

Main article

Assessment of clinical nurse specialists in rheumatology using an OSCE

Sarah Ryan RGN PhD MSc FRCN¹, Kay Stevenson MPhil Grad Dip Phys SRP MCSP¹ and Andrew B Hassell FRCP MD MMedEd¹

¹Staffordshire Rheumatology Centre, Stoke on Trent, UK

Abstract

Objective: To introduce a new method of assessment; an observed structured clinical examination (OSCE) into a postgraduate course for rheumatology clinical nurse specialists.

Method: The OSCE was introduced into a physical assessment module, which focused on the nurses' ability to perform an examination of patients' shoulders, knees and hands. A modified blueprinting exercise was used to ensure adequate sampling of the different components of the syllabus. This resulted in five active stations and one rest station. The active stations included history-taking, physical examination of the shoulder, knee and hand complexes and multidisciplinary management plans. To enhance authenticity real, rather than simulated, patients were used where practical.

Results: All 11 students passed all stations, the lowest score related to history-taking and the highest score related to devising a management plan. All 11 students rated the OSCE a worthwhile experience reflecting the learning outcomes of the module and recommended that the OSCE should be used to assess the next cohort of students. Eight students found the OSCE too 'anxiety-provoking' and did not want this method of assessment to be used in other modules. All examiners felt this mode of assessment was more valid than the previous assessment format of a viva on a single patient.

Conclusion: This was the first time an OSCE was used in a postgraduate course to assess the physical examination skills of rheumatology nurse specialists. The course faculty, examiners and students found it was a reliable and valid means of assessment.

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Key words: assessment, clinical nurse specialists, OSCE, postgraduate

Introduction

The development of rheumatology nursing has resulted in an increasing number of senior clinical nurses attending postgraduate course to develop their clinical skills to equate with the needs of their role. Carr (2001) demonstrated that many rheumatology nurses were involved in carrying out joint assessments and sought to undertake further education to develop their skills in clinical examination. Traditionally, the acquisition of new skills in nursing has been assessed through written forms of evaluation, including assignments and portfolios. Yet such traditional approaches to assessment may not be the most appropriate means of assessing clinical skills.

In 2001 we developed a Masters degree in Rheumatology Nursing with the aim of equipping rheumatology nurses with the skills and knowledge to extend their practice in keeping with extended roles (DoH, 1999). One module, particularly popular with students, aims to provide nurses with the skills and knowledge required to undertake a regional musculoskeletal examination, often leading to a diagnosis and management plan. Initially, the assessment for this module was two-fold: a written assignment to assess aspects of participants' understanding of the area and a clinical examination to assess their examination, problem-solving and management skills. The clinical examination took the form of a 45-minute unobserved consultation with a volunteer patient followed by a 30-minute *viva voce* examination of the candidate by two members of faculty, including demonstration of physical signs by the candidate at the bedside. The limitations of this assessment were that it sampled only a limited component of the candidate's skills and it was difficult to create similar levels of patient complexity as several patients were used. Consequently, performance was dependent on the patient seen and most of the candidate's consultation with the patient was unobserved. It was therefore decided to change the assessment to an objective structured clinical examination (OSCE) format.

The use of OSCEs has been shown to be an effective means of assessing pre-graduate nursing students' clinical skills and clinical reasoning abilities in neurological examination (Ross et al., 1988), physical examination (Khattab and Rawlings, 2001) and in mental health (Major, 2005). This is the first time that an OSCE has been used in a postgraduate course for rheumatology nurse specialists. In the present paper we present a description of the OSCE design process and content, the results of an examination on a cohort of 11 Masters degree students and the attitudes of those students to the OSCE.

Method

OSCE design

The overall design of the OSCE was achieved at a meeting of the five clinicians responsible for teaching the module. The module is a small (15M-level credits) module which focuses on assessment of patients' shoulders, knees and hands only. A modified blueprinting exercise was used to ensure adequate sampling of the different components of the syllabus for that module (Table 1). A pragmatic decision was made that the OSCE should be five stations, each of 10 minutes' duration. It was felt that this allowed adequate sampling of skills and was realistic in terms of available space and the number of examiners. The examination team consisted of two examiners who were medically trained, a consultant nurse, a consultant physiotherapist and a lecturer in physiotherapy.

The five OSCE stations included history-taking, physical examination of the shoulder, knee and hand complexes, and multidisciplinary management plans. One rest station was built into the schedule. The stations involved the use of patients, a paper case and a normal subject (Table 2). For authenticity, real, rather than

TABLE 1. Blueprint for the objective structured clinical examination (OSCE)

| | Skill component | Skill component | Skill component | Skill component |
|----------|--|--|--|---|
| | Take a history | Perform a regional examination | Formulate a diagnosis | Develop a management plan |
| Hand | – | Hand examination in a patient with RA or OA | Necessary for hand examination station | – |
| Shoulder | Take a history from a patient with intractable shoulder pain secondary to RA | Shoulder examination – simulated patient with no shoulder pathology to allow the student to demonstrate full examination of the shoulder | Necessary for shoulder history station | Management plan for the patient for whom the history had been taken |
| Knee | – | Knee examination in someone with synovitis | Necessary for knee examination station | – |

RA = rheumatoid arthritis; OA = osteoarthritis.

| Station | Topic area | Lead clinician | Style of station |
|---------|---|----------------------------|---|
| 1 | History-taking of a patient with RA awaiting a shoulder replacement | Consultant rheumatologist | Patient with RA needing a shoulder replacement |
| 2 | Management plan arising from the clinical history-taking at Station 1 | Consultant nurse | Presenting the management plan from the clinical history taken at Station 1 |
| 3 | Physical examination of the knee complex | Consultant rheumatologist | Patient with RA with secondary OA in the knee |
| 4 | Physical examination of the hand complex | Lecturer in physiotherapy | Patient with hand synovitis with RA or OA |
| 5 | Physical examination of the shoulder complex | Consultant physiotherapist | Simulated patient with normal shoulder movements |

RA = rheumatoid arthritis; OA = osteoarthritis.

simulated, patients were included where practical. A global scoring system was adopted, similar to that used in examining medical students at Keele University (Figure 1).

Student evaluation

Eleven candidates who participated in the physical assessment module undertook the OSCE examination. The candidates were asked to evaluate their experience through a questionnaire administered two months after undertaking the OSCE. The questionnaire contained 19 statements relating to the appropriateness of assessment and the student's experience. Students were asked to respond on a four-point Likert scale, from 'strongly disagree' to 'strongly agree', and were offered space for free text comments (Table 3).

Results

Student performance in the OSCE

All 11 students completed the five stations included in the OSCE. Station 1, on history-taking, had the lowest mean score, 4.9 (range 3–6). Station 2, devising a management plan, had the highest mean score, 5.7 (range 4–7). The scores from the clinical examination stations were Station 3 (knee), mean 5.6 (range 4–7);

Station 4 (hand), mean 5.5 (range 2–7); and Station 5 (shoulder), mean 5 (range 3–7).

Student evaluation of the OSCE

The results from the questionnaire showed that all students rated the OSCE a worthwhile exercise, reflecting the learning outcomes of the module with the use of patients adding to the authenticity of the assessment. Although none of the students felt that the artificial nature of the OSCE had made it impossible for them to demonstrate their ability, some students felt the OSCE did not allow a demonstration of their ability to take a clinical history ($n = 3$), examine a shoulder ($n =$

CANDIDATE:

Introduces themselves to the patient.

Observation:

- Patient is appropriately positioned and undressed for examination.
- Observes any existing and relevant deformities, e.g. muscle wasting/colour/skin condition/ warmth/scars.
- Palpates specifically for presence of effusion.
- Compares contra lateral limb.

Examination:

- Examines the range of movement in the lumbar spine and or hip, if appropriate.
- Examines all appropriate active/functional movements in affected area in terms of range, pain and quality.
- Assess all appropriate passive range of motion in terms of range, pain and quality.
- Assesses the stability of the ligamentous system.
- Assesses the muscle strength of quadriceps and hamstring muscle groups.
- Demonstrates the use of stress tests to examine menisci.
- Demonstrates the use of stress tests to examine patello femoral joint.

Palpation:

- Palpates all relevant bony landmarks and soft tissue structures.
- Uses appropriate handling skills.

Interpretation:

- Demonstrates ability to interpret meaning of physical findings.

COMMENTS:

OVERALL MARK:



FIGURE 1. Marking criteria.

| REFERENCE POINTS | MARK |
|--|--------------------------|
| Exceptional performance. Appears competent and performs well on all aspects of the station. | 7 |
| Very good performance. Performs well on all aspects of the station, but does not appear to be an exceptional candidate. | 6 |
| Proficient. Performs well on most aspects of the station. | 5 |
| Satisfactory performance. Performs reasonably well on most aspects of the station. One or two minor omissions or shortcomings. | 4 (Pass Mark) |
| Borderline performance. Does not appear to carry out most tasks in a competent or confident manner. One important omission in content or underperformance in skills | 3 |
| Weak. Important omissions, errors, underperformance in skills. | 2 |
| Incompetent. Unable to perform any aspects of the station adequately. | 1 |

FIGURE 1. Continued.

2) or to discuss a management plan ($n = 1$). Two students felt that the OSCE was not the best way to assess the learning outcomes of the module. Despite this all students would recommend that the OSCE should be used to assess the next cohort of students.

Eight students found the OSCE 'too anxiety-provoking' and did not want this form of assessment to be used in other modules. Two students thought it was inappropriate to be assessed by professionals other than nurses.

In the free text section of the questionnaire, three students remarked that the OSCE had increased their confidence in assessing and examining patients in

TABLE 3. Students' evaluation of the OSCE

| | Strongly agree | Agree | Disagree | Strongly disagree |
|---|----------------|-------|----------|-------------------|
| 1. Overall, the OSCE was a very worthwhile exercise | 1 | 10 | – | – |
| 2. The OSCE was too anxiety-provoking | 2 | 6 | 3 | – |
| 3. The OSCE reflected the learning objectives for the module | 4 | 7 | – | – |
| 4. The OSCE did not permit an accurate assessment of my strengths and weaknesses in clinical assessment | – | – | 10 | 1 |
| 5. The artificial nature of the OSCE made it impossible for me to demonstrate my ability | – | – | 11 | – |
| 6. The OSCE was a good in-depth assessment of my ability to take a clinical history | 1 | 7 | 2 | 1 |
| 7. The OSCE allowed me to demonstrate my ability to discuss a management plan | 1 | 9 | 1 | – |
| 8. The OSCE was a sound, in-depth assessment of my ability to assess a patient with knee pathology | 2 | 9 | – | – |
| 9. The OSCE allowed me to demonstrate my ability to assess a patient with hand pathology | 2 | 9 | – | – |
| 10. The OSCE allowed me to demonstrate my ability to assess a patient with shoulder pathology | 1 | 8 | 2 | – |
| 11. An OSCE is not the best way to assess the learning outcomes of this module | – | 1 | 10 | – |
| 12. An OSCE should be used to assess this module for the next cohort of students | 1 | 10 | – | – |
| 13. An OSCE should be used to assess me in other modules of the rheumatology nursing MSc | – | 3 | 8 | – |
| 14. It was inappropriate to be assessed by professionals other than nurses | – | 2 | 6 | 3 |
| 15. The marks I received pretty much matched my own assessment of my performance in the OSCE | 1 | 7 | 3 | – |
| 16. Since qualification I have had my clinical skills formally assessed by observation on other occasions | – | 9 | 2 | – |
| 17. The use of real patients added to the authenticity of the assessment | 4 | 7 | – | – |
| 18. I would have preferred to be assessed on simulated patients | – | – | 9 | 2 |
| 19. The OSCE did not adequately assess the breadth of the module | – | – | 10 | 1 |

clinic and one student felt they had gained a sense of achievement by completing the OSCE.

Discussion

The present paper describes the implementation of a new method of assessment in a postgraduate course for rheumatology nurse specialists. The use of an OSCE ensured that all nurses were assessed using the same criteria and all examiners were confident that the variety of stations enabled an assessment of the nurses' level of competence in clinical assessment.

The format of the OSCE reflects the principles of OSCEs used on medical students, in that a range of examiners were used and the information was given to the candidates prior to entering the station. The number of stations used was fewer than in other studies (Thistlewaite, 2002), reflecting the length and objective of the module. The examiners were experienced in this mode of assessment and represented a broad base of experience.

The OSCE is now a recognized assessment on nurse prescribing courses. A focus group of nurse prescribers felt that the OSCE was anxiety-provoking and stressful, and that clinical scenarios were removed from real-world setting (Franklin, 2005). Our students also felt that the experience of undertaking the OSCE provoked feelings of anxiety, but that the use of patients added to the authenticity of the experience and the artificial nature of the OSCE did not prevent them demonstrating their ability.

Evaluation of an OSCE by medical students found that certain stations did not examine what they intended to, for example a communication station did not assess communication skills (Thistlewaite, 2002). Although three of our students did not feel that the station assessing clinical history-taking was a good assessment of their ability to take a clinical history. This perception may have been influenced by the marks they received, as the questionnaires were completed after they had received their marks. In future it would be preferable to ask the students to complete the questionnaires prior to receiving their marks.

Although Bartfay et al. (2004) state that an OSCE can be a valid, reliable, uniform, safe, objective and reproducible means of assessment, others challenge the assumption that it is valid in all circumstances (Park et al., 2004). One measure of the validity of an OSCE is to evaluate whether this style of examination can reasonably be used to assess a particular group of students, with a given set of scenarios in a particular setting. For example, we felt it was appropriate to assess our students to undertake a clinical history of a patient with a shoulder problem in 10 minutes, but it would not be appropriate to assess a student undertaking a complex chronic pain consultation where the patient has numerous physical, psychological and

social problems within the same timeframe. Content validity can be improved by using patients and making the clinical scenarios representative of clinical practice.

The primary purpose of an OSCE examination is to assess clinical competency. The mechanism of assessment is at the 'showing how' level of Miller's pyramid of knowledge. The OSCE stations provided the mechanism for assessing the student's application of knowledge as well as his or her psychomotor and interpersonal skills and reflect what the student has been taught on the module and practised in their own clinics. Effective learning and effective assessment should be part of the same process with the assessment strategy employed reflecting the learning that has taken place in the module. The best way to assess whether a student is competent in joint examination is to observe them carrying out that activity. Written assessment could confirm the student's clinical knowledge regarding the interpretation of clinical findings but would provide no insight into the student's handling skills, patient positioning or communication with the patient, essential components of performing joint examinations which are best assessed through observation.

An OSCE designed to evaluate the ability of third-year medical students in informing patients about treatment options identified poor inter-rater reliability between examiners for individual marks. However, examiners had greater agreement on whether the students had passed or failed (Thistlewaite, 2002), reliability may be compromised if the chosen examiners lack experience (Franklin, 2005). All our examiners had the necessary experience to conduct their respective stations and there was consensus with the marks awarded. The reliability of the stations could also be improved by having two examiners at each station but this would increase costs.

Patient simulators have been used in OSCEs (McDowell et al., 1984), which can increase the reliability of the assessment. However, in our situation it was felt that patient simulators would not be able to replicate all clinical situations; for example, in the station assessing physical examination of the knee we wanted the student to be able to recognize the signs of synovitis (e.g. raised skin temperature, presence of effusion, reduced extension) and the only means of assessing this was to use a patient who had these symptoms. A patient simulator was used in Station 5, which involved shoulder examination, as it was felt that it would be too painful for a patient with shoulder pain to be examined by 11 students. Stations 3 and 4, physical examination of the knee and hand, used two patients to ensure that no patient was examined more than six times.

The OSCE only had five active stations, which is fewer than have been used in other examinations (Thistlethwaite, 2002). Although the five stations enabled the students to be assessed in different areas, which equates with the learning

outcomes of the module, there was only a single examination conducted on each anatomical area. This precluded the student from examining different pathologies, such as the knee of a patient with an inflammatory and non-inflammatory process. Also, the students were only assessed once taking a clinical history on a patient with a shoulder problem; although there are some generic clinical history-taking skills, our OSCE did not assess the student taking the clinical history of patients with other joint-related problems, for example hand and knee. The number of stations could be increased to incorporate a wider representation of stations and increase the reliability of the examinations.

Conclusion

This was the first time that an OSCE has been used in a postgraduate rheumatology course to assess rheumatology nurses' clinical examination skills. The OSCE was a reliable method of assessing the students' ability to carry out a physical examination and proved a more valid assessment than the previous assignment and patient viva. The course team, examiners and students found the OSCE a worthwhile experience that reflected the learning outcomes of the module and recommended that it be used as a means of assessing this module in the future.

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Address correspondence to: Dr Sarah Ryan, Staffordshire Rheumatology Centre, Haywood Hospital, High Lane, Burslem, Stoke on Trent ST4 8UD, UK. E-mail: sarah.ryan@uhns.nhs.uk