# Correlation of OSCE Scores with Preceptor Ratings As a Measure of Clinical Competence

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## Abstract

One of the most challenging tasks today in advanced nursing education is to evaluate or assess clinical competence objectively. Traditional methods of assessment such as written exams do not necessarily correlate well with clinical ability and skill. Currently, faculty members supervising nurse practitioner students rely on individual preceptors and periodic site visits to evaluate student performance in the clinical setting. A lack of standardization between mentors, the vast differences in patient encounters, and the tendency of preceptors to give hyper-inflated marks hamper the objectivity of this measure for clinical competence. Objective structured clinical examinations (OSCE) provide a reliable and equitable measure of student performance and clinical proficiency. Using Benner's *Novice to Expert* model, faculty members translate both preceptor ratings and OSCE scores into descriptors: each nurse practitioner student is rated as an advanced beginner, competent, proficient, or expert practitioner. Faculty members at a Midwest University Family Nurse Practitioner program compared preceptor ratings of students with the students' OSCE scores to determine if there was any correlation between the two variables. A Spearman *rho* correlation coefficient determined a weak positive correlation between preceptor ratings and OSCE scores. Results suggest that OSCE scores are a reliable measure of student clinical proficiency. Histograms give visual evidence of preceptor hyper-inflation of ratings. Findings indicate that OSCEs can be used for objective student measurement of clinical competence when travel to clinical sites is hampered by distance, time, and low client census.

One of the most challenging tasks today in advanced nursing education is to evaluate or assess clinical competence objectively. Traditional methods of assessment such as written exams do not necessarily correlate well with clinical ability and skill (Harden, Stevenson, Downie, & Wilson, 1975; Kirton & Kravitz, 2011; Salinitri, O'Connell, Garwood, Lehr, & Abdallah, 2012; Ward & Barrett, 2005). Nurse researchers argue that it is essential that objective evaluation of

nursing students' clinical competence be incorporated in education. Safe, quality, high standard, and cost effective care are necessary to lead to positive client outcomes (Walsh, Bailey, & Koren, 2009). Additionally, evaluation in a wide array of situations is essential to the education process because students are exposed to various patient health issues in the clinical area. Each student's clinical experience is different and therefore not equivalent. With the diversity of clinical experiences each student is exposed to, it becomes challenging to measure program outcomes (McWilliam & Botwinski, 2010).

Currently, faculty members of nurse practitioner students rely on individual preceptors to evaluate student performance in the clinical setting. There is a lack of standardization between mentors, and some mentors have a tendency to give hyper-inflated marks (Baid, 2011). Faculty members then make periodic site visits to assess progress. This, however, has its disadvantages. Time constraints and a busy clinical environment may hamper observation of student clinical performance. Additionally, when attempting to do site visits, long distances between school and clinic sites can prove problematic, as well as patients who fail to keep scheduled appointments, and vast differences in patient encounters.

**Literature Review**

The objective structured clinical examination (OSCE) is one method now being used to standardize evaluation criteria and assess clinical proficiency. Originally developed by Harden (1975), a multitude of disciplines are now using the OSCE—chiropractic, physical therapy, pharmacy, midwifery, dental, dietetics, medicine, social work, speech pathology—to evaluate students. The OSCE is deemed reliable and more equitable since each student performs the same scenario and is marked according to the same criteria, making the examination structured and objective.

The OSCE format consists of students rotating through various stations. A standardized patient "playacts" a scenario giving each student the same opportunity to evaluate the condition. Exercises are designed to allow student evaluation through the entire patient encounter—including history taking, physical examination, identification of problems, selection of necessary tests needed, interpretation of results of the encounter, and recommendations for appropriate treatment (Oranye, Ahmad, Ahmad, &

Baker, 2012; Ward & Barrett, 2009). Evaluators in each station provide direct observation of each student's performance using a checklist. Additionally, scenarios can be videotaped to allow for replay and student self-evaluation at a later time.

It is essential to realize that abilities other than academic abilities are necessary in the clinical setting. Integration of active learning into nurse practitioner curriculum is one strategy to enhance knowledge and self-directed learning skills and to advance problem solving skills. Students need to transfer classroom learning to clinical practice (Kanada et al., 2012; McWilliam & Botwinski, 2010; Salinitri et al., 2012).

The OCSE is a well-established tool for assessing clinical competence because it is a performance based test that evaluates history taking skills, physical examination skills, clinical decision making, and formulation of differential diagnosis. Students are expected to interpret clinical findings, display professional judgment, interpersonal and communication skills, problem solving skills, and management of the clinical situation (Brannick et al., 2011; Salinitri et al., 2012; Ward & Barrett, 2005). Multiple studies have shown reliability and validity of the OSCE in medicine and related health fields (Brannick, Erol-Korkmaz, & Prewett, 2011; Martin & Jolly, 2001; McWilliam & Botwinski, 2012; Ward & Barrett, 2005). It has become a nationally recognized model for assessment of clinical proficiency.

Students' perceptions of the OSCE have generally been positive. Jay (2007), in a qualitative study, found students to say the test was fair, equitable and consistent; relevant to practice; suited learning style and improved later recall. One student was quoted as saying, "when you do something practically that helps you learn rather than just reading and writing notes" (p. 34). Some of the learning benefits noted included: OSCEs motivate students to learn actual psychomotor skills rather than just "knowing how" to do something; OSCEs promote deep learning, shared learning and cooperation; and preparing for OSCEs increases confidence in carrying out skills. Some negative comments found included incredible anxiety and a complaint that OSCEs seemed like play acting.

Rouse (2010) found that OSCEs give students an opportunity to show what they can do; they allow practice under stressful situations. Students in the Rouse (2010) study also stated the intense learning and practice to try and ensure a good pass

ensured learning “stayed put”. Students also expressed that OSCEs increased their confidence in clinical skills and improved their ability to give rationale for clinical skills and to build communication skills.

Many advantages of the OSCE have been identified. The OSCE is more standardized with the same examiner assessing one topic compared to large number of mentors assessing individual students. Additionally, the OSCEs assess more than just tasks but also professionalism, quality improvement, and documentation (Baid, 2011). The OSCE demonstrates advantages over traditional multiple choice examinations in assessing communication and interpersonal skills, professional judgment, and moral/ethical reasoning (Oranye et al., 2012).

McClimens, Kenyon, McLean, and Soltani (2012) state that while the OSCE occurs in an artificial setting the actual experience is sufficiently close to real life to induce a level of disquiet and stress in students similar to those in real clinical situations and that the students who pass will feel their skills have been genuinely tested. By taking place in controlled environments, timely feedback can be incorporated into the process. Moreover, the evaluative strategy facilitates the identification of curriculum weakness (Ward & Barrett, 2005).

The OSCE was designed with the intent of standardizing the testing of clinical competence and minimizing the biases of traditional written evaluation methods. It showed consistency among scores—students who scored well at an OSCE early in their program continued to score well in later OSCEs, while those who did poorly continued to do poorly (Russell, Hoiriis, & Guagliardo, 2012). Kanada et al. (2012) looked for a correlation between OSCE performance and clinical training assessments—and found none.

According to Harden (1975), the designer of the OSCE, the greatest disadvantage is time preparation. Other researchers have identified limitations of OSCE including that students who lack verbal skills do poorly as well as those unable to overcome nerves during a stressful event. However limitations can also be viewed as an opportunity—students need to learn to develop skills in presenting information to others; and also need to learn to manage anxiety in stressful situations. One additional limitation cited was potential bias of instructors participating as examiners. Authors

recommended delegating other educators to act as evaluators to reduce bias (Baid, 2011).

## METHODS

Looking for an opportunity to assess clinical judgment away from the practice setting, faculty members in a family nurse practitioner program in a Midwest University, implemented OSCEs in the spring of each academic year to assess student clinical proficiency. After receiving IRB approval, faculty members completed a retrospective analysis of the data, comparing student aggregated OSCE scores with preceptor ratings from the same time. The intention was to determine if there was any correlation between OSCE scores and preceptor ratings.

The clinical evaluation tools for the graduate students have been created using Benner's *Novice to Expert* framework. Benner (1984) proposes that as nurses learn new content and skills their abilities progress in a logical and stepwise development along the continuum from novice to expert. This approach helps the student identify their current skills and abilities while setting goals for future performance. Benner's framework also allows preceptors and faculty to objectively measure the students' progress toward skill acquisition and mastery.

Preceptors are asked to rate each student's performance in the clinical arena after every rotation. Ratings are assessed for history taking skills, physical examination skills, ability to create a differential diagnosis, and the ability to recommend treatment plans as well as professional behavior. The overall rating is guided by the headings advanced beginner, competent practitioner, proficient practitioner, and expert nurse practitioner. It would be expected that a student progress from advanced beginner in an early rotation and grow into a proficient practitioner by their later rotations.

Scores for OSCEs are based on the same skill sets as above. In objectively transferring a numerical score received on the checklist to a descriptive attribute, students who scored below a 75% were considered advanced beginners; students who scored 75%-85% were considered competent; students who scored 86%-94% were considered proficient; and students who scored a 95% or better were considered expert practitioners.

## RESULTS

Data were collected from the years 2011 to 2013 for a total of 74 student records. Preceptor ratings were compared to OSCE scores for the same time frame. A Spearman *rho* correlation coefficient was calculated examining the relationship between preceptor ratings and OSCE scores. A weak positive correlation was found (*rho* (72) = 0.255., *p<0.05,*) indicating a significant relationship between the two variables. Preceptor ratings did correlate with OSCE scores. The mean preceptor rating was 85.3 (*sd* = 12.3) while the mean OSCE score was 77.2 (*sd* = 10.1). Histograms give visual evidence of higher scores given by preceptors as seen in figures 1 and 2. Limitations to the study include a small sample size, a homogenous population, and lack of randomization.

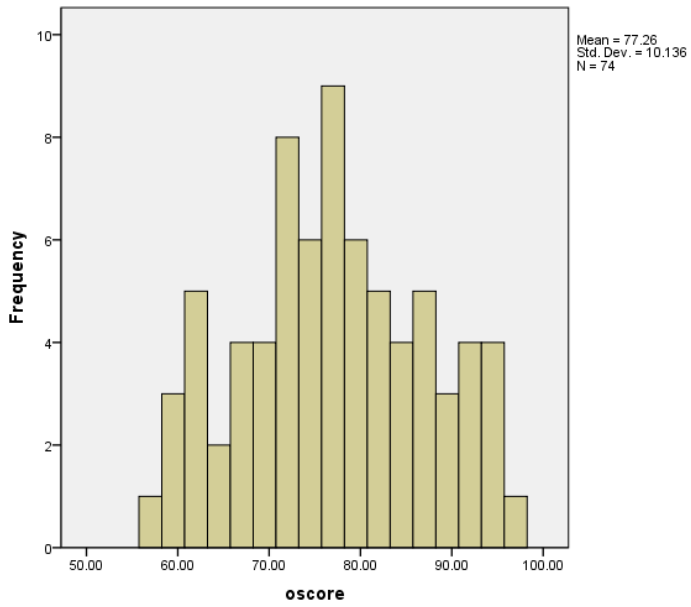


Figure 1: OSCE scores for Family Nurse Practitioner students

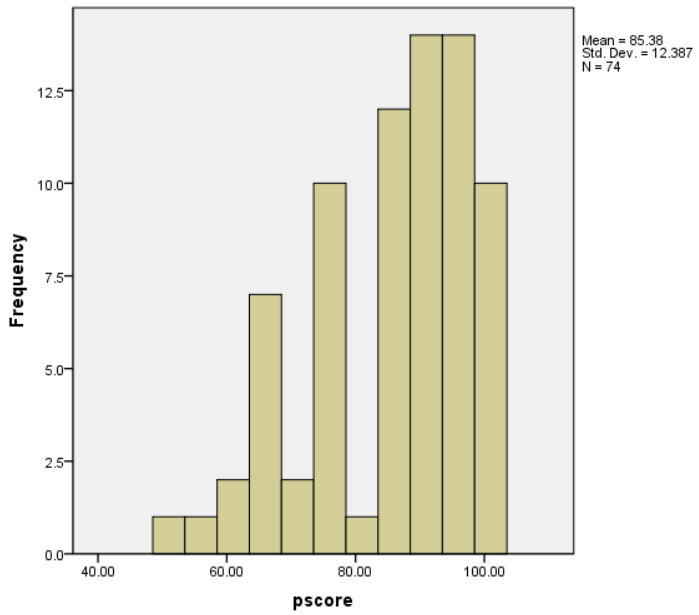


Figure 2: Preceptor ratings for Family Nurse Practitioner students

## DISCUSSION

Nurse Practitioners are called to be expert clinicians as well as transformational leaders. Each year the health care system becomes more challenging and the complexity more demanding. The expansion of insured individuals under the Affordable Care Act, the nation's population growth, and the increasing age of patients as baby boomers retire, will cause a surge in the need for primary care services (Iglehart, 2013). Metrics in the Affordable Care Act reward quality over quantity of patient services (Kumar, 2014). It is not enough to teach new NPs the skills, they must demonstrate mastery and integration of the role to provide quality health care to the nation's growing population.

The Institute of Medicine (IOM) (2011) recommends nurses should be free to "practice to the full extent of their education and training". Accessible, high quality care cannot be achieved without exceptional nursing care and leadership. Centers for Medicare and Medicaid Services (CMS) show 62% more NPs are practicing in rural areas in 2012 than 2011, and furthermore, over two thirds of these NPs excelled at providing primary care, receiving awards under the Primary Care Incentive Program (McMenamin, 2013). Many of these NPs are working with specialty physicians to offer primary care services without requiring distance travel for rural patients.

Nurse Practitoners need to be partners and leaders in transforming healthcare systems to deliver high quality patient focused care. OSCEs provide a valuable tool to assess student readiness to be a part of the complex health system. Faculty can be reassured that OSCE results reflect the student's growing ability to assume practice roles and leadership responsibilities with patients in a variety of settings.

## CONCLUSIONS

Both preceptor ratings and OSCE scores provide valuable information about student clinical proficiency and aid in the measure of program outcomes. Faculty ratings on OSCE exams follow a more normal distribution, suggesting a more objective evaluation. Preceptor ratings are more skewed to the high end. Since a student works with an individual preceptor over the course of a full semester, this likely represents a relational factor and shows some degree of hyper-inflation.

The OSCE allows faculty to determine gaps in clinical content and experience. The format is stricter and pushes students to use critical thinking. Performing site visits on every student in the program is time consuming and is often hampered by low patient census, patient no-shows, and vast differences in the reason for patient encounters. Findings indicate that OSCEs can be used to evaluate student clinical competence and provide a reliable measurement of clinical proficiency especially in the face of extenuating circumstances.

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