

## Evaluation of nursing students about the objective structured clinical examination

### Avaliação de estudantes de enfermagem sobre o exame clínico objetivamente estruturado

Jéssica Naiara de Medeiros Araújo<sup>1</sup>, Ana Paula Nunes de Lima Fernandes<sup>2</sup>, Raianny Alves Costa<sup>3</sup>,  
Marcos Antonio Ferreira Júnior<sup>4</sup>, Diana Paula de Souza Rego Pinto Carvalho<sup>5</sup>, Allyne Fortes Vitor<sup>6</sup>

<sup>1</sup> Nurse. Student of the Nursing Graduate Program, Master level, at Universidade Federal do Rio Grande do Norte (UFRN). Natal, RN, Brazil. E-mail: [jessicanaiara\\_rn@hotmail.com](mailto:jessicanaiara_rn@hotmail.com).

<sup>2</sup> Nurse, Student of the Nursing Graduate Program, Master level, at UFRN. Natal, RN, Brazil. E-mail: [anapaulanlf@yahoo.com.br](mailto:anapaulanlf@yahoo.com.br).

<sup>3</sup> Nurse. Natal, RN, Brazil. E-mail: [raiannya@hotmail.com](mailto:raiannya@hotmail.com).

<sup>4</sup> Nurse, Ph.D in Health and Development at Central-Western Region. Associate Professor at UFRN. Natal, RN, Brazil. E-mail: [marcos\\_nurse@hotmail.com](mailto:marcos_nurse@hotmail.com).

<sup>5</sup> Nurse, Master in Nursing. Student of the Nursing Graduate Program, Doctoral level, at UFRN. Natal, RN, Brazil. E-mail: [diana-rego@hotmail.com](mailto:diana-rego@hotmail.com).

<sup>6</sup> Nurse, Ph.D in Nursing. Associate Professor at UFRN. Natal, RN, Brazil. E-mail: [allynefortes@yahoo.com.br](mailto:allynefortes@yahoo.com.br).

#### ABSTRACT

The Objective Structured Clinical Examination (OSCE) is considered a fundamental element to improve teaching and learning. It can be understood as a measurement tool of clinical competencies with adoption of standard procedures. A qualitative study aimed to describe the evaluation of students about the OSCE use as strategy to promote the teaching-learning process in Clinical Nursing. A focus group with 27 students was created for data collection with information extracted from three guiding questions. Data was analyzed using Content Analysis technique. Two categories emerged from the first guiding question: the use of SOP; and learning strategy. Three categories emerged from the second question: main feelings; valid experience; and assessment method. From the third question, two categories were identified: learning from errors; and similarity with practice. The OSCE constitutes an assessment strategy that positively contributed with the teaching-learning process in Clinical Nursing.

**Descriptors:** Simulation; Learning; Teaching Materials; Education, Nursing.

#### RESUMO

O Exame Clínico Objetivamente Estruturado (Objective Structured Clinical Examination/OSCE) é apontado como elemento fundamental na melhoria do ensino-aprendizagem. Pode ser compreendido como ferramenta de mensuração de competências clínicas com adoção de procedimentos padronizados. Estudo qualitativo objetivou descrever a avaliação dos estudantes sobre o uso do OSCE como estratégia de promoção do processo de ensino-aprendizagem em Enfermagem Clínica. Foi formado um grupo focal de 27 estudantes para a coleta de dados com informações extraídas a partir de três questões norteadoras. Os dados foram analisados mediante a técnica de Análise de Conteúdo. Com a primeira questão norteadora surgiram duas categorias: utilização do POP; e estratégia de aprendizagem. Mediante a segunda questão elencou-se três categorias: principais sentimentos; experiência válida; e método avaliativo. Com a terceira identificou-se duas categorias: aprender com os erros; e semelhança com a prática. O OSCE constitui uma estratégia avaliativa que contribuiu positivamente no processo de ensino-aprendizagem em Enfermagem Clínica.

**Descritores:** Simulação; Aprendizagem; Materiais de Ensino; Educação em Enfermagem.

## INTRODUCTION

The nursing teaching-learning process should stimulate health attention practices and establish a critical-reflexive education, with acquisition of knowledge, abilities and attitudes to make students capable to act in hospital practices. Thus, it is essential for curriculum of nursing courses to consider practice and theoretical activities<sup>(1)</sup>.

There is a strong tendency of early insertion of students in practical actions, as in a learning setting, they experience difficulties to remember knowledge obtained in theoretical classes and they feel insecure to apply it into practice. This problem comes from the dissociation between clinical learning and environment/situation in which it will be applied<sup>(2)</sup>.

The Objective Structured Clinical Examination (OSCE) is pointed out as a fundamental element to improve teaching and learning. It is a tool to measure clinical competencies with adoption of standard procedures. Besides, it recovers previous knowledge acquired by students, amplifying learning opportunities in a clinical setting<sup>(3)</sup>.

The OSCE was first applied in medicine in 1975 by Harden, especially in United States<sup>(4)</sup>. More recently, in nursing courses, it is used in other countries, as Chile, Egypt, Ireland, United Kingdom and United States<sup>(1,5-9)</sup>. In Brazil, this strategy is firstly used in medicine, in a faculty at Marília. In pharmaceutical courses, it was firstly used at the northeast in 1990<sup>(3,10-11)</sup>. It recently started to be used in nursing, following experience reports in which OSCE was applied in a university at Rio Grande do Norte state<sup>(12)</sup>.

To simulate real clinical cases in academic training means to broaden a problematizing focus that helps, overall, learning construction<sup>(3)</sup>. As a way to acquire knowledge, the use of OSCE becomes important, once professors position students in front of real situations for decision making and nursing conducts. It consists of a way to evaluate their clinical rationale. It is structured in stations, in which a pre-determined time for its

development is presented, forming a circuit where students are in a rotation and simultaneous way to multiple subjects, in which themes depend on learning objectives<sup>(1,13)</sup>.

As a methodological instrument to execute the OSCE, the Standard Operational Protocol (SOP) exposes each sequential step that the student should follow. The intention is to guide procedures development and clarify doubts. SOPs should be updated and followed by students in standardized ways<sup>(14)</sup>.

Laboratory simulations with the OSCE promote an approximation with real situations that will be experienced in health attention environments. Thus, it is fundamental to comprehend the use of this strategy as a learning-teaching tool. This comprehension can serve as guide to use the strategy in the student training process. The lack of studies in Brazil assessing the OSCE use in the training of professional nurses is noticed.

Facing this strategy use, the following research question arises: What is the student's evaluation about the OSCE used as strategy to improve the teaching-learning process?

Thus, this study aims to describe student's evaluations about the OSCE used as promotion strategy for the teaching-learning process in Clinical Nursing.

## METHODS

This is a descriptive qualitative study about the evaluation of OSCE on teaching and learning Clinical Nursing in a nursing undergraduate course of a public university located in northeast Brazil. This study was conducted at the Nursing Department of the referred university.

The population was composed by 46 students from the seventh period of the Nursing undergraduate course, who had completed the Clinical Nursing discipline that adopted the OSCE since 2013 as teaching strategy and learning evaluation. In the occasion, a focus group was created for data collection. Students were included if they

had completed the referred discipline during the period 2013.2 and accepted to participate in the research.

Students were excluded if they were absent at the data collection day and if they did not participate in the evaluation using the OSCE. The sample was intentionally formed once subjects were chosen in accordance with the study's aims. It was constituted by the students who accepted to participate in the focus group and signed the Free Informed Consent and the Authorization Term for voice use, obtaining a total of 27 participants denominated subjects<sup>(15)</sup>.

Data collection was in August of 2014 using questions about the proposed theme that guided the focus group activities. The lines were recorded and analyzed after. Guiding questions were elaborated in accordance with the study's objectives, to learn about: 1) OSCE: What is your opinion about the application of this teaching strategy in Clinical Nursing? 2) How was your experience? 3) Do you think you obtained or will obtain a better performance in practical hospital activities with the use of this strategy? How?

Data were analyzed through Content Analysis technique, including the following steps: pre-analysis,

inference and interpretation. It should be noticed that categorization happened posteriorly<sup>(16)</sup>. Determinations from the Resolution nº 466/2012 of the National Health Council were obeyed<sup>(17)</sup>. The study obtained approval of the Ethics in Research Committee under the protocol nº 617.576 and CAAE nº 28667714.3.0000.5537.

## RESULTS

Participants were initially asked about what was the OSCE, although this was not one of the guiding questions, it was a way for researchers to introduce them smoothly into the discussion and let them more secure during next questions. The following answer was obtained by most participants: *The OSCE would be a practical way to assess our knowledge, to test what we learned in theory to put into practice.*

The first question was about their opinion in relation the use of OSCE as teaching strategy in Clinical Nursing, a subject treated in the Clinical Nursing discipline, in which OSCE is applied. With this question, two categories arose and they were demonstrated in Chart 1, below.

**Chart 1.** Categories of answers to the question: OSCE: what is your opinion about the application of this teaching strategy in Clinical Nursing? Natal, RN, Brazil, 2014.

CATEGORIES	ANSWERS
SOP utilization	<i>It is fundamental, because we felt the difference, in this period we had some sort of practical test, I don't know if it was the OSCE itself, and we felt the difference that makes to not have a SOP that is the standard operational procedure for us to follow those rules in accordance with what is preconized. It is fundamental, it was difficult without this SOP for the OSCE development (Subject 3)</i>
	<i>The care gets way more organized, because you structure in your head what you are going to do and how to do it, what you can ask, so it is way easier for us to do this organization in accordance with the SOP. (Subject 5)</i>
	<i>In this case, there are also some negative points, because it is a lot of memorizing. (Subject 6)</i>
Learning strategy	<i>Regarding the OSCE, it is valid for us to learn and really fix what was taught in the classroom. (Subject 7)</i>
	<i>The OSCE is really valid, but it shouldn't be an evaluation way, it can be inserted, but without counting grades, because it totally messes up with the emotions and especially for those who do not know how to deal under pressure. (Subject 8)</i>
	<i>I think this is something really relative, because if it's not under this pressure, we don't care, it needs to have a lot of discipline. (Subject 17)</i>
	<i>The OSCE ends up being an experience, because in the practice we will deal with this kind of pressure, so in the OSCE we are also under pressure. (Subject 23)</i>
	<i>The OSCE is a very important tool for our learning.(Subject 16)</i>

The second question addressed participant's experience with the use of this teaching strategy. At the moment, students were really expressive and specially demonstrated the feelings observed during the discipline evaluation with the OSCE use. Three categories emerged from this question, demonstrated in Chart 2.

**Chart 2.** Categories of answers to the question: How was your experience? Natal, RN, Brazil, 2014.

CATEGORIES	ANSWERS
Main feelings	<i>Anxiety, jitters, fear. (Subject 9)</i>
	<i>Frustration, cry, deception. But this is something that guides us during practice. We have to see the two sides. (Subject 10)</i>
Valid experience	<i>It was a very valid experience mainly for us to don't get in the practice knowing nothing, without doing any procedure. So I think it was valid in all aspects. (Subject 3)</i>
	<i>And I think it is also important, because although you get really nervous, but it is the first contact that you have, there, you can be making mistakes and this helps for when you are assisting the patient, because you are going to have your needs fulfilled at the OSCE. (Subject 14)</i>
Assessment method	<i>Maybe it would be interesting in evaluations, not having the teacher assessing, but unknown people that could evaluate you as well as a professor. (Subject 13)</i>
	<i>You study, you know the sequence and all, but as she said, because it is worth grading, because the teacher is there looking at you, I think that because they are there in that moment, I think this is what affects more. (Subject 11)</i>
	<i>You get so worried about the time, study at home, time yourself and when you get here (assessment place) you had already forgotten everything. Then when you walk in the room and face the teachers, then is when you really don't remember anything. (Subject 12)</i>
	<i>I think that for being an evaluation way, ends up disturbing. (Subject 16)</i>

The third and last question was about the acquisition of a better development in practical hospital activities using this strategy. All focus group participants answered "yes". From this guiding question, two categories emerged in accordance with Chart 3.

**Chart 3.** Categories of answers about the question: Do you think you obtained or will obtain a better performance in practical hospital activities with the use of this strategy? How? Natal, RN, Brazil, 2014.

CATEGORIES	ANSWERS
Learning with mistakes	<i>Certainly, because you are studying, learn with mistakes and when gets to the practice, I will remember everything that I've been through, everything that I've studied. (Subject 21)</i>
	<i>The mistakes done there at the OSCE, we fix so that in an opportune moment when we can't make mistakes, we can remember. (Subject 4)</i>
Similarity with the practice	<i>At the OSCE, we dealt with situations where the teacher put himself as the patient, so he could change some aspects, and we see this a lot in the practice, the person is too dynamic, we are not going to deal with something programmed. (Subject 17)</i>
	<i>In the internship, I've got a situation similar to the one addressed at the OSCE, then I considered what I've seen at the OSCE, and it helped me a lot, because you create a sequence in your head. (Subject 7)</i>
	<i>That's why I also think we shouldn't talk bad about memorizing, because the procedure, wanting it or not, follows a pattern, it really follows a sequence. (Subject 24)</i>
	<i>One of the most valid things about the OSCE, is that when we go to the practice, because the fear is of dealing with a situation, but not knowing how to organize, not knowing what is going to be imposed to us, and at the OSCE, although it is a simulated situation, we are seeing how it is going to be in practice, we know how to impose ourselves in a situation. This, for me, is one of the most positive points in relation to OSCE (Subject 19)</i>
	<i>And also we have to see the future, because in the future we will work in some place, and those places have their protocols and we should follow them, so if we already have it structured in our head this academic experience, it will be way more easy for when we get there and be able to also remember or organize in accordance with the institution that we will work at. (Subject 21)</i>

## DISCUSSION

Concerning the student's first line about what would be the OSCE, an experience report confirmed that this method is a tool to measure clinical competencies with the use of standard procedures and patients. It is considered of extreme importance by students to enter the practice fields, once it assists them to develop indispensable abilities for clinical attention<sup>(3)</sup>.

According with Chart 1, with the first question emerged two categories; the first was about the **SOP utilization** which obtained positive and negative points. About that, another study<sup>(18)</sup> describes the SOP objective as to clarify doubts, standardize execution of actions and to guide in accordance with norms of each institution, which should be used and followed by all in a uniformed way. Besides, it describes each step to promote an adequate performance<sup>(18-19)</sup>.

According with authors of a study about the point of view on the SOPs importance for clinical research, this instrument should be developed by a specific team, determined for this reason, and can assess and validate the procedures or to hire a group with this purpose<sup>(19)</sup>.

SOPs are important resources in health practice, as it helps to summarize information in accordance with a concise structure and develop an improvement in the practical environment<sup>(18)</sup>. Because it is a tool that follows a sequential pattern, it can arise some negative points with this methodological instrument, as the "memorizing" fact, reported by few students, as it is a moment when they will be evaluated, thus, creating apprehension, although, this is really relative in accordance with each student's opinion, it could be observed by a minority.

Majority of students listed the SOP as a positive way to be used at the OSCE, related to this information, authors of a bibliographical study with integrative analysis reported POP as an essential tool in the health field<sup>(14)</sup>.

According to Chart 2, the second category of the first question addressed the **learning strategy** as of extreme importance to improve learning. Regarding this category,

authors of a theoretical reflection refer that those practical activities simulated in a laboratory is an essential space for learning, because besides facilitating it, it influences students to keep learning, it also develops creativity and sensibility, and other indispensable aspects in teaching and learning<sup>(20)</sup>.

In addition, it is considered an improvement factor in professional development, once the simulation does not offer risks or discomfort to patients. From all teaching strategies, the ones that guarantee practical training and acquisition of abilities are pointed as essential<sup>(20)</sup>. The OSCE reproduce real actions that a professional should execute in a determined clinical situation<sup>(21)</sup>.

Consonant with such perception, another research<sup>(3)</sup> describes the OSCE as an evaluation tool as well as an education activity, as it helps students to develop abilities needed during clinical attention and helps to identify gaps in the teaching-learning process.

With the second guiding question, three categories were created. The first addressed the **main feelings** expressed by students during evaluation. Students reported feeling "anxiety, jitters, fear, frustration, cry and delusion", but they agreed that it was something that guided practice. In favor of that, a cross-sectional study about the objective structured clinical evaluation as a method to assess undergraduate students in respiratory physiotherapy, comments the OSCE as the most stressful kind of exam for students, and stress can adversely affect performance<sup>(12)</sup>. Also, other authors refers that besides stress, application of OSCE is also associated with jitters and anxiety<sup>(7,22)</sup>. These feelings can be caused as it could be the first time students were exposed to this evaluation method<sup>(23)</sup>.

However, it becomes important to point out that those referred feelings in the evaluation moment are decreased during practice in health establishments and this is one of the main objectives when using the OSCE. In consonance with such assertive, another study<sup>(11)</sup> confirms that laboratory simulations reduce fear and

insecurity in students when they go to practice, besides learning facilitation.

It is worth noticing that although stress and anxiety negatively affect student's performance, these feelings can reflect stress experienced in a real case, thus, this difficulty can increase the validity of OSCE use as teaching strategy<sup>(8)</sup>.

Other category from the second question demonstrated by a part of students that OSCE is a **valid experience** for practice. Facing this affirmation, a study<sup>(20)</sup> revealed that previous contact with simulated real experiences is extremely important for the development of abilities, with the intention to acquire safety and decrease tension during procedures with the client. Thus, the student acquires abilities before caring for patients in practice at a health establishment.

The same way, other authors identified that most students referred the OSCE tests as a broad field of knowledge and abilities and that, helps to identify gaps in need to be improved during learning. A large number of participants evaluated the OSCE as a valuable practical experience for the acquisition of knowledge, analogous to the elaborated study<sup>(5,24)</sup>.

The third category from the second question included that because it is an **assessment method**, it was negative in performance; the presence of a professor in the moment of assessment is believed to create feelings of fear, jitters and anxiety in students, which are decisive in their performance, as discussed in the first category of the second question.

Coherent with this category, other authors explain the presence of a teacher in the moment of the OSCE presents disadvantages, which can be attenuated, once it can difficult student's performance in the simulation of clinical attention. However, if the professor keeps an egalitarian relationship of criticism and compliments with the student, he can facilitate and stimulate the teaching-learning process<sup>(3)</sup>.

In counterpoint, another study<sup>(21)</sup> refers the OSCE as being an efficacious way to assess clinical competencies

of many health professionals. One of the OSCE main advantages pointed out is the possibility to connect a group of essential competencies with diverse simulated clinical situations, in a way to allow measurement of certain competencies. This suggests that OSCE can be considered a "golden standard" to assess future health professionals.

In accordance with Chart 3, we could observe that with interpretation of the third guiding question, two categories were identified. The first category from this question demonstrated the advantage of using this method due to the fact that students can **learn with mistakes**. In relation to it, a study<sup>(3)</sup> expose that when using this strategy, the student can make mistakes without generating harms to the real patient, once they can modify them. When a mistake is identified, measurements are done with the intention to avoid it to happen again.

Another author comments the use of laboratory simulation assessed as an important improvement factor in the professional role, as it offers the possibility to learn with errors. The same way, another advantage is in decreasing iatrogenic errors to real patients<sup>(20)</sup>.

The second category of this question showed the **similarity with practice** as being important during performance of activities in real fields. Authors of a study about the evolution of medical students competencies demonstrated that problems addressed in the OSCE are those in which students commonly find in a health establishment. Standard patients typically have general complaints, although some can present problems related to emergency conditions<sup>(25)</sup>.

Concomitant, there are many advantages to laboratory simulations, within them is the student having possibility to train and repeat as many times needed clinical situations in order to acquire safety and ability during hospital practices<sup>(20)</sup>.

## CONCLUSION

Thus, in accordance with student's evaluations, the OSCE constituted an assessment and especially educative strategy of great importance in the dynamic process of teaching-learning.

It is noteworthy the use of this strategy presenting positive and negative points. Thus, it is observed in the lines that advantages excel when compared to the small number of negative aspects. From negative points, the main feelings and the assessment method are highlighted. Within the positive aspects, the utilization of

SOP, the learning strategy, the valid experience, to learn with mistakes and the similarity with the practice, were pointed by majority of students as of extreme importance before their arrival to practical fields and for acquisition and development of health knowledge with emphasis in nursing.

Thus, we suggest to use this method in other disciplines and other courses, especially in the health field, generating training for professionals to become more enabled and capable for practice and to assist clients with quality.

## REFERENCES

- Illesca P. M, Cabezas G. M, Romo P. MT, Díaz R. P. Opinión de estudiantes de enfermería sobre el examen clínico objetivo estructurado. *Cienc. enferm.* [Internet]. 2012 [cited 2015 sep 30];XVIII(1):99-109. Available from: <http://dx.doi.org/10.4067/S0717-95532012000100010>.
- Braccialli LAD, Oliveira MAC. Conceptions of performance evaluation in a competence-centered curriculum. *Rev Esc Enferm USP* [Internet]. 2011 [cited 2015 sep 30];45(5):1221-8. Available from: <http://dx.doi.org/10.1590/S0080-62342011000500027>.
- Galato D, Alano GM, França TF, Vieira AC. Exame clínico objetivo estruturado (ECO): uma experiência de ensino por meio de simulação do atendimento farmacêutico. *Interface (Botucatu)* [Internet]. 2011 [cited 2015 sep 30];15(36):309-20. Available from: <http://dx.doi.org/10.1590/S1414-32832010005000032>.
- Turner JL, Dankoski ME. Objective Structured Clinical Exams: A Critical Review. *Fam Med* [Internet]. 2008 [cited 2015 sep 30];40(8):574-8. Disponível: <http://www.stfm.org/FamilyMedicine/Vol40Issue8/Turner574>.
- Selim AA, Ramadan FH, El-Gueneidy MM, Gaafer MM. Using Objective Structured Clinical Examination (OSCE) in undergraduate psychiatric nursing education: is it reliable and valid? *Nurse Educ Today* [Internet]. 2012 [cited 2015 sep 30];32(3):283-8. Disponível: <http://dx.doi.org/10.1016/j.nedt.2011.04.006>.
- Furlong E, Fox P, Lavin M, Collins R. Oncology nursing students' views of a modified OSCE. *Eur J Oncol Nurs* [Internet]. 2005 [cited 2015 sep 30];9(4):351-9. Available from: <http://dx.doi.org/10.1016/j.ejon.2005.03.001>.
- Muldoon K, Biesty L, Smith V. 'I found the OSCE very stressful': student midwives' attitudes towards an objective structured clinical examination (OSCE). *Nurse Educ Today* [Internet]. 2014 [cited 2015 sep 30];34(3):468-73. Available from: <http://dx.doi.org/10.1016/j.nedt.2013.04.022>.
- Paul F. An exploration of student nurses' thoughts and experiences of using a video-recording to assess their performance of cardiopulmonary resuscitation (CPR) during a mock objective structured clinical examination (OSCE). *Nurse Educ Pract* [Internet]. 2010 [cited 2015 sep 30];10(5):285-90. Available from: <http://dx.doi.org/10.1016/j.nepr.2010.01.004>.
- Bowling AM. The effect of simulation on skill performance: a need for change in pediatric nursing education. *J Pediatr Nurs* [Internet]. 2015 [cited 2015 sep 30];30(3):439-46. Available from: <http://dx.doi.org/10.1016/j.pedn.2014.12.010>.
- Santos IS, Vieira JE, Nunes MPT. Length of internship influences performance on Medical Residency exam. *Rev Assoc Med Bras* [Internet]. 2009 [cited 2015 sep 30];55(6):744-8. Available from: <http://dx.doi.org/10.1590/S0104-42302009000600021>.
- Mazzoni CJ, Moraes MAA. A avaliação prática estruturada de habilidades clínicas na Famema: fundamentos para construção e aplicação. *Revista Gestão Universitária* [Internet]. 2006 [cited 2015 sep 30]. Available from: <http://gestaouniversitaria.com.br/artigos/a-avaliacao-pratica-estruturada-de-habilidades-clinicas-na-famema-fundamentos-para-construcao-e-aplicacao>.
- Medeiros SB, Pereira CDFD, Tourinho FSV, Fernandes LGG, Santos VEP. Exame clínico objetivo estruturado: reflexões sob um olhar da enfermagem. *Cogitare Enferm* [Internet]. 2014 [cited 2015 sep 30];19(1):170-3. Available from: <http://dx.doi.org/10.5380/ce.v19i1.35977>.
- Gamboa-Salcedo T, Martínez-Viniegra N, Peña-Alonso YR, Pacheco-Ríos A, García-Durán R, Sánchez-Medina J. Examen Clínico Objetivo Estructurado como instrumento para evaluar la competencia clínica en Pediatría. Estudio piloto. *Bol. Med. Hosp. Infant. Mex.* [Internet]. 2011 [cited 2015 sep 30];68(3):184-92. Available from: [http://www.scielo.org.mx/scielo.php?script=sci\\_arttext&pid=S1665-11462011000300003&lng=es](http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1665-11462011000300003&lng=es).
- Santos AP, Vanderley TS, Brasileiro ME. Implementação da Sistematização de Assistência de Enfermagem em Parada Cardiorrespiratória na sala de emergência. *Revista Eletrônica de Enfermagem do Centro de Estudos de Enfermagem e Nutrição* [Internet]. 2012 [cited 2015 sep 30];3(3):1-

16. Available from:

<http://www.cpgls.pucgoias.edu.br/7mostra/Artigos/SAUDE%20E%20BIOLOGICAS/Implementação%20da%20SAE%20em%20CR%20na%20sala%20de%20emergência.pdf>.

15. Kuark FS, Manhães FC, Medeiros CH. Metodologia da pesquisa: guia prático. Itabuna: Via Litterarum; 2010.

16. Franco MLPB. Análise de Conteúdo. 2st ed. Brasília: Liber Livro Editora; 2005.

17. Resolução Nº 466 do Conselho Nacional de Saúde, de 12 de dezembro de 2012 (BR) [Internet]. Aprova as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Diário Oficial da União. 13 jun. 2013 [cited 2015 sep 30]. Available from:

[http://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466\\_12\\_12\\_2012.html](http://bvsms.saude.gov.br/bvs/saudelegis/cns/2013/res0466_12_12_2012.html).

18. Honório RPP, Caetano JA, Almeida PC. Validação de procedimentos operacionais padrão no cuidado de enfermagem de pacientes com cateter totalmente implantado. Rev Bras Enferm [Internet]. 2011 [cited 2015 sep 30];64(5):882-9. Available from: <http://dx.doi.org/10.1590/S0034-71672011000500013>.

19. Barbosa CM, Mauro MFZ, Cristóvão SAB, Mangione JA. A importância dos procedimentos operacionais padrão (POPs) para os centros de pesquisa clínica. Rev Assoc Med Bras [Internet]. 2011 [cited 2015 sep 30];57(2):134-5. Available from: <http://dx.doi.org/10.1590/S0104-42302011000200007>.

20. Silveira RCP, Robazzi MLCC. Modelos e inovações em laboratórios de ensino em enfermagem. Revista de Enfermagem do Centro-Oeste Mineiro [Internet]. 2011 [cited 2015 sep 30];1(4):592-602. Available from: <http://www.seer.ufsj.edu.br/index.php/recom/article/viewArticle/138>.

21. Silva CCBM, Lunardi AC, Mendes FAR, Souza FFP, Carvalho CRF. Objective structured clinical evaluation as an assessment method for undergraduate chest physical therapy students: a cross-sectional study. Rev. bras. fisioter. [Internet]. 2011 [cited 2015 sep 30];15(6):481-6. Available from: <http://dx.doi.org/10.1590/S1413-35552011005000033>.

22. Nulty DD, Mitchell ML, Jeffrey CA, Henderson A, Groves M. Best Practice Guidelines for use of OSCEs: Maximising value for student learning. Nurse Educ Today [Internet]. 2011 [cited 2015 sep 30];31(2):145-51. Available from: <http://dx.doi.org/10.1016/j.nedt.2010.05.006>.

23. Nasir AA, Yusuf AS, Abdur-Rahman LO, Babalola OM, Adeyeye AA, Popoola AA et al. Medical students' perception of objective structured clinical examination: a feedback for process improvement. J Surg Educ [Internet]. 2014 [cited 2015 sep 30];71(5):701-6. Available from: <http://dx.doi.org/10.1016/j.jsurg.2014.02.010>.

24. Branch C. An assessment of students' performance and satisfaction with an OSCE early in an undergraduate pharmacy curriculum. Curr Pharm Teach Learn [Internet]. 2014 [cited 2015 sep 30];6(1):22-31. Available from: <http://dx.doi.org/10.1016/j.cptl.2013.09.006>.

25. Hsieh M-C, Cheng W-C, Chen T-Y. Objective Structured Clinical Examination (OSCE) including critical simulation: Evaluation of medical student competence. Tzu Chi Med J

[Internet]. 2014 [cited 2015 sep 30];26(1):40-3. Available from: <http://dx.doi.org/10.1016/j.tcmj.2013.08.001>.

Received: 12/13/2014.

Accepted: 05/12/2015.

Published: 09/30/2015.