

Physician Associate Students' Perspectives of the Objective Structured Clinical Examination (OSCE), as a Form of Assessment

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ABSTRACT

Introduction: Despite significant evidence recognizing the Objective Structured Clinical Examination (OSCE) as a useful form of assessment of clinical skills, there is a paucity of literature investigating Physician Associate (PA) student's perspectives of the OSCE as a form of assessment of clinical skills. The purpose of this qualitative study is to investigate how PA students perceive the OSCE as a form of assessment of clinical skills.

Method: A pilot study was conducted prior to this current study to test the research methods in use. Data was gathered through online surveys and focus groups. Adopting the approach of interpretive hermeneutic phenomenology, data was analysed using an inductive approach to thematic analysis. First and second year postgraduate PA students from a University in the North West of England, UK, took part in this study.

Results: Students perceived the OSCE as a stressful form of assessment. They felt the need for more simulation classes and increased access to a practice environment. Students stressed the importance of feedback after the OSCE.

Conclusion: The OSCE was valued by PA students as a tool to assess clinical competencies in a simulated environment. Further studies are required to facilitate a comparative discussion and to assist further development of the OSCE process for PA education and training.

Keywords: Objective structured clinical examination; Physician associate; Assessment; Postgraduate; Student

Introduction

Patients' needs are rapidly changing, and with that, the world of healthcare is changing [1]. The public are suffering from a greater number of illnesses and comorbidities than ever before which means patient care now involves healthcare professionals being competent in carrying out more multifaceted clinical skills [2]. It is essential that healthcare students are educated and assessed appropriately on the required clinical skills of their profession for patients to receive safe, compassionate, holistic and evidence-based care from competent professionals. Assessment of these skills is a complex and challenging task for faculty of healthcare students [3].

The Physician Associate (PA) is an emerging clinical role within the United Kingdom (UK). PAs are medically trained, generalist healthcare

professionals, who work in conjunction with doctors and deliver medical care as an essential part of the multidisciplinary team. To qualify as a PA, one must have an honours degree in a health or life sciences related subject, before undertaking a two-year Postgraduate Diploma in Physician Associate Studies, which is divided between theory and clinical practice. Following the university programme, graduates must undertake and pass the UK PA national examination [1].

The Objective Structured Clinical Examination (OSCE) is a method of assessment which involves clinical simulation and is regularly used to assess clinical competencies of healthcare students such as nursing, medical, dental and physiotherapy students [4]. The OSCE usually involves students rotating through several stations, where a different clinical skill

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is assessed at each station. Simulated patients are usually included in this process to improve authenticity. Examiners mark students through the use of a checklist, with set marks allocated to each item on the list [5]. By scrutinizing this complex assessment approach from a students' perspective, possible developments can be made to enhance curriculum development and student learning and satisfaction [6].

For the purpose of this research, the OSCE is defined as "An approach to the assessment of clinical competence in which the components of competence are assessed in a well-planned or structured way with attention being paid to objectivity" [7]. This is the first study that the author is aware of that specifically explored physician associate student's perceptions of the OSCE. It therefore, provides a valuable insight into the OSCE from the perspective of this specialized group of students.

The purpose of this study is to investigate the following research question: How do physician associate students perceive the OSCE as a form of assessment of clinical skills?

The aims of this study are:

- To investigate physician associate students' perspectives on the OSCE as a form of assessment of clinical skills in postgraduate education
- To assess whether their level of confidence regarding examined clinical skills change during or after the OSCE
- To investigate physician associate students' thoughts and views regarding feedback after the examination

Methods

The approach of interpretive hermeneutic phenomenology was adopted for the qualitative study. This approach was chosen as it aids in understanding PA students' lived experiences of the OSCE process. Inherent in this method is the belief that interpretations is all a researcher has and, that providing a description, is an interpretive process. To produce the greatest interpretation of a phenomenon Kafle (2011) recommends using the hermeneutic cycle [8].

A pilot study investigating second year physician associate student's perceptions of the OSCE was carried out in April 2018, to allow the researcher to gain confidence in facilitating focus groups

while eliminating researcher bias, and to improve to reliability and validity of the online survey, by assessing how clear the questions were for participants to understand. Data was gathered for this current study using non-probability, purposive sampling to specifically recruit PA students [9]. There were 53 first year students and 51 second year students. All students were given an equal opportunity to partake. Seven first year students and seven second year students took part in the focus groups. The online surveys were sent to all students *via* email.

■ Focus groups

Two focus groups were voice recorded and then transcribed verbatim by the researcher. One group included first year students, and one group included second year students. There were seven students in each group which was sufficient to generate deep conversations and emerging ideas, opinions and themes [10].

■ Online survey

Questions used for the online survey were an adapted form of questions used by Brosnan et al. [11]. The author granted permission for these questions to be used for this study. These authors pilot tested this questionnaire to improve reliability.

■ Data analysis

An inductive approach to thematic analysis was adopted as it encourages the researcher to immerse themselves in the data by 'dwelling' in the language of the participants [12]. Responses from online surveys and focus groups were combined and an inductive thematic analysis was performed by the researcher using a hybrid model of emergent and template coding [13]. This model was chosen as it is not linked to a specific epistemological or theoretical perspective making it a very flexible method to use.

■ Ethical considerations

Ethical approval was granted by the Research Ethics Committee of the University with no ethical implications.

Results

The themes include:

- Preparation for the OSCE
- Stress and anxiety
- Preparation for practice.

■ Preparation for the OSCE

Students regularly commented on the guidance and practice they received in preparation for the OSCE and how this affected their overall experience of the OSCE. A first-year student stated:

"I spent so much time preparing for it (the OSCE) myself, but there is only so much you can do at home or in the library."

Two sub-themes developed from this theme. These are: simulation classes; and access to a practice environment.

Simulation classes: Students felt that simulation classes impacted on how prepared they felt for the exam and also affected their results from the OSCE, either negatively or positively.

"The simulation classes were good, but I was taught how to take a blood sample using one brand of equipment and in the OSCE, there were two different brands. This threw me off completely".

Students commented on the amount of simulation classes they had, and how this affected their readiness for the OSCE.

"More simulation classes or a series of mock OSCE's would have been helpful".

"I was preparing at home, watching YouTube videos. I would have gone to more simulation classes if they were available".

Access to a Practice Environment (PE): Students in the second year focus group discussions felt strongly about the lack of access they had to a PE.

"Up until recently, PA students did not have access to a practice area. It was only available for medical students. I think this is really unfair."

"If we had access to the practice area, I would have felt more prepared for the OSCE"

First year students had a different view regarding access to the PE, as they had received access during their first year.

"The practice area was good to rehearse clinical skills. I only used it twice but next year I will use it more to".

"I liked the practice area but coming up to OSCE's it was too busy. It would be better to use it during the year when it is quieter".

It was obvious from the data that students valued

being well-prepared for the OSCE, and felt simulation classes and self-preparation, had an impact on their experience of the OSCE.

■ Stress and Anxiety

Stress and anxiety, was the most obvious theme when analyzing the data. There were numerous aspects of the OSCE, which students noted, had an impact on the stress they experienced before, during and after the examination. One first year PA stated:

"It's more stressful than any other exams".

It was obvious that the OSCE was causing a significant amount of stress on the students, however, many over half of the students valued the OSCE as a form of assessment despite finding it stressful. Two subthemes emerged within this theme. These were: The OSCE environment; and ambiguity and uncertainty.

The OSCE environment: The OSCE environment included the space within stations, location of stations, equipment available and noise in the environment.

"Extremely stressful exam! Could hear the person doing my previous station asking the patient questions I forgot to ask".

"It's too noisy and distracting. I kept losing my trail of thought and then panicking".

Students also remarked on the space within the stations and how that added to their stress.

"It was worrying because there was no space to do the examination properly."

"The phlebotomy station was so cluttered with no space to leave the sharps tray down safely. I got stressed and forgot the flush the line".

Students also noted aspects such as the presence of the examiner causing them stress.

"The space was so small; I could hear the examiner sigh. Then I thought I was doing the exam wrong. It was so stressful."

Students also mentioned the timing of the stations and the tasks within the OSCE, and how this increased their level of stress.

"Some stations have too much time, others, do not have enough. It is stressful when you're left with time because your thinking- did I forget to say something."

Ambiguity and uncertainty: Students regularly identified doubt and uncertainty regarding what

examiners expected of them. This was strongly noted among second year participants, where students reported differences in expectations of examiners, who marked in identical stations. It appeared particularly common in the stations regarding 'breaking bad news and 'psychiatric assessment.' Overall, students found that they were unsure of what assessors expected.

"My examiner told me after the exam that we should never mention the word cancer when breaking bad news, our tutors always told us we should say the word to ensure the patient knows. So, who is right?" This comment was particularly alarming, as it reveals that the marking scheme lacked specific criteria as to how the student should complete the task.

The theme of stress was obvious to the researcher during the initial phase of data analysis and was the most evident theme among the data collected.

■ Preparation for practice

There was an assortment of comments regarding whether the OSCE was preparing students for their role in the clinical environment.

Two subthemes arose which were encapsulated within the theme of preparation for practice. These are: authenticity of the OSCE; and feedback.

Authenticity of the OSCE: Students reported on how realistic the OSCE was and how it prepared them for practice. Students recognized the difficulties in making the OSCE environment realistic. Authenticity of the OSCE related to the environment, the tasks they were asked to complete and the simulated patient. Second year students appeared more concerned with the authenticity of the OSCE than first year students. Comments from focus groups and surveys included:

"The whole exam feels very fake and forced. It isn't like clinical practice at all".

"The tasks are like tasks we do in practice, so that part is realistic. Sometimes, the simulated patients are not very interactive which is difficult when we have to do an assessment in 8 minutes".

"They make the environment as realistic as possible. I still think it would be better to be assessed in practice".

Overall, most students felt that the OSCE was authentic and that it prepared them for clinical

practice to some extent. Many students did feel that the clinical environment would be the ideal place for examining clinical skills, however, they did recognize the difficulties with this in relation to patient safety as well as lack of objectivity for the exam.

Feedback: Students felt strongly about the feedback they received after the OSCE's. A minority of students reported receiving little or no feedback at all.

"Most of the feedback was constructive on how I should improve for future practice."

"The feedback was subjective. I was told that I was "too relaxed" twice and didn't get much more detail than that. That doesn't help me for the future."

"The feedback wasn't very helpful or detailed. Some of my feedback sheets just said well done."

Generally, there was mixed responses regarding feedback and how it aided students in preparing for clinical practice, however, most students stressed that although they considered feedback an important and essential element of their learning and development, they did not feel that the feedback they received was constructive and helpful in preparing them for clinical practice. It is important to note that students perspectives on the quality of their feedback may only be applicable to this particular institution, however, how students value feedback and their opinions on the format of feedback can be more generalizable among all PA students.

Discussion

■ Preparation for the OSCE

Most participants stressed the need for more simulation classes to prepare them sufficiently for the exam. However, many participants did note that the simulation classes they did receive were of good quality, high standard and helpful. At a postgraduate level, it is often assumed that the onus is on the student to practice, gain experience and self-reflect. Students should be engaging in andragogy and self-directed learning, which is developed throughout undergraduate studies [14]. With the wide range of tasks and procedures to be covered by PA students within these simulation classes, it may only be possible to cover each topic once in simulation classes, with the expectation that students will then develop their understanding and confidence in

these tasks through self-directed practice and their hours in clinical placements.

These findings are similar to that of El-Nasser et al. who reported that less than half of participants felt prepared for the OSCE [15]. Alinier also found that students did not feel prepared for the OSCE despite having a practice session one week prior to the exam [16]. This author argued the significance of satisfactory preparation, with an emphasis on simulation. This author recommends that no assumptions should be made to a students' prior knowledge or understanding of simulation. Therefore, although students in the PA programme have all completed an undergraduate degree in a health or science subject, it should not be assumed that any of these students have experienced an OSCE prior to this.

Brosnan et al. reported that most students felt well prepared for the OSCE. Students in this study were allocated supervised and unsupervised practice time along with the OSCE scenarios and marking sheets two weeks prior to the exam, which allows students time to concentrate on the specific tasks they will be examined on, and in turn, enhance their feelings of readiness for the exam [11].

Students had differing opinions in relation to the access they had to an environment to practice clinical skills and how this related to their preparation for the OSCE. Second year students felt that they were not offered an area to practice simulated clinical skills. Many reported that the lack of access to the PE meant that they were unprepared for the OSCE and not supported in their preparation. Some students stated that they used online videos to prepare while others discussed tasks with their peers, talking through an examination or procedure step by step.

First year students, on the other hand, felt that the PE, was extremely helpful in preparing them for their OSCE and gaining confidence in clinical skills. However, 2 participants noted that this area was often too busy during times of examinations. Mostly, students felt that this was a valuable and beneficial service; however, it is the students' responsibility to attend the area in their free time and to practice clinical skills throughout the academic year and not just in the lead up to exams.

Overall, students did not feel that they were appropriately prepared for the OSCE due to a limited number of simulation classes and lack of

access to the PE. Participants also noted that they were not equipped by lecturers on how to use some brands of equipment which were on offer to them during the OSCE. It is important to note that students rarely commented on feeling unprepared for the format and environment of the OSCE, but felt they were not prepared for the tasks they were expected to complete. The PA programme could implement supplementary mock or practice OSCE sessions to allow students to practice skills, to improve their perceived readiness for the OSCE. Furthermore, the tutors could initiate giving student's checklists on how they are expected to complete specific tasks, to support them in their personal practice and give them an understanding of expectations.

■ Stress and Anxiety

A prominent and expected theme, found through interpretation of data, was stress and anxiety experienced by the student in relation to the OSCE. Regardless of healthcare discipline, stress and anxiety, related to the OSCE, are constantly reported in the literature.

Students found the OSCE environments to be particularly stressful. Many students reported that they had a lack of space between the stations which added to the stress they experienced. These students underwent OSCE's in a room, with screens dividing the stations. 67% of students in the online surveys remarked on the noise during the OSCE and the distraction it instigated by hearing the person in the next station.

Participants reported that often, the stations were small and cluttered which added to their stress. Furlong et al. also found, students often reported that the OSCE environment was claustrophobic, and this contributed to them making mistakes, adding to their stress [17]. Boursicot and Roberts suggests that when organizing an OSCE, it is ideal to conduct each station in a separate room to diminish the impact of noise, however, if this is not possible, OSCE's should be conducted in a large hall, divided by soundproofed partitions [18]. Conducting the OSCE in a large hall or individual rooms could also increase the space within the station, thus, reducing stress levels. It is worth considering how leading the OSCE's in individual sound-proofed rooms, may diminish the realism of the OSCE and how authentic it would be clinical practice.

There were varied responses from students relative to the timing of the stations. Some students felt that they had enough time (8 minutes) for most

tasks; however, they often had time left over which added to their stress. The results of this current study are similar to those of El-Nasser et al., Elfaki and Al-Humayed and Idris et al. who also had mixed responses in related to the timing of stations [15,19,20]. The difficulties students experienced in managing their time at the stations during the OSCE could be related to a variety of factors such as the students' immaturity or lack of experience and training in managing their time in the clinical environment, as well as lack of practice in completing certain tasks. Appropriate access to a practice environment or an increase in simulation classes, could have improved the time management of students.

Some students experienced confusion and stress at the station of procedural tasks, where there was more than one brand of equipment available to use. For these students, both the 'Monovette' and 'Vacutainer' venipuncture sets were available during the OSCE. The aim of this is to reduce student stress by giving them a choice to use the equipment they are comfortable with. However, students reported that this caused them more stress. Students in a study by Fidment were also in agreement with this, describing that the equipment and the environment was not as they expected it to be, which caused them further anxiety [21].

Furlong et al. found that 88% of postgraduate oncology nursing students agreed that the OSCE was a stressful experience, with 50% of students stating that the OSCE provoked more stress than any other method of examination [17]. The majority of students in a study by Mårtensson and Löfmark found the OSCE stressful but meaningful as they related to the skills they are expected to complete in practice [22]. Similar to this, Pierre et al. and Brosnan et al. reported that the majority of participants agreed that the OSCE was a stressful experience, while 82% of midwifery students in a study by Muldoon et al. agreed that the OSCE was stressful [11,23,24]. These findings compare favorably to the findings of this present student where stress emerged as a prominent theme.

Fidment found that even if students had experienced the OSCE process before, there is still anxiety about the assessment [21]. Similarly, Brand and Schoonheim-Klein reported that there was no significant difference between stress levels in students taking the OSCE for the first time and those who had previous experience with the OSCE [25]. Therefore, it cannot be concluded

or assumed that these postgraduate PA students should experience less stress than undergraduate students, due to their previous experience with the OSCE. It is clear, that stress and anxiety are a major theme in students' perceptions of the OSCE, and however, steps can be taken to reduce stress levels once the causative factors such as noise, space and equipment have been identified.

■ Preparation for Practice

The final emerging theme from the analysis of data was how well students felt the OSCE prepared them for their clinical role. This theme explored how realistic and authentic the OSCE was. Participants mentioned how the OSCE helped them gain confidence in clinical skills. Students also commented on the quality of the feedback they received, the timeframe they received it in, and how the feedback aided their development.

By replacing real patients with standardized patients, there is a risk of making the encounter artificial. The veracity of an OSCE station will rely on minimizing the differences between simulated and real situations, in terms of auditory, visual and tactile cues. Most students found that the OSCE environment was authentic to real life situations and that the standardized patients were effective in improving the realism of the station. A small minority of students did not feel that the OSCE was realistic; however, all students recognized the difficulties staff faces in making the situation realistic. The idyllic setting for a practical assessment is within the clinical area nevertheless, there are issues with patient safety and subjectivity of examinations [26]. For this OSCE, professional actors were employed as simulated patients and were thoroughly briefed on their roles as the patients. The OSCE took place in a hospital in a mock ward environment. This environment added to the authenticity for these PA students. Many other studies use lecturers or other students, who are known to the examinees, as simulated patients which affects the reality of the assessment, making the environment unnatural and uncomfortable for students.

Students noted an increase in confidence after the OSCE. Participants agreed that the tasks they were examined on were relevant to tasks they would complete in practice. Participants were not aware of the tasks they would be asked to complete until they approached the station. This uncertainty around the tasks meant that

students had to prepare for all possible skills and scenarios, which, over time, could aid in building their confidence. These findings are corroborated in the literature. Students in a study by Alinier noted that the OSCE helped them in developing their confidence and they believe it should be arranged more regularly while, Jo and An reported that participants experienced an increase in confidence as a result of the OSCE [16,27]. Students in a study by Brosnan et al. felt more prepared and confident for their clinical placements after undertaking the OSCE [11]. It is essential that students feel they are developing confidence through the OSCE, as for any examination to be successful; students must value the examination for both assessment and learning.

Feedback on OSCE performance is a crucial element of the assessment process with prompt or immediate feedback found to be most valuable [28]. Students recognized that feedback was essential to guide them through reflection and aid them in developing their clinical skills for professional practice. Most students did not feel that the feedback they received was sufficient to aid them in preparation for clinical practice.

Muldoon et al. found that most participants valued feedback on their OSCE performance, finding it beneficial for developing their knowledge and skills [24]. This author also found that a deficiency of applicable and timely feedback can reduce student learning experiences and decrease the significance of the OSCE for clinical practice. Mårtensson and Löfmark, found that most students were satisfied with the feedback which they received immediately after completing the station [22]. These results show that students value the benefits of effective and prompt feedback. The students in this study are not in agreement with most other studies regarding feedback after the OSCE. However, students did mention that many weeks passed after the assessment before they received their feedback, at which stage, they had difficulties in recalling their performance. It is crucial that educationalists guide and support learners by providing them with feedback after assessments [29]. This provision of feedback should be done in a timely fashion. Providing feedback in a timely fashion has significant logistic implications for the designers of the OSCE's in this institution, who now need to contemplate and implement suitable time-frames and arrangements to provide students with timely feedback on their OSCE performance.

Limitations

PA students are a specialized group of students and this may cause issues of transferability with these findings to other groups of students taking the OSCE. This study was conducted at a single UK university. As such, its generalizability to physician associate programmes in other universities is limited, as these results are based on how this university runs their OSCE. Purposive sampling technique used in this current study makes it impossible to make statistical generalizations about the population being studied. Furthermore, data was collected from students some months after the OSCE. Student's recall of the OSCE may have faded during this time.

Recommendations

It is important for higher education institutions and assessors, to be aware of the ways in which students perceive and experience any form of examination, to develop the best learning and development opportunities for these students. It is anticipated that other educationalists may learn from these findings and consider students perceptions of the OSCE when developing an OSCE. The present findings, add new knowledge to the literature, as, physician associate student's experiences of the OSCE had yet to be investigated. Further similar studies within PA students are required to facilitate a comparative discussion and to assist further development of the OSCE process for PA education.

Conclusion

The OSCE was appreciated by both first and second year physician associate students, as a tool to assess clinical competencies in a simulated environment. Students believed that more simulation classes and increased access to a simulated practice environment would ease the stress and anxiety that they experienced in the run up and throughout the OSCE.

It may be concluded that most students appreciate the OSCE as an assessment of their competence of clinical skills. Nevertheless, there is a need for careful preparation and organization of the OSCE. The study further highlighted the fact that more extensive training of students on self-preparation, time management and relief of stress is necessary during the implementation of the OSCE, as well as the need for prompt feedback to students [30].

Finally, the aim of this study was to investigate PA students' perspectives on the OSCE as a form of assessment of clinical skills in postgraduate education. This study has identified that a larger study is needed to establish the effectiveness of OSCE's and student's perceptions of the OSCE's within the PA programme. The findings from this study showed resemblance with the narrow amount of literature and demonstrated that PA students do not perceive the OSCE differently to other students on healthcare programmes. Further research is now vital to support these results further.

Declaration of Interest

The authors report no declarations of interest.

■ Practice Points

- Students value the OSCE as a form of assessment; however, find it more stressful than other examinations

- Students appreciate prompt feedback after the OSCE
- Participants noted an increase in confidence resulting from the OSCE

■ Notes on Contributors

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David Taylor has many years' experience in health professions education, and has been involved in the design, delivery and development of assessment in several institutions. Formerly working at the University of Liverpool, David is now Professor of Medical Education at Gulf at Medical University in the United Arab Emirates.

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