1, 2 and 3 show factors based on the level of prioritization (highly prioritized; >59%, moderately prioritized; 30-59%, and least prioritized; <30%) respectively. Figure 4 shows the themes identified according to the responses of participants to an open-ended question, where participants were asked to list any 3 to 5 issues concerning the implementation of OSCE/OSPE in medical colleges where they are currently working.

## DISCUSSION

Assessment of clinical skills has a central role in medical education and the selection of suitable methods has been a matter of permanent concern for clinical teachers and medical educators.<sup>10</sup> Developing high-quality clinical skills assessments often require considerable resources. There are challenges associated with implementing performance-based assessments in environments where human resources, physical space, funds, and technology are limited.<sup>11,12</sup> OSCE/OSPE is considered a standard tool for assessing wide variety of clinical/

**TABLE II: SPECIALTIES DISTRIBUTION OF STUDY PARTICIPANTS**

Specialties	College A	College B	College C	College D	Total
Medical Education	2 (10.5%)	2 (10.5%)	0 (0%)	1 (4.2%)	5 (7%)
Community Medicine	4 (21.1%)	3 (15.8%)	4 (40%)	7 (29.2%)	18 (25%)
Pathology	4 (21.1%)	3 (15.8%)	4 (40%)	8 (33.3%)	19 (26.4%)
Medicine	1 (5.3%)	3 (15.8%)	0 (0%)	2 (8.3%)	6 (8.3%)
Physiology	4 (21.1%)	2 (10.5%)	2 (20%)	2 (8.3%)	10 (13.9%)
Biochemistry	2 (10.5%)	3 (15.8%)	0 (0%)	1 (4.2%)	6 (8.3%)
Surgery	2 (10.5%)	3 (15.8%)	0 (0%)	3 (12.5%)	8 (11.1%)
<b>Total</b>	<b>19</b>	<b>19</b>	<b>10</b>	<b>24</b>	<b>72</b>

practical skills, which helps in creating confidence among young doctors when they apply these skills in future practice.<sup>5</sup>

This study was carried out to explore the perceptions of medical faculty about the factors which they believe will have a paramount effect upon introducing OSCE/OSPE as centralized assessment in a pattern similar to written assessment under control of one central body.

The study revealed that 67% of the participants were conducting OSCE/OSPE in their institutions without having any proper training in assessments and marking schemes. This study also revealed that the majority (64%) of our medical faculty including both junior and senior, believed in having adequate human resources as an essential factor for consideration before implementing centralized OSCE/OSPE. A similar study conducted in the Middle Eastern context revealed three types of challenges which included factors related to assessment, standardized patients and quality of assessors.<sup>11</sup> The survey revealed that 32% of faculty had no experience in organizing, conducting and developing OSCE/OSPE stations. It was suggested by the participants, that all faculty members taking part in OSCE/OSPE conduction should undergo proper training in the form of formal workshops and courses. It was suggested in another study published in BMC journal in 2019 that showed that a 5-

month course of pre-OSCE rehearsal was carried out and routine participation of multiple assessors, standardized patients and administrative staff for training purposes was made mandatory.<sup>12</sup>

Studies depict OSCE/OSPE as a valid and reliable tool for assessing student's clinical competencies in a wide range of skill.<sup>9,12</sup> For this form of assessment, it needs to be acceptable by all the institutes. The survey revealed that acceptance in terms of central OSCE/OSPE bank, central monitoring by the assessing university, and provision of standard stations as per university guidelines was acceptable and highly prioritized by most of the participants as mentioned in a similar study.<sup>11</sup> Training of standardized patients is an integral part of mainstream medical and health care education and will likely play an even greater role in the near future. This survey revealed that most of the participants did not emphasize over regular training and recruitment of standardized patients and examiners. One of the reasons for this is the rapid changeover of the faculty job placements and ignorance considering the importance of standardization. This was contrary to a study carried out in Indonesia, where the need for standardized patient recruitment and training was given high priority.<sup>13</sup>

Finances play a pivotal role in running a successful OSCE/OSPE. To develop a

pool of examiners and standardized patients, controlled by the central examining body, will require finances for its execution. The survey revealed that participants were doubtful in prioritizing the financial control by the assessing body, and there seemed to be a lack of awareness among them about the effort behind the exercise of developing, training, and running of centralized OSCE/OSPE. In terms of feasibility of venue, transportation of students, examiners, and maintaining confidentiality of assessment material for OSCE/OSPE to designated areas is very challenging. Besides this, prioritizing the factor of single /multiple venues for OSCE/OSPE was also least prioritized by the participants.<sup>14</sup>

The themes identified during the responses to open-ended questions follow the same, emphasizing mostly the importance of human resources during conducting this form of assessment.<sup>15</sup>

This study revealed the already existing problems in medical colleges related to the execution of practical assessments. It explored the knowledge, ideas, and concerns of senior and junior medical faculty about the future introduction and implementation of centralized OSCE/OSPE.

One of the weaknesses of the study is, that faculty perceptions limited to one city are included. Large scale studies involving more faculty belonging to the medical colleges of remote areas in the province and other parts of the country are needed to explore further challenges. It would have been ideal to have a holistic approach to all medical institutes of Khyber Pakhtunkhwa which are affiliated with Khyber Medical College, Peshawar, Pakistan. It would have given an insight into a larger population of medical faculty about prioritizing the factors identified for introducing centra-

**TABLE III: BASIC TRAINING AND EXPERIENCE OF OSCE/OSPE OF PARTICIPANTS**

Basic questions for participants	Total (n=72)	
	Yes	No
Training in OSCE	44 (61.1%)	28 (38.9%)
Training in OSPE	54 (75%)	18 (25%)
Experience of arranging OSCE	36 (50%)	36 (50%)
Experience of arranging OSPE	51 (70.8%)	21 (29.2%)
Experience as trainers of other faculty and standardized patients	34 (47.2%)	38 (52.8%)
Experience of OSCE conduction	60 (83.3%)	12 (16.7%)
Experience of OSPE conduction	53 (73.6%)	19 (26.4%)

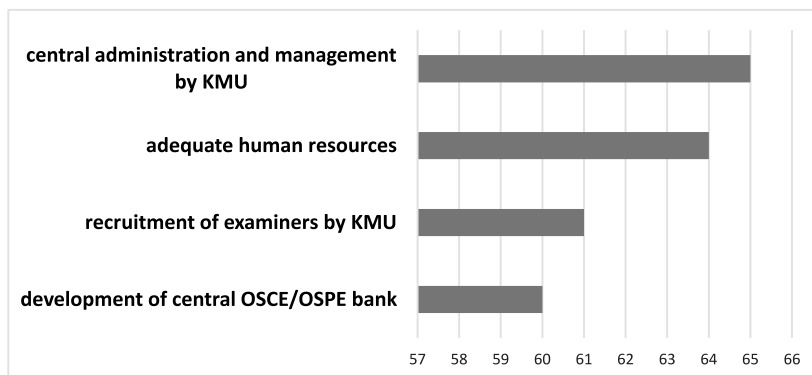


Figure 1: Factors based on the level of prioritization (highly prioritized; >59%)

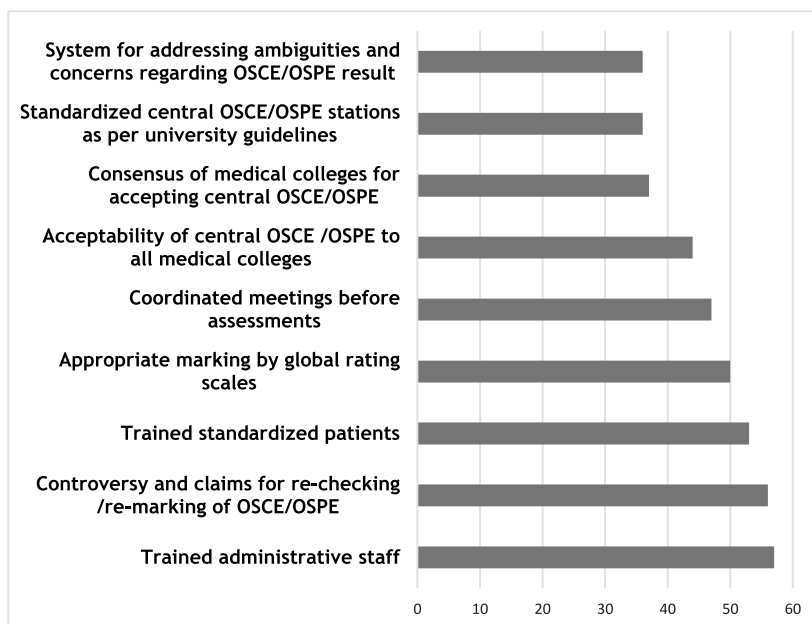


Figure 2: Factors moderately prioritized by participants (30-59%)

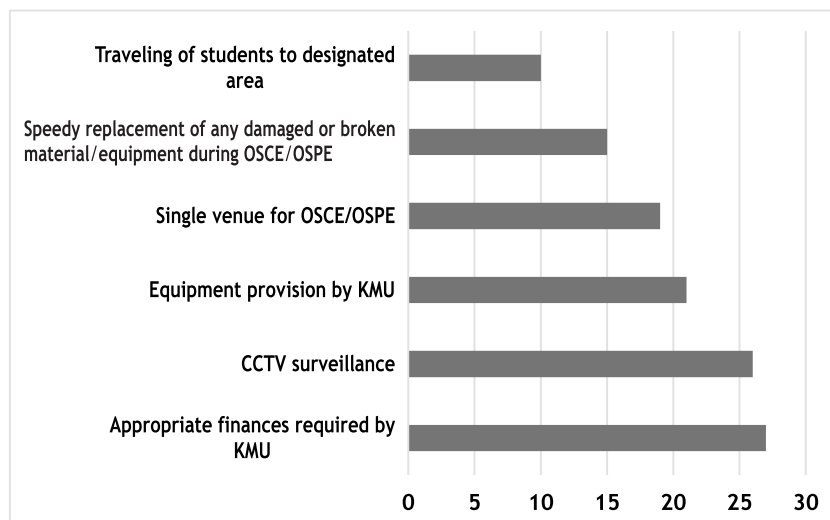


Figure 3: Factors least prioritized by the participants (< 30%)

lized OSCE/OSPE. Similarly, studies are needed after the implementation of this form of assessment to identify the challenges afterward.

## CONCLUSION

The survey revealed that training of faculty and staff, and provision of equipment are central to the implementation of centralized OSCE/OSPE. To improve the system of assessments and introduce centralized OSCE/OSPE, pertinent suggestions like continuous faculty training, regular feedback from the administrative staff, faculty members, standardized patients, examiners and examinees are crucial to making improvements and this can be done through coordinated efforts between the assessing body and different institutes. Uniform consensus among medical colleges for accepting centralized OSCE/OSPE should be developed before implementation.

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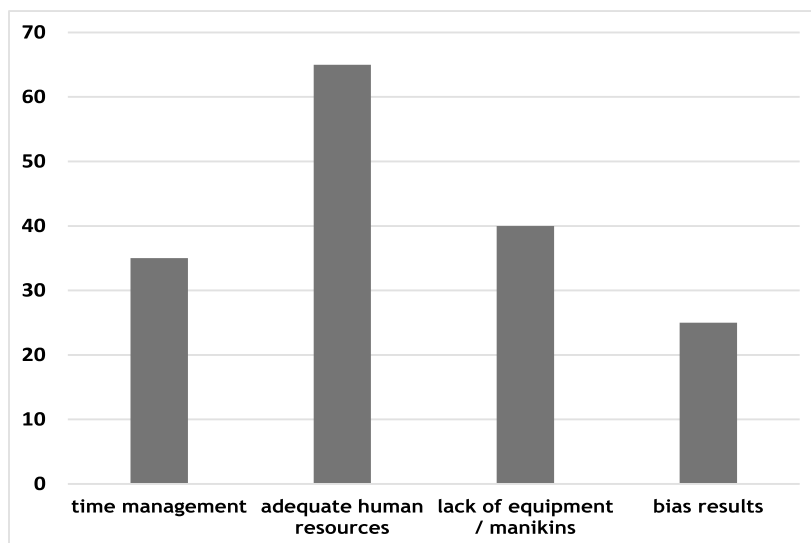


Figure 4: Themes identified after analysis of open-ended questions

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## AUTHOR'S CONTRIBUTION

Following authors have made substantial contributions to the manuscript as under:

**LK:** Conception and study design, Acquisition of data, drafting the manuscript, approval of final version to be published

**UM:** Conception and study design, critical review, approval of final version to be published

**FA:** Acquisition, analysis and interpretation of data, drafting the manuscript, critical review, approval of final version to be published

*Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.*

## CONFLICT OF INTEREST

Authors declared no conflict of interest

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## DATA SHARING STATEMENT

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.



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