



ELSEVIER

Contents lists available at ScienceDirect

Nurse Education in Practice

journal homepage: www.elsevier.com/locate/nepr

Original research

The Objective Structured Clinical Examination in evolving nurse practitioner education: A study of students' and examiners' experiences

Ingrid Taylor^{a,*}, Pia Cecilie Bing-Jonsson^a, Edda Johansen^a, Rika Levy-Malmberg^{a,b},
Lisbeth Fagerström^{a,c}



^a Department of Nursing and Health Sciences, University of South-Eastern Norway, Drammen, Norway

^b Department of Nursing, University of Applied Sciences, Novia, Vaasa, Finland

^c Faculty of Education and Welfare Studies, Åbo Akademi University, Vasasa, Finland

ARTICLE INFO

Keywords:

Advanced practice nursing
Nurse practitioner
Clinical competence
Objective structured clinical examination
(OSCE)

ABSTRACT

Assessment of advanced clinical competence is essential for safe practice and achieving international standards for nurse practitioners. It is of particular interest for countries that have recently been introduced to advanced nursing roles to investigate examination forms that ensure quality in nurse practitioner education. The aim of this study was to explore and describe the nurse practitioner students' and examiners' experiences with Objective Structured Clinical Examination, which is an exam form for assessing clinical competence. Five focus groups, consisting of 15 nurse practitioner students ($n = 15$) and five individual interviews with examiners ($n = 5$), were conducted in June 2016 and analysed using thematic analysis. The nurse practitioner students and examiners experienced the exam as an appropriate method of assessment for advanced clinical competence, although they experienced some challenges with its form. Consequently, the results of this study advocate for a course design that includes: constructive alignment between the course and the exam, more training with real patients, use of formative and summative assessment and a second exam with a real patient after the student's clinical placement. The lack of a clear nurse practitioner role in countries with evolving advanced nursing roles can challenge the expected level of advanced clinical competence in an educational context.

1. Introduction

Advanced Practice Nurses (APNs) were introduced into health care systems worldwide to meet health care demands and improve quality of care and treatment (Laurant et al., 2018; Martínez-González et al., 2014; Newhouse et al., 2011). The Nurse Practitioner/Advanced Practice Nurses Network (NP/APNN) of the International Council of Nurses (ICN, 2019) provides the following definition: 'A Nurse Practitioner/Advanced Practice Nurse is a registered nurse who has acquired the expert knowledge base, complex decision-making skills and clinical competencies for expanded practice, the characteristics of which are shaped by the context and/or country in which s/he is credentialed to practice. A master's degree is recommended for entry level'. The Nordic APN model by Fagerström (2011) has eight central competency domains: direct clinical praxis, ethical decision-making, coaching and guidance, consultation, cooperation, case management, research and development and leadership. A premise for the coaching role of an NP/APN is a person-centred approach to the patient (Fagerström, 2011), which can be understood as holding the person's values central during

decision-making (McCormack et al., 2017). Thus, it can be argued that the NP/APN role contributes to more person-centred health care since NPs/APNs have been reported to provide the same high level of quality care as general practitioners with greater patient satisfaction (Laurant et al., 2018).

Nordic nursing leaders suggest that there is a need for APN roles in primary health care (Christiansen and Fagerström, 2016). In Norway, research indicates that the NP role can make a valuable contribution for non-urgent patients with extensive care needs in the emergency care context (Boman et al., 2018). The Norwegian government has recommended to establish NP master programmes, aiming at new tasks that follow a reorganisation in the municipal health and care services, such as consultations of patients with chronic disease (Ministry of Health and Care Services, 2015). To this end, Norway has recently introduced NP master programmes that carry the core elements of developing and assessing advanced clinical competence. The Objective Structured Clinical Examination (OSCE) has been introduced as a solution to the complexity of assessing advanced clinical competence within Norwegian NP master programmes.

* Corresponding author. University of South-Eastern Norway (USN), Post office box 235, 3603, Kongsberg, Norway.

E-mail address: ingrid.taylor@usn.no (I. Taylor).

<https://doi.org/10.1016/j.nepr.2019.04.001>

Received 1 November 2018; Received in revised form 10 March 2019; Accepted 2 April 2019

1471-5953/© 2019 Published by Elsevier Ltd.

1.1. Background

The OSCE was originally designed for medical students as an examination that could objectively assess a range of competencies expected of a student in different stations using checklists and rating scales to be completed by the examiner (Harden, 2016). However, the use of OSCE in nursing education has been criticized for fragmenting holistic patient care by designating different stations (Rushforth, 2007). Thus, nursing education tends to focus on the integrated assessment tasks approach—or a total patient consultation that conforms to real-life clinical settings—which is referred to as the Objective Structured Clinical Assessment (OSCA) (Ward and Willis, 2006). This approach is in line with the holistic view of clinical competence that includes knowledge, skills, values and attitudes (Yanhua and Watson, 2011). On the other hand, the OSCE comprises of simulated clinical situations for NPs that include assessments of advanced skills, such as history taking and physical assessments (Ward and Barratt, 2009). Some authors, such as East et al. (2014), do not distinguish between the OSCE and the OSCA, which could indicate the inconsistent use of these terminologies and the existence of confusion regarding clinical competence assessment procedures for both approaches.

In nursing education, assessment plays a major role in certifying competent practitioners who can adequately take care of patients (Muthamilselvi and Ramanadin, 2014). According to Walsh et al. (2009), objectively assessing and evaluating nursing students' clinical competence is one of the most challenging tasks in nursing education due to health care system complexity and to the dynamic, revolutionary nature of nursing itself. While some concerns have been reported about the OSCE, such as cost and labour intensity (Palese et al., 2012), the validity of simulation (Rushforth, 2007) and student stress (Miller and Carr, 2016), a consensus about the OSCE as a valid and reliable assessment of clinical competence has emerged (Bagnasco et al., 2016; Barry et al., 2013; Najjar et al., 2016; Navas-Ferrer et al., 2017).

There is, however, a lack of research on the perspectives of students about the OSCE in nursing education (Johnston et al., 2017; Muldoon et al., 2014), which is surprising since students are integral to the overall OSCE performance (Johnston et al., 2017). While Johnston et al. (2017) showed that bachelor level nursing students found value in the OSCE, despite the stress and anxiety provoked by the assessment, Muldoon et al. (2014) showed that midwifery students were either neutral or unsure towards the OSCE as an assessment for clinical competence. Little is known about the NP experiences with the OSCE. Thus, further exploring student experiences together with examiner experiences can contribute to a broader perspective, which can facilitate a deeper understanding of the assessment of advanced clinical competence. In addition, research is also lacking on the OSCE for European countries outside the United Kingdom, indicating a need to determine whether the assessment is culturally sensitive, valid and reliable (Bagnasco et al., 2016). For countries with evolving NP/APN education, the assessment of advanced clinical competence must be investigated as a means of achieving the international NP/APN standards described by the ICN (2019): an expert knowledge base, complex decision-making skills and clinical competencies for expanded practice.

This study explores and describes the experiences of both NP students and examiners with the OSCE in a newly developed master programme at an eastern Norway university (Table 1). These experiences were collected to enhance the existing and evolving NP educational programmes. Thus, the purpose of the study is to retrieve knowledge that can be used to improve the assessment of advanced clinical competence in NP education. To the authors' knowledge, this is the first study on NPs and the OSCE in Scandinavia.

2. Method

2.1. Aim

The aim of this study was to explore and describe NP students' and examiners' experiences with the OSCE in order to further improve the assessment of clinical competence in NP education.

2.2. Design

A qualitative descriptive study was designed to produce findings that present 'the facts of the case in an everyday language' (Sandelowski, 2000, p. 336). By 'facts', Sandelowski (2000) does not refer to an objective reality when describing what is being observed, as a human is neither able nor likely to do so. Instead, she refers to the choices made by the observer when describing what exists that have descriptive and interpretive validity (Sandelowski, 2000).

With the NP students, focus groups were chosen to explore and clarify individual and shared perspectives through group discussions (Polit and Beck, 2017). Individual semi-structured interviews were conducted with the examiners to obtain information on their experiences, allowing the participants to talk freely and use their own words (Polit and Beck, 2017). While the use of examiner focus groups was considered, individual interviews were chosen due to practical considerations, such as geographical distances and scheduling, for the participants.

2.3. Participants

The participants were 15 NP students and five examiners. Purposeful sampling was used to recruit the participating students and examiners from a course in Systematic Clinical Assessment and Health Assessment as part of an NP master programme (Table 1). Purposeful sampling was employed to identify and select information-rich cases that would illuminate the aim of the study (Patton, 2015). An inclusion criterion was that the participants be either students or examiners in a course utilising the OSCE as an examination. The participants were informed of the study in writing through email at the beginning of the course and were recruited during the course. All students and examiners that met the inclusion criteria participated in the study, except for one examiner who is a co-author.

The students were at the end of the first year of their master programme and had at least five years of work experience as an RN in either specialist health or primary health services. The examiners were a Norwegian NP, two British NPs and two Norwegian physicians. The British examiners had extensive experience at another university with the OSCE as an examination form. The Norwegian examiners had no prior experience with the OSCE. All examiners taught during the course or during previous courses in the master programme. Additional participant characteristics are presented in Table 2.

2.4. Data collection

For practical reasons and out of consideration for the participants, five focus groups with three participant students in each group ($n = 15$) and five individual interviews with examiners ($n = 5$) were conducted from 13 to 24 June 2016. Four of the focus groups were conducted at the university campus on the same day that the students completed their OSCEs. The fifth focus group was conducted approximately one week after the OSCEs in one of the students' workplaces. The interviews with the examiners were conducted within a week after all the students had completed their OSCEs at either their workplace or the university campus. The focus groups lasted from 65 to 98 min and the individual interviews lasted from 56 to 70 min. All focus groups and interviews were conducted by the first author and were audiotaped. The focus groups were transcribed by the first author, while the individual

Table 1
Objective Structured Clinical Examination (OSCE) in a nurse practitioner (NP) master programme.

Learning outcomes in the NP master programme

The overall learning outcome for the master programme is to educate NPs with advanced clinical competence according to the International Council of Nurses (ICN) definition of an NP/APN to take on an expanded and independent role with considerable direct patient care that promotes person-centred health care. The master programme is part-time (three to four years) and has 120 European Credit Transfer and Accumulation System (ECTS).

The learning outcome of the Systematic Clinical Assessment and Health Evaluation course was to enable students to acquire a health history, conduct a structured physical assessment and make independent clinical decisions based on the information gleaned. The course is 10 ECTS. The course exam was an OSCE.

The Course:

The course was preclinical and aimed to prepare the NP students for a 15-week clinical placement supervised by a physician. Each block consisted of lectures, group- and casework, video-based e-learning and guided exercises in the clinical skills lab. The students were advised to practice physical assessments in their places of work. The course examination was an OSCE, which was arranged right after the last block week of the course.

Before the course in Systematic Clinical Assessment and Evaluation, the students had completed the following courses: Introduction to APN (5 ECTS), Pathology (10 ECTS) and Pharmacology (10 ECTS).

This was the second time the course was arranged, but it was the first time the course was carried out as a part of the NP master programme.

The OSCE:

The OSCE was set up with three stations: abdominal, respiratory and neurology. However, the NP students only went through two of the three stations. The students needed to obtain an exam mark of 40% or higher to pass the course. All students passed the OSCE. The OSCE assessed how the students used the knowledge they acquired on pathology, history-taking and physical assessment techniques to suggest medical and differential diagnoses and to make clinical decisions.

During the OSCE, the students went through the stations with a simulated patient and two examiners possessing a checklist. Before entering each station, they were presented with generic history information about the patient (e.g. 'the patient is feeling unwell'). Each station lasted 30 min: 10 min for history taking, 15–20 min for physical assessment and approximately five minutes for the examiners to ask the student about 'red flags' (i.e. any suspicious symptoms of any serious medical condition, differential diagnosis or further check-ups, such as x-rays or further treatment for a condition).

The checklist was developed by experienced OSCE nurse educators and included three columns of performance ratings.

Approximately one to two weeks after the exam, the students were given written feedback.

Table 2
Demographic characteristics.

Participants			Student (N = 15)	Examiner (N = 5)
Student	Age	Range	26–60 years (mean age: 43 years)	
	Sex	Female	14	
		Male	1	
	Work setting	Primary health service	10	
		Specialist health services	5	
Examiner	Sex	Female	3	
		Male	2	
	Profession	NP (British)	2	
		NP (Norwegian)	1	
		Physician	2 (anaesthesiologist and geriatrician)	

interviews were transcribed by an independent party.

A semi-structured interview guide was used for both the focus groups and the individual interviews, following the framework of [Kallio et al. \(2016\)](#): (1) identifying prerequisites, (2) retrieving and using previous knowledge, (3) creating a preliminary guide, (4) pilot testing and (5) presenting the complete semi-structured interview guide. The guides were pilot tested using a former student with OSCE experience and an assistant professor who had thorough experience with assessments of undergraduate nursing students' skills. Data were collected on the following participants' experiences: the OSCE as an examination form and assessment of advanced clinical competence; their ability to conduct history taking, physical assessments and clinical decision-making; their learning activities in the course prior to the OSCE; the cases used during the OSCE; and the simulated patient- and person-centredness relevance to the OSCE.

2.5. Ethical considerations

Ethical approval to conduct the study was granted by the Norwegian Social Science Data Services (approval number 48269). With reference to the Helsinki Declaration ([World Medical Association, 2013](#)), the informants were advised in writing via email about the project's intentions beforehand and their right to withdraw from the project without

having to provide a reason and without consequences for themselves. In keeping with [Malterud \(2017\)](#), this information was also repeated orally before interviews began to ensure that the informants were adequately apprised. After the study was described to the participants, their written informed consent was obtained.

An ethical issue that arose was the dilemma of the position of the authors and the students. The first author is a PhD student without any teaching affiliation. However, the other authors were a programme leader of the NP education master programme from which the participants of our study were selected, a course coordinator for the OSCE, a teacher and examiner of the OSCE and a teacher of a previous course in pathology. Since all the students who participated in the study also participated in the OSCE, it should be noted that the possibility of an ethical issue of the students feeling an obligation to participate ([Ferguson et al., 2006](#)) cannot be excluded. In addition, the students had not yet received their OSCE feedback, which may have limited the perceived voluntary consent ([Ferguson et al., 2006](#)). Thus, as a preventative measure, the first author informed all the participants about the details of the study, conducted the sampling of participants as well as arranged and conducted both the focus groups and interviews. The first author did not share this data with the other authors until after the students had received their exam marks and feedback. It should be noted that both positive and negative experiences were shared in the focus groups and interviews, suggesting that the participants felt free to share some of their critical thoughts.

2.6. Data analysis

The data material was analysed using [Braun and Clarke \(2013\)](#) thematic analysis, which consists of six steps ([Table 3](#)). First, the audiotapes were listened to several times (step 1). Second, the transcribed material was coded to identify features of the data set, creating the basis for the themes (step 2). A back-and-forth approach was then applied by suggesting themes, writing them up and then going back to the coded material (steps 3–5). This iterative process was repeated until the themes and the final write-up represented the data material as a whole (step 6). The authors each analysed one interview individually before discussing them all as a group. The aim of the discussion was to analyse the authors' understanding of the data but also to illuminate possible blind spots when searching for patterns. The first author analysed all the data material, but all authors contributed to the discussion

Table 3
Example of the analysis process.

Step 1	Step 2		Step 3-5	Step 6
Example of transcribed material	Example of coding	Iterative process	Preliminary theme	Final theme
‘And a clinical exam is needed in this course to demonstrate what you have learned and what you can execute’.	Assessment of learning outcomes.		Learning outcomes of the OSCE.	The OSCE as a method for demonstrating and assessing clinical competence.
			Preliminary sub-themes • Ability to do physical assessment. • Clinical competence on an NP level.	Final sub-themes • Students’ ability to demonstrate advanced clinical competence. • Assessing advanced clinical competence.

during the analysing process until an agreement was reached. This study adhered to the following pragmatic paradigm: ‘Truth is what works at the time. It is not based in a duality between reality independent of the mind or within the mind’ (Creswell and Poth, 2018, p. 27). This approach means that the participants’ answers on how to assess advanced clinical competence were taken at face value and their experiences were acknowledged within their contexts, both on campus and in work life.

2.7. Rigour

This study followed Lincoln and Guba (1985) four criteria for trustworthiness: credibility, transferability, dependability and confirmability. The strategies that were applied to ensure the rigour of this study are listed in Table 4.

Focus groups explicitly use group interaction as part of the method. Researchers have been heavily criticized when only single quotations from single participants were reported as this does not reflect the essence of group interaction that is unique to the focus group data collection method. (Kitzinger, 1994; Webb and Kevern, 2000). Therefore, to support the methodological rigour of the focus group approach, the presentation of this study’s findings focuses on quotations from students who represented the groups’ interactions. The quotations are marked using the number of the focus group and student, as well as the interviews with the examiner.

3. Findings

The analysis of the data material suggests that, even though both the

Table 4
Trustworthiness strategies.

Criterion	Strategy employed
Credibility	<ul style="list-style-type: none"> ● Prolonged engagement ● Analyst triangulation ● Peer debriefing ● Member-checking
Transferability	<ul style="list-style-type: none"> ● Providing thick descriptions
Dependability	<ul style="list-style-type: none"> ● Inquiry audit
Confirmability	<ul style="list-style-type: none"> ● Reflexivity

students and the examiners experienced some challenges regarding the OSCE, they also experienced the OSCE as an appropriate form of assessment for advanced clinical competence. Three main themes emerged from the data: (1) that there was insufficient preparation for the OSCE; (2) that the OSCE was a challenging examination process; and (3) that the OSCE was a method for demonstrating and assessing advanced clinical competence. Each theme is presented along with two sub-themes and summarized in Table 5.

3.1. Theme 1: Insufficient preparation for the OSCE

3.1.1. Sub-theme: Alignment between the course and the OSCE

The students experienced the course as highly relevant for their work life and motivating for the development of their NP roles. However, several students felt that some of the lectures did not prepare them for the OSCE. In general, the students agreed that most, but not all, learning activities aligned with the OSCE.

Focus group 5:

Student 13: Much of it [in block week two out of three] was a good pathological rehearsal, but not in relation to the OSCE.

Student 15: No, it wasn’t connected.

The examiners acknowledged that the students had gained skills and developed their clinical competence during the course. Nevertheless, several examiners were concerned that not all students had acquired the necessary level of pathology knowledge and, thus, were not sufficiently prepared for the OSCE.

Examiner 5: It was clearly a differences in their [the students] level of knowledge ... some of them [the students] understood or had much greater understanding of what they did than others.

3.1.2. Sub-theme: Skill training and the OSCE

The students found the training on history-taking and physical assessment techniques at the clinical skills lab to be most beneficial when they were guided by a teacher and trained in groups of three, using the OSCE checklists as ‘student’, ‘patient’ and ‘examiner’. Several students expressed that it would also be highly beneficial to train with real patients who presented real symptoms. Several students did not feel prepared for the exam and agreed that the main reason for this was a lack of skill training with feedback during the course. Only 2 of the 15 students had trained with a physician at their workplace, which was a

Table 5
Themes and sub-themes.

Theme	Sub-themes	Findings summarized
Insufficient preparation for the OSCE.	Alignment between the course and the OSCE. Skill training and the OSCE.	A lack of alignment between the learning activities of the course and the OSCE impaired the students' preparation for the exam. Students need to have access to sufficient skills training to prepare them for the exam.
The OSCE as a challenging examination process.	Student stress and the impairment of student performance. The unnatural setting of the simulation.	Stress can impair the students' performance and threaten the validity of the advanced clinical competence assessment. The unnatural setting of the simulation can make the students overly attentive to being in an exam setting and not in a real-life clinical setting.
The OSCE as a method for demonstrating and assessing clinical competence.	The students' ability to demonstrate advanced clinical competence. Assessing advanced clinical competence.	After completing the OSCE, the students could demonstrate some structured history-taking and physical assessment techniques but still struggled to demonstrate decision-making. The students and examiners experienced the OSCE as an appropriate assessment of advanced clinical competence.

course requirement.

Focus group 1:

Student 1: For me, in my job, I have not been able to practice at work to any degree because I am too busy at work.

Student 2: ... as soon as I have started, then a medical physician student comes in to take over.

The examiners thought some of the students did not to have enough experience in some of the physical assessment techniques. They believed that the majority of students needed more training before being ready to perform physical assessments to ensure safe practice but thought they were ready for their clinical placement.

Examiner 4: I would be uncertain of some of them [the students], if it's reasonable to say. The same way you are uncertain when someone just got their driver licence, if it's safe to go for a ride the same day ... I think some of them [the students] should have some more guided training before working on their own.

3.2. Theme 2: The OSCE as a challenging examination process

3.2.1. Sub-theme: Student stress and the impairment of student performance

Most students agreed that the OSCE process was well organized and felt that the examiners and simulated patients were friendly. Nevertheless, all students reported stress during the OSCE process. Stress caused many of them to forget both basic knowledge from their everyday work life, such as washing hands, as well as elements from different physical assessment techniques, such as checking visual fields during a neurological assessment. Consequently, some students were unsure whether they were able to show their actual level of clinical competence during the exam. Although the students' stress levels varied, most felt that the stress hindered their ability to focus, thereby impairing their exam performance.

Focus group 1:

Student 2: When you have your exam, there is always a bit of stress that you, well, the brain doesn't work a hundred percent. Because then, what did I forget?

Student 3: For me, it feels like I'm going to be executed. I feel it's absolutely horrible. When I'm told to open the door [to the examination room], I just want to run the other way. I don't understand how to put one leg in front of the other. And it's a bit like that, I think it has to do with the exam form.

Student 1: ... I get nervous, but I don't have those problems [as student 3 describes] when I get so nervous.

The examiners agreed that some students were significantly more stressed than others. The students who were the least stressed were also those who succeeded the best during the OSCE process. Furthermore, the examiners thought that it was somewhat difficult to distinguish between poor performance caused by stress-related factors and that caused by actual lower levels of clinical competence. The examiners noted that since the students' performance was the foundation for this

exam assessment, consequently both types of behaviour were graded in the same manner.

Examiner 1: I wasn't sure at first, not that I was judgmental. You can't do that, but she seemed very nervous.

3.2.2. Sub-theme: The unnatural setting of the simulation

The students felt positively about the use of simulated patients. Nevertheless, the students perceived the simulations as unnatural when the patients did not have the real symptoms of a disease relevant for the station or did not realistically portray the symptoms of, for example, pain. This made the students aware that they were in an exam setting and not in a real clinical setting. While some students did not mind the role-playing during the OSCE, other students either grew embarrassed or struggled to interact. There was substantial confusion about how the simulated patient was not a real patient although they were a real person. As a result, the students perceived the simulated patient in two ways—first, as a simulation of a patient (through the provision of fabricated information) and, second, as a real person (the actual man or woman who provided the fabricated information for the simulation).

Focus group 3:

Student 7: It is a filter because I do not relate to her [simulated female patient].

Student 9: Didn't you relate to her?

Student 7: Yes ... The [simulated] patient, I related to, but not to the real lady who sat there [simulating the patient].

The examiners agreed that those students who succeeded in the role-playing were also the most successful candidates. Several of the examiners thought that some students interrupted the patient too much during the history taking or made the patient uncomfortable during the physical assessment (e.g. as a result of neglecting the patient's personal boundaries). While some examiners questioned whether this was due to the students' low level of clinical competence, others thought it was due to the students being too immersed in the role-playing.

Examiner 3: They [the students' that performed the best] immersed themselves more and also did so with palpating all four quadrants [of the abdomen] lightly first, then more deeply....Those who did not do this [light and deep palpating], maybe did not do so because they thought it was uncomfortable for the [simulated] patient or because the nervousness in the [simulated] setting hindered them from immersing themselves to feel something that wasn't there.

3.3. Theme 3: The OSCE as a method for demonstrating and assessing advanced clinical competence

3.3.1. Sub-theme: The students' ability to demonstrate advanced clinical competence

Several students felt that the OSCE indicated their current level of clinical competence and were motivated to train and develop their clinical competence further during the clinical placement. Several

students felt that they could demonstrate some structured history-taking and physical assessment techniques after completing their OSCE. However, they questioned whether they had acquired the learning outcome of advanced clinical competence. For example, some felt that they had knowledge of a technique (e.g. checking reflexes) but not the ability to execute the technique. The students also found decision-making to be the most difficult to demonstrate during the OSCE.

Focus group 4:

Student 3: The cases were realistic, but the questions that came with the red flags fazed me [see Table 1 for the definition of red flags].

Student 2: I think he just tried to challenge us, just asked to hear if we knew a little more.

The examiners felt that while some students had strong performances, other students exhibited weaker performance regarding history-taking and physical assessment techniques. Some examiners found that some students lacked sufficient knowledge to demonstrate a skill. This was evident, for example, when students assessed the abdomen but did not place the stethoscope in the correct places. Only a few students demonstrated an ability to combine the knowledge and findings from their physical assessment to conduct independent decision-making when asked about the red flags in the OSCE.

Examiner 4: Also, I think some of them [the students] should have more, ..systematising of the clinical aspect of the job or the clinical part of assessing [the patients] and drawing conclusions.

3.3.2. Sub-theme: Assessing advanced clinical competence

The students agreed that the OSCE was an appropriate exam for a course with clinical learning outcome aims, as they were given the opportunity to display their clinical competence level in action. Unlike a written exam, the OSCE gave the students the opportunity to receive feedback on their performance and on how to improve their clinical competence. Several focus groups discussed how they were usually given a grade from A-F for an exam and questioned whether a 40% mark was a sufficient minimum level with which to pass the OSCE while simultaneously holding an advanced level for an NP. Furthermore, some students found the OSCE and the person-centredness approach compatible, while others were unsure.

Focus group 2:

Student 6: The person-centred approach is to see the individual person....The OSCE is only check, check, check.

Student 5: I don't think it's that bad, as you say ... I asked about civil status. Oh, you're a widow. I'm sorry. How do you manage?

During the OSCE, an experienced English-speaking examiner was paired with a less experienced Norwegian examiner and all the examiners were satisfied with their collaboration. All examiners agreed that the OSCE was an appropriate assessment of advanced clinical competence. Several examiners thought that the 40% pass rate was not enough to ensure that all students were at an advanced level of clinical competence, particularly with points given for basic skills, such as washing hands prior to conducting the physical assessment. Instead, one examiner suggested that a pass should only be given when a student performed the skills relevant to an essential section of the examiners' checklist.

Examiner 2: Hmm, you have to weight what is essential, but everybody finds it difficult to know what do you leave out that's not essential....we've put equal weighting for things like washing the hands to examining a cranial nerve.

Most of the examiners thought that a person-centred approach was relevant to assessment during the OSCE, but were unsure how to incorporate it into the OSCE checklist. One examiner expressed that it was a challenge to assess clinical competence in line with both safe practice and a person-centred approach:

Examiner 2: What it [the OSCE] doesn't take into account was all the circumstances, and even though we asked about family and home [of the simulated patient] we don't weight that as high because what we were rating high is their [the students'] ability to be safe in their

[physical] assessment.

4. Discussion

The findings reveal that there were challenges regarding the alignment of the course and the OSCE that affected the students' preparation for the exam. Aronowitz et al. (2017) confirmed this by highlighting that the students must possess fundamental knowledge prior to performing an OSCE. Raleigh and Allan (2017) also found that biomedical and specialist knowledge deficits in NPs created a barrier to the transition of physical assessment skills from the university to the workplace context. Both the students and the examiners in this study questioned whether the students had gained this necessary level of fundamental knowledge. Thus, the course and the OSCE struggled to achieve a constructive alignment where the assessment tasks were aligned with the intended learning outcomes (Biggs and Tang, 2011). Because of the findings in this study, the NP master programme has implemented changes. The course leading up to the OSCE now includes more case-based (instead of organ-specific) lectures to be more in line with the procedures of conducting history-taking and physical assessments, clinical decision-making and the examination form of the OSCE.

The students and the examiners in this study both felt there was a lack of training on physical assessment skills. Taking the OSCE before the clinical placement might ensure that students experience learning, practice and assessment of core skills prior to clinical placement (Nulty et al., 2011). However, this strategy may also limit the students' access to training possibilities, as the students in this study did not find time to train at their workplaces. A challenge for every country with evolving NP education is that its students do not have NP role models in their clinical fields or workplaces. According to Schober and Affara (2016), the successful development of the NP/APN role requires well-functioning teamwork with physicians, as confirmed in those countries that have implemented the NP/APN role (Fagerström and Glasberg, 2011; Gould et al., 2007). Therefore, it may be more important that education in countries with an evolving NP/APN role ensures that students receive sufficient training experience with real patients than in countries with a more developed NP role. For this reason, the NP master programme analysed here has implemented a course learning activity to provide guided training with teachers and volunteers acting as simulated patients in the clinical skills lab prior to the OSCE.

The findings also revealed that the students and examiners experienced the OSCE as a challenging examination process involving student stress and an unnatural simulation setting. The findings concerning student stress during the OSCE are in line with results from previous research (Johnston et al., 2017; Miller and Carr, 2016; Muldoon et al., 2014). Rushforth (2007) argued that student stress could increase the validity of the OSCE in line with the stress that naturally occurs in the 'real world' of clinical practice. However, in this study, the students experienced stress, which consequently made them more attentive to the exam setting and less attentive to their own performance. Furthermore, the examiners felt that poor performance resulting from student stress was difficult to separate from poor performance that is due to a lack of clinical competence, thus challenging the exam's validity for assessing advanced clinical competence. Nulty et al. (2011) found that most students experience stress to be the worst aspect of the OSCE, even when the students perceived the examiners as friendly and there was a focus on practice rather than perfect demonstration. Hence, preparing students for the exam with the aim of reducing student stress might be beneficial for optimising student performance and validating the exam—as described in more detail below.

An advantage of the OSCE lies in its use as both an educational strategy as well as an assessment. The OSCE, in comparison to other exam forms, can be used as both a formative and summative evaluation method to identify and assess various components of clinical competence (Walsh et al., 2009). A summative assessment is usually a final exam utilised to summarise students' achievements, which requires

students to demonstrate knowledge, skills and professional judgements, while a formative assessment provides students with feedback on their performance throughout the learning process under conditions that are non-judgmental and non-threatening in order to promote learning (Engström et al., 2017). Through formative assessment, cases can be developed with increased complexity as students progress in their preparation for the summative assessment (Aronowitz et al., 2017). This utilisation of the OSCE as an educational strategy in addition to an assessment tool can be viewed as in line with an andragogical perspective, focusing on the building of personal student autonomy and facilitating self-directedness in learning (Knowles et al., 2015). Therefore, changes have been implemented in the NP master programme to integrate more formative assessments during the course with the aim of reducing student stress and preparing the students for their exam.

A quantitative study conducted by Bikker et al. (2015) with 774 patients concluded that experiences of care, patient enablement and health outcomes could be improved through an emphatic person-centred approach. A core competence of guidance and coaching for an NP/APN is to have a person-centred approach (Fagerström, 2011). Nevertheless, the students were divided on whether they considered a person-centred approach suitable for assessment in an OSCE format, and some examiners were unsure how to incorporate person-centredness into the OSCE checklist. Although the OSCE checklist used in this study had such criteria as ‘ascertains patient’s belief/concerns’ (Table 6), it did not incorporate criteria relating to the simulated patients being included in the decision-making process, in line with McCormack et al. (2017) person-centred approach. Thus, there is a need for more research on how to implement a person-centred approach in the OSCE checklists.

As an assessment strategy, the OSCE has some challenges regarding the assessment of clinical competence. First, the validity of the checklist content can be questioned, as research on the medical OSCE shows that important items from the evidence literature (e.g. checking for tachycardia in a pulmonary embolism case) were overlooked when the checklists were developed (Hettinga et al., 2010). The current study also found that examiners were divided as to the best way to give credits when using the checklists. Second, this study found that the students experienced some challenges regarding the realism of the simulated setting. This might indicate that the students did not experience sufficient psychological fidelity, a perception that the simulated scenario is real (Miller and Carr, 2016). However, the assessment of clinical competence is complex and it is debatable whether one single assessment strategy can provide all the information required for an accurate assessment (Smith et al., 2012). Thus, it might be advisable to arrange for OSCEs both before and after clinical placement to ensure that students have gained advanced clinical competence in line with the ICN (2019) definition of an NP/APN. As a result of this study, along with the OSCE, the NP master programme has also implemented the OSCA at the end of the students’ clinical placement (total of 15 weeks/450 h), in which a student is assessed by a teacher from the university faculty and the supervisor from their clinical placement. The student goes through the OSCA focusing on conducting a total patient consultation with a patient they have not previously met. Even though including real patients involves some ethical concerns, the OSCA with a real patient maximises the assessment validity, as using simulated patients can lead to poor patient consistency (Rushforth, 2007).

Muldoon et al. (2014) found that student midwives were neutral or unsure as to whether the OSCE was a meaningful assessment strategy for clinical competence. Though the students and examiners in this study did experience some challenges regarding the OSCE, they also felt that the OSCE was appropriate for assessing advanced clinical competence. Barry et al. (2012) found that students reacted positively to the OSCE, as it gave them confidence and prepared them for their clinical placement. The students participating in this study concurred with this. Nevertheless, the students and examiners were also unsure whether the OSCE checklists measured clinical competence at an advanced level.

Table 6
Sample OSCE checklist.

STUDENT NAME: _____

- 0 = Not done
- 1 = Demonstrates, not confident
- 2 = Demonstrates confidence

MARKING CRITERIA	0	1	2
COMMON CRITERIA			
1. Introduces self to patient			
2. Washes hands			
3. Ascertains patient’s belief/ concerns			
4. Closure of consultation / evidence of safety netting			
PART ONE – HISTORY			
5. Determines chief presenting complaint			
6. Structured approach to determine history of presenting complaint e.g. OLD CART / PQRST			
7. Past medical history			
8. Drug history / Medication – Prescription/OTC			
9. Smoking amount			
10. Alcohol consumption / recreational drugs			
11. Family history			
12. Social history – occupation / home			
13. Review of systems			
14. Allergies			
PART TWO- EXAMINATION			
15. Assesses general appearance – eg FAST positive			
16. Vital signs: Temp, BP, RR, HR, SPO2			
CRANIAL NERVES			
17. I Olfactory (smell, nasal patency)			
18. II Optic (visual acuity, visual fields, says funduscopy would be performed)			
19. III, IV, VI (Oculomotor, trochlear, abducent)			
20. V (sensory, motor, says would check corneal reflex)			
21. VII Facial (symmetry, motor function)			
22. VIII Vestibulocochlear (whisper test, Weber or Rinnes test)			
23. IX, X Glossopharyngeal, vagus (uvula, voice, pronation)			
24. XI Accessory (trapezius, sternocleidomastoid)			
25. XII Hypoglossal (tongue movements, tongue power)			
PERIPHERAL NERVOUS SYSTEM			
26. Checks upper and lower limb tone bilaterally			
27. Checks upper and lower limb sensation bilaterally			
28. Checks upper and lower limb power bilaterally			
CEREBELLUM			
29. Checks gait			
30. Checks balance e.g. Romberg test			
31. Checks for evidence of one of the following: <ul style="list-style-type: none"> • Dysidiadochokinesis • Ataxia • Nystagmus • Intention tremor • Slurred speech • Heel to shin test 			
CORTICAL FUNCTION			
32. Checks patient alert and orientated e.g. GCS 15/15, ability to perform arithmetic			
REFLEXES			
33. Identifies/ discusses bilateral upper reflexes: triceps, biceps, supinator			
34. Identifies/ discusses bilateral lower reflexes: patella, achilles, plantar: Babinski reflexes			
35. DIFFERENTIALS- any ONE of these			
TIA, CVA: INFARCTION/ HAEMORRHAGE, HEMIPLEGIC MIGRAINE BELLS PALSY			
36. RED FLAG SIGNS- any ONE of these			
FAST positive			
Reduced level of consciousness			
Signs of meningitis			
Altered behaviour or function following head injury			
Seizures in the absence of a pmh of epilepsy			
Consider high force mechanism of injury			
On anticoagulants			

TOTAL POSSIBLE SCORE: 72

TOTAL SCORE : ____

PASS MARK above 40 % (29 points) Y / N

COMMENTS:

EXAMINER’S SIGNATURE: _____ DATE: _____

NAME: _____

Though the ICN (2019) has presented a definition for NP/APN that can be applied internationally, the definition also states that the characteristics of the role should be shaped by its context or country. In countries with evolving NP roles, the scope or expectations of the role have not yet been clearly established, which challenges the validity of an educational assessment of advanced clinical competence. Thus, there is a need for national credentialing of NP/APNs to create an understanding of the scope and practice for practitioners, consumers and policymakers (Loversidge, 2016).

5. Limitations

According to Tong et al. (2007), an ideal focus group should include at least four participants. However, since four of the five focus groups were conducted on the same day as the students' completed their OSCE, it was of particular interest to arrange the focus groups by prioritising the students' wishes rather than methodological issues. It was most convenient for the students to participate in a focus group as they finished their OSCE. Thus, the focus groups had three participants as the students finished their OSCE in groups of three. The author conducting the focus groups did not find this to be a considerable disadvantage, as the small groups contributed to a safe setting in which the students could voice their opinions in turn. This study did not collect data on the students' experiences with their feedback after the OSCE, since four out of the five focus groups had not received their exam results or feedback.

6. Conclusion

This study contributes to the understanding of the use of the OSCE to assess advanced clinical competence of NP students. The findings indicate that, although the participating NP students and examiners experienced challenges with the OSCE, they found it to be an appropriate form of assessment for an advanced level of competence. Challenges concerning the exam included a misalignment between the course and the exam, insufficient training, student stress, the unnatural setting of the simulation and the demonstration and assessment of the expected level of advanced clinical competence. This study advocates for the following course design changes to address these challenges: a constructive alignment between the course and the exam, more training with real patients, a use of both formative and summative assessment as well as a second exam with a real patient after the student's clinical placement. On a more general note, countries with evolving advanced nursing roles and a lack of a clearly defined NP role will challenge the OSCE's criteria for the expected level of advanced clinical competence in an educational context. National credentialing must be created for both NP education and the NP role to ensure clinical competence that is in line with the needs of health care services and that promotes patient safety.

Declarations of interest

None.

Funding source

This study is a part of the research project "Providing person-centred healthcare—by new models of advanced nursing practice in cooperation with patients, clinical field and education", which is funded by the The Research Council of Norway.

Acknowledgments

The authors would like to acknowledge and thank all the nurse practitioner students and examiners who participated in the study.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.nepr.2019.04.001>.

References

- Aronowitz, T., Aronowitz, S., Mardin-Small, J., Kim, B., 2017. Using Objective Structured Clinical Examination (OSCE) as education in advanced practice registered nursing education. *J. Prof. Nurs.* 33 (2), 119–125. <https://doi.org/10.1016/j.profnurs.2016.06.003>.
- Bagnasco, A., Tolotti, A., Pagnucci, N., Torre, G., Timmins, F., Aleo, G., Sasso, L., 2016. How to maintain equity and objectivity in assessing the communication skills in a large group of student nurses during a long examination session, using the Objective Structured Clinical Examination (OSCE). *Nurse Educ. Today* 38, 54–60. <https://doi.org/10.1016/j.nedt.2015.11.034>.
- Barry, M., Noonan, M., Bradshaw, C., Murphy-Tighe, S., 2012. An exploration of student midwives' experiences of the Objective Structured Clinical Examination assessment process. *Nurse Educ. Today* 32 (6), 690–694. <https://doi.org/10.1016/j.nedt.2011.09.007>.
- Barry, M., Bradshaw, C., Noonan, M., 2013. Improving the content and face validity of OSCE assessment marking criteria on an undergraduate midwifery programme: a quality initiative. *Nurse Educ. Pract.* 13 (5), 477–480. <https://doi.org/10.1016/j.nepr.2012.11.006>.
- Biggs, J.B., Tang, C., 2011. *Teaching for Quality Learning at University: what the Student Does*, fourth ed. McGraw-Hill, New York, NY.
- Bikker, A., Fitzpatrick, B., Murphy, D., Mercer, S.W., 2015. Measuring empathic, person-centred communication in primary care nurses: validity and reliability of the Consultation and Relational Empathy (CARE) Measure. *BMC Fam. Pract.* 16 (1), 60–69. <https://doi.org/10.1186/s12875-015-0374-y>.
- Boman, E., Egilsdottir, Ö.H., Levy-Malmberg, R., Fagerström, L., 2018. Nurses' understanding of a developing nurse practitioner role in the Norwegian emergency care context: a qualitative study. *Nord. J. Nurs. Res.* 39 (1), 47–54. <https://doi.org/10.1177/2057158518783166>.
- Braun, V., Clarke, V., 2013. *Successful Qualitative Research: A Practical Guide for Beginners*. Sage, Los Angeles, CA.
- Christiansen, J., Fagerström, L., 2016. Need for advanced practice nursing of older persons in the Nordic region: nursing leaders' perspective. *Nordisk Sygeplejeforskning* 6 (3), 278–294. <https://doi.org/10.18261/issn.1892-2686-2016-03-06>.
- Creswell, J.W., Poth, C.N., 2018. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches*, fourth ed. Sage, Thousand Oaks, CA.
- East, L., Peters, K., Halcomb, E., Raymond, D., Salamonson, Y., 2014. Evaluating objective structured clinical assessment (OSCA) in undergraduate nursing. *Nurse Educ. Pract.* 14 (5), 461–467. <https://doi.org/10.1016/j.nepr.2014.03.005>.
- Engström, M., Löfmark, A., Vae, K.J.U., Mårtensson, G., 2017. Nursing students' perceptions of using the Clinical Education Assessment tool AssCE and their overall perceptions of the clinical learning environment—a cross-sectional correlational study. *Nurse Educ. Today* 51, 63–67. <https://doi.org/10.1016/j.nedt.2017.01.009>.
- Fagerström, L., 2011. *Avancerad Klinisk Sjuksköterska: Avancerad Klinisk Omvårdnad I Teori Och Praxis [Advanced Practice Nursing: Advanced Clinical Nursing in Theory and Practice]*. Studentlitteratur, Lund, Sweden.
- Fagerström, L., Glasberg, A.-L., 2011. The first evaluation of the advanced practice nurse role in Finland—the perspective of nurse leaders. *J. Nurs. Manag.* 19 (7), 925–932. <https://doi.org/10.1111/j.1365-2834.2011.01280.x>.
- Ferguson, L.M., Myrick, F., Yonge, O., 2006. Ethically involving students in faculty research. *Nurse Educ. Today* 26 (8), 705–711. <https://doi.org/10.1016/j.nedt.2006.07.021>.
- Gould, O.N., Johnstone, D., Wasylkiw, L., 2007. Nurse practitioners in Canada: beginnings, benefits, and barriers. *J. Am. Acad. Nurse Pract.* 19 (4), 165–171. <https://doi.org/10.1111/j.1745-7599.2007.00210.x>.
- Harden, R.M., 2016. Revisiting 'Assessment of clinical competence using an objective structured clinical examination (OSCE)'. *Med. Educ.* 50 (4), 376–379. <https://doi.org/10.1111/medu.12801>.
- Hettinga, A.M., Denessen, E., Postma, C.T., 2010. Checking the checklist: a content analysis of expert- and evidence-based case-specific checklist items. *Med. Educ.* 44 (9), 874–883. <https://doi.org/10.1111/j.1365-2923.2010.03721.x>.
- International Council of Nurses (ICN), 2019. Definition and Characteristics of the Role. Retrieved on 09 March 2019 from. <https://international.aanp.org/Practice/APNRoles>.
- Johnston, A.N.B., Weeks, B., Shuker, M.A., Coyne, E., Niall, H., Mitchell, M., Massey, D., 2017. Objective structured clinical examination; pre-licensure; undergraduate nursing; student; assessment; perception; evaluation. *Clin. Simul. Nurs.* 13 (3), 127–142. <https://doi.org/10.1016/j.ecns.2016.11.002>.
- Kallio, H., Pietila, A.M., Johnson, M., Kangasniemi, M., 2016. Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *J. Adv. Nurs.* 72 (12), 2954–2965. <https://doi.org/10.1111/jan.13031>.
- Kitzinger, J., 1994. The methodology of focus groups: the importance of interaction between research participants. *Sociol. Health Illness* 16 (1), 103–121. <https://doi.org/10.1111/1467-9566.ep11347023>.
- Knowles, M.S., Holton, E.F., Swanson, R.A., 2015. *The Adult Learner: the Definitive Classic in Adult Education and Human Resource Development*, eighth ed. Routledge, New York, NY.
- Laurant, M., van der Biezen, M., Wijers, N., Watananirun, K., Kontopantelis, E., van Vugh, A., 2018. Nurses as substitutes for doctors in primary care. *Cochrane Database Syst. Rev.* 2018 (12), CD012801. <https://doi.org/10.1002/14697528.cd012801>.

- Rev. 7, 1465–1858. <https://doi.org/10.1002/14651858.CD001271.pub3>.
- Lincoln, Y.S., Guba, E.G., 1985. *Naturalistic Inquiry*. Sage Publications, Inc., London, England.
- Loversidge, J.M., 2016. Government regulation: parallel and powerful. In: DeNisco, S.M., Barker, A.M. (Eds.), *Advanced Practice Nursing: Essential Knowledge for the Profession*, third ed. Jones & Bartlett Learning, Burlington, MA, pp. 251–280.
- Malterud, K., 2017. *Kvalitative metoder i medisinsk forskning: en innføring* [Qualitative Method in Medical Research: An Introduction, fourth ed. Universitetsforlaget, Oslo, Norway].
- Martínez-González, N.A., Djalali, S., Tandjung, R., Huber-Geismann, F., Markun, S., Wensing, M., Rosemann, T., 2014. Substitution of physicians by nurses in primary care: a systematic review and meta-analysis. *BMC Health Serv. Res.* 14 (1), 214. <https://doi.org/10.1186/1472-6963-14-214>.
- McCormack, B., von Dulmen, S., Eide, H., Skovdal, K., Eide, T., 2017. Person-centred healthcare research. In: McCormack, B., von Dulmen, S., Eide, H., Skovdal, K., Eide, T. (Eds.), *Person-Centredness in Healthcare Policy, Practice and Research*. Wiley-Blackwell, West Sussex, UK, pp. 3–19.
- Miller, B., Carr, K.C., 2016. Integrating standardized patients and objective structured clinical examinations into a nurse practitioner curriculum. *J. Nurse Pract.* 12 (5), 201–210. <https://doi.org/10.1016/j.nurpra.2016.01.017>.
- Helse- og omsorgsdepartementet [Ministry of Health and Care Services], 2015. *Fremtidens Primærhelsetjeneste – Nærhet Og Helhet (Meld. St. 26 2014–2015)* [The Primary Health and Care Services of Tomorrow—Localised and Integrated (White Paper No. 26 2014–2015)]. Retrieved on 09 March 2019 from. <https://www.regjeringen.no/en/dokumenter/meld.-st.-26-20142015/id2409890/>.
- Muldoon, K., Biesty, L., Smith, V., 2014. 'I found the OSCE very stressful': student midwives' attitudes towards an objective structured clinical examination (OSCE). *Nurse Educ. Today* 34 (3), 468–473. <https://doi.org/10.1016/j.nedt.2013.04.022>.
- Muthamilselvi, G., Ramanadin, P., 2014. Objective structured clinical examination: emerging trend in nursing profession. *Int. J. Nurs. Educ. Scholarsh.* 6 (1), 43–47. <https://doi.org/10.5958/j.0974-9357.6.1.009>.
- Najjar, R.H., Docherty, A., Miehle, N., 2016. Psychometric properties of an objective structured clinical assessment tool. *Clin. Simul. Nurs.* 12 (3), 88–95. <https://doi.org/10.1016/j.ecns.2016.01.003>.
- Navas-Ferrer, C., Urco-Pardo, F., Subirón-Valera, A.B., Germán-Bes, C., 2017. Validity and reliability of objective structured clinical evaluation in nursing. *Clin. Simul. Nurs.* 13 (11), 531–554. <https://doi.org/10.1016/j.ecns.2017.07.003>.
- Newhouse, R.P., Stanik-Hutt, J., White, K.M., Johantgen, M., Bass, E.B., Zangaro, G., Wilson, R.F., Fountain, L., Steinwachs, D.M., Heindel, L., Weiner, J.P., 2011. Advanced practice nurse outcomes 1990–2008: a systematic review. *Nurs. Econ.* 29 (5), 230–250. Retrieved on 09 March 2019 from. <https://ezproxy2.usn.no:3759/docview/898419565?accountid=43239>.
- Nulty, D.D., Mitchell, M.L., Jeffrey, C.A., Henderson, A., Groves, M., 2011. Best practice guidelines for use of OSCEs: maximising value for student learning. *Nurse Educ. Today* 31, 145–151. <http://doi.org/10.1016/j.nedt.2010.05.006>.
- Palese, A., Bulfone, G., Venturato, E., Urli, N., Bulfone, T., Zanini, A., Fabris, S., Tomietto, M., Comisso, I., Tosolini, C., Zuliani, S., Dante, A., 2012. The cost of the Objective Structured Clinical Examination on an Italian nursing bachelor's degree course. *Nurse Educ. Today* 32 (4), 422–426. <https://doi.org/10.1016/j.nedt.2011.03.003>.
- Patton, M.Q., 2015. *Qualitative Research & Evaluation Methods: Integrating Theory and Practice*, fourth ed. Sage, Thousand Oaks, CA.
- Polit, D.F., Beck, C.T., 2017. *Nursing Research: Generating and Assessing Evidence for Nursing Practice*, tenth ed. Wolters Kluwer, Philadelphia, PA.
- Raleigh, M., Allan, H., 2017. A qualitative study of advanced nurse practitioners' use of physical assessment skills in the community: shifting skills across professional boundaries. *J. Clin. Nurs.* 26, 2025–2035. <https://doi.org/10.1111/jocn.13613>.
- Rushforth, H.E., 2007. Objective structured clinical examination (OSCE): review of literature and implications for nursing education. *Nurse Educ. Today* 27 (5), 481–490. <https://doi.org/10.1016/j.nedt.2006.08.009>.
- Sandelowski, M., 2000. Whatever happened to qualitative description? *Res. Nurs. Health* 23 (4), 334–340. [https://doi.org/10.1002/1098-240X\(200008\)23:4%3e334::AID-NUR9%3c3.0.CO;2-G](https://doi.org/10.1002/1098-240X(200008)23:4%3e334::AID-NUR9%3c3.0.CO;2-G).
- Schober, M., Affara, F., 2016. *International Council of Nurses: Advanced Nursing Practice*. Blackwell Publishing, Oxford, UK.
- Smith, V., Muldoon, K., Biesty, L., 2012. The Objective Structured Clinical Examination (OSCE) as a strategy for assessing clinical competence in midwifery education in Ireland: a critical review. *Nurse Educ. Pract.* 12 (5), 242–247. <https://doi.org/10.1016/j.nepr.2012.04.012>.
- Tong, A., Sainsbury, P., Craig, J., 2007. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int. J. Qual. Health Care* 19 (6), 349–357. <https://doi.org/10.1093/intqhc/mzm042>.
- Walsh, M., Bailey, P., Koren, I., 2009. Objective structured clinical evaluation of clinical competence: an integrative review. *J. Adv. Nurs.* 65 (8), 1584–1595. <https://doi.org/10.1111/j.1365-2648.2009.05054.x>.
- Ward, H., Barratt, J., 2009. *Passing Your Advanced Nursing OSCE: A Guide to Success in Advanced Clinical Skills Assessment*. Radcliffe Publishing, Oxford, UK.
- Ward, H., Willis, A., 2006. Assessing advanced clinical practice skills. *Prim. Health Care* 16 (3), 22–24. Retrieved on 09 March 2019 from. <https://ezproxy2.usn.no:3759/docview/217837477?accountid=43239>.
- Webb, C., Kevern, J., 2000. Focus groups as a research method: a critique of some aspects of their use in nursing research. *J. Adv. Nurs.* 33, 798–805. <https://doi.org/10.1046/j.1365-2648.2001.01720.x>.
- World Medical Association, 2013. *World Medical Association Declaration of Helsinki: ethical principles for medical research involving human subjects*. *J. Am. Med. Assoc.* 310 (20), 2191–2194. <https://doi.org/10.1001/jama.2013.281053>.
- Yanhua, C., Watson, R., 2011. A review of clinical competence assessment in nursing. *Nurse Educ. Today* 31 (8), 832–836. <https://doi.org/10.1016/j.nedt.2011.05.003>.