

EVALUATION OF ACADEMICS ON NURSING TEACHING AND LEARNING IN A MATERIAL AND STERILIZATION CENTER

Avaliação de acadêmicos sobre o ensino-aprendizagem de enfermagem em centro de material e esterilização

Evaluación de la académica en enseñanza y aprendizaje en enfermería en un centro de material y esterilización

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ABSTRACT: Objective: To describe the evaluation of Nursing students about the teaching-learning process of the curricular component Nursing in the Material and Sterilization Center. **Method:** A cross-sectional, analytical-descriptive study conducted at a public university with students who had experienced the curricular component prior to data collection. Participants answered an online questionnaire with questions related to teaching-learning. **Results:** Fifty-eight participations were counted, in which the majority evaluated the didactics of theoretical contents as “good” or “great”, the workload as “insufficient” and the practice scenarios as limited or distant from what the literature recommends. **Conclusion:** The teaching-learning was well evaluated as to its theoretical and literary character; however, the practical activities were evaluated as insufficient and unsatisfactory by most of the students. **Keywords:** Sterilization. Educational measurement. Education, nursing. Education, higher.

RESUMO: Objetivo: Descrever a avaliação de acadêmicos de Enfermagem sobre o processo de ensino-aprendizagem do componente curricular Enfermagem no Centro de Material e Esterilização. **Método:** Estudo analítico-descritivo, transversal, realizado em uma universidade pública, com alunos que haviam vivenciado o componente curricular anteriormente à coleta de dados. Os participantes responderam a um questionário *on-line* com perguntas relacionadas ao ensino-aprendizagem. **Resultados:** Foram contabilizadas 58 participações, em que a maioria avaliou a didática dos conteúdos teóricos como “bom” ou “ótimo”, a carga horária como “pouco suficiente” e os cenários de práticas como limitados ou distantes do que recomenda a literatura. **Conclusão:** O ensino-aprendizagem foi bem avaliado quanto ao seu caráter teórico e literário; entretanto, as atividades práticas foram avaliadas como insuficientes e insatisfatórias pela maioria dos discentes. **Palavras-chave:** Esterilização. Avaliação educacional. Educação em enfermagem. Educação superior.

RESUMEN: Objetivo: Describir la evaluación de los estudiantes de enfermería sobre el proceso de enseñanza-aprendizaje del componente curricular Enfermería en el Centro de Materiales y Esterilización. **Método:** Un estudio transversal, analítico-descriptivo realizado en una universidad pública con estudiantes que habían experimentado el componente curricular antes de la recopilación de datos. Los participantes respondieron un cuestionario en línea con preguntas relacionadas con la enseñanza-aprendizaje. **Resultados:** se contabilizaron 58 participaciones, en las cuales la mayoría evaluó la didáctica de los contenidos teóricos como “buena” o “excelente”, la carga de trabajo como “insuficiente” y los escenarios de práctica como limitados o alejados de lo que la literatura recomienda. **Conclusión:** la enseñanza-aprendizaje fue bien evaluada en cuanto a su carácter teórico y literario; sin embargo, la mayoría de los estudiantes evaluaron las actividades prácticas como insuficientes e insatisfactorias. **Palabras-clave:** Esterilización. Evaluación educacional. Educación en enfermería. Educación superior.

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INTRODUCTION

Nursing has the single purpose of providing care to individuals, which can be done directly or indirectly. In the indirect care setting, the Material and Sterilization Center (MSC) emerged with the need for a specific place to manipulate the materials before and after performing invasive surgeries and procedures, with the aim of preventing post-operative complications resulting from precarious conditions of hygiene, asepsis, resources and knowledge¹.

As a major support unit for the health institution, it responds fully to the processes of reception, preparation, sterilization, storage and distribution of health products (HP). Its function is to offer properly processed items, free of contamination and safe for assistance by the health team².

The implantation and consolidation of the MSC in hospitals occurred based on the health team's conception that the stages of article processing are fundamental for the prevention and control of healthcare-associated infections (HAI) and consequent association with safety and quality of health care, as well as variables that include hospitalization time and costs for hospital management²⁻⁴.

The management of care, as well as of the MSC, is one of the responsibilities of the Nursing professional, with the task of coordinating activities, evaluating the stages of the work processes, participating in the training actions, establishing staffing, among other duties^{2,5}.

Thus, the nurse's role in the MSC requires the professional to master the technical-scientific knowledge and interpersonal skills to be acquired in their academic training, which results in good practices in the services offered to the patient⁶.

The nurse is the technical responsible for the control and supervision of the actions developed in the MSC, and must have scientific knowledge based on evidence for the development of the steps necessary for the processing of HP in all health care units⁵.

However, a study carried out in a public hospital in Porto Alegre, with nurses of the MSC, verified difficulties reported by the professionals during the work process. It was identified that there are doubts and insecurities during the activities performed in the sector, which may compromise the efficiency of the steps of the sterilization process⁴.

Faced with this problem, the academic training of Nursing, through mastery of the theoretical-practical foundation, becomes fundamental for the achievement of a satisfactory construction of knowledge and the development of skills and practical skills. It is necessary that educational planning, content didactics and the choice of pedagogical strategies be

well grounded in an adequate theoretical and methodological assumption^{7,8}, in order to favor the acquisition of knowledge and safety in the aforementioned curricular component.

To that end, the generalist, humanist, critical and reflective nursery education guidelines should also potentiate and aggregate the specific knowledge of curricular components such as the MSC to the other topics taught during graduation, and this content should not be treated with less importance or as part only of a specialty⁶.

Thus, the emphasis on theoretical and practical teaching, which is innovative and attractive to favor the process of knowledge construction should be able to prepare future professionals to act in front of the challenges of the sector. The role requires accountability and competence based on up-to-date evidence, such as the definition of materials processing methods and the recommended best practices^{7,9}.

This way, the present research arose from the need to describe how Nursing students evaluate the teaching-learning process of the MSC curricular component during graduation, in order to identify possible weaknesses and/or potentialities that may foster the elaboration and improvement strategies in the process of knowledge construction.

OBJECTIVE

To evaluate the teaching-learning of the curricular component Nursing in the MSC by Nursing students.

METHOD

This is a descriptive, analytical, cross-sectional, field study, with a quantitative approach. The study population was composed of Nursing students and had a sample of 58 participants. The criteria for the inclusion of the subjects were: regular students enrolled in the 5th to 10th module in the Nursing undergraduate course, aged 18 years or over, of both genders and who answered the questionnaire sent by e-mail during the stipulated period of 30 days.

The place of study of choice was a public institution of education, constituted by courses of superior level in Nursing and others, located in the northern zone of the city of Recife, Pernambuco, Brazil. For the data collection, a pre-structured online questionnaire was used and elaborated in the Google Forms tool, based on the study of Dessotte et al. for evaluation of the curricular component⁸.

The collection instrument consisted of three parts: the first was the characterization of the sample (gender, age, course period); the second consisted of seven questions about the experiences and knowledge of the content taught in the MSC curriculum component; and the third investigated the importance of Nursing teaching in MSC in undergraduate courses, the teaching-learning process developed in theoretical-practical classes and suggested teaching strategies to complement the training process¹⁰.

The contents evaluated by the collection instrument were: structure and physical blueprint, HP processing, sterilization monitoring, work process in the MSC, interface between the Hospital Infection Control Commission (HICC) and the MSC.

As for data analysis, descriptive statistics were used, with the absolute and relative frequencies presented by means of numbers and percentages, in the form of a graphic and tables.

Data collection was initiated after approval by the Research Ethics Committee of the University of Pernambuco (CEP/UPE), via *Plataforma Brasil* (CAAE No. 58350516.0.0000.5207), respecting the ethical precepts of research with human beings, based on Resolution No. 466/2012 of the National Health Council (NHC). Each student was invited to participate in the study, being given the Informed Consent Form, along with a link that gave access to the instrument of data collection. Participants responded to the proposed instrument individually and handed it in to the researcher immediately.

RESULTS

The 58 students enrolled from the 5th to 10th module in the baccalaureate course in Nursing who collaborated with the research revealed that they were aged between 19 and 31 years, with an average of 21.8 years. The majority of participants (40.0%) were enrolled in the 9th module.

Table 1 describes the students' assessment of their knowledge about the contents of the Nursing curriculum component in the MSC. It is observed, regarding the knowledge on structure and physical blueprint, that 47.0% of the students claimed to have understood and experienced the content close to what the literature recommends. In the article processing evaluation, 35.0% of the students stated having understood and experienced the content as recommended by the literature and 38.0% close to what the literature recommends. The monitoring of sterilization was approved for learning by 76.0% of the students, with 38.0% of them having understood and experienced close situations to those of the

theoretical recommendation and the other 38.0%, according to what the literature advocates.

In the evaluation about the knowledge on the nursing work process in the MSC, 43.0% of the students stated that they had close understanding of the literature, 38.0% understood the subject with differences and 7.0% did not understand it. When the content in question is the interface between the HICC and the MSC, 27.0% of the students claimed a close understanding of what the literature recommends and 40.0% said they did not understand or experience the content.

The importance of Nursing teaching in the MSC during graduation was evaluated as "very important" by 100.0% of the students. Most of them evaluated the didactics of the institution as "great" (41.0%) and "good" (40.0%). Regarding the theoretical and practical hours of the curricular component, 46.0% of the students classified it as "sufficient" and 49.0% as "insufficient". Regarding the practice scenarios, 65.0% of the students stated that the environments presented limitations and partially corresponded to the expectations of the curricular component (Table 2).

Graph 1 indicates that the technical visit and the monitoring were indicated by 86.0 and 83.0% of the students, respectively, as teaching strategies that can contribute to learning. Next, the expository class, with 70.0% of the choices, and the seminars, with 37.0%. Students also chose blogs and educational vlogs (14.0%) and the Virtual Learning Environment — Moodle (17.0%). Other complementary teaching strategies were suggested by 9.0% of the students, such as field classes, congresses and exhibition of videos related to the theme in the classroom.

DISCUSSION

The results of the present investigation point out that all the scholars evaluated the curricular component of the MSC as relevant and essential for future performance as nurses. On the other hand, their majority reported that the theoretical and practical workload is insufficient to reach the skills and competences foreseen in the syllabus of the discipline, which may reflect on the impaired understanding of the content, according to reports.

Similar to what was observed, a descriptive study carried out at the University Center of Volta Redonda, with Nursing students, showed that the students attribute the difficulty to assimilate the content of the MSC discipline to insufficient practical hours¹¹.

In this perspective, the National Curricular Guidelines (*Diretrizes Curriculares Nacionais – DCN*) grant the educational

institution the freedom of structuring the workload to be completed to fulfill the curriculum. Such flexibility means that sometimes the skills and abilities that must be included in the training of the general nurse are neglected in the curriculum. This is what usually happens with the teaching of the MSC^{8,12}.

In this direction, the theoretical and practical teaching hours involved in the MSC contribute with a small part of the training of nurses. It is necessary that, during that time, activities are carried out not only in the classroom. The approximation of teaching to the reality of health services through practices and internships must be present in the curricular environment, just as the teachers and preceptors who accompany the students during the practices need to know how to mediate opportunities for all to develop their abilities^{7,12}.

When it comes to the teaching of Perioperative Nursing, more specifically the MSC, studies point to a gap in general education. Gap that exists because of the undervaluation of the teaching of the curricular component, as well as of the professionals of the area; by the lack, at times, of a faculty compatible with the necessity of the discipline; lack of appropriate laboratories for the practices; by the difficulty of insertion in the real scenario by the large number of students or by obstacles in partnerships with health services⁷⁻¹⁴.

In order for the Nursing graduate to assimilate and understand the importance of the MSC, its organization, infrastructure, human resources, as well as the stages of HP processing, effective teaching based on methodological strategies,

such as active methodologies, is imperative so that students participate in the construction of their knowledge^{5,12}.

Table 2. Assessment data on the importance of teaching, didactics, workload and practice scenarios.

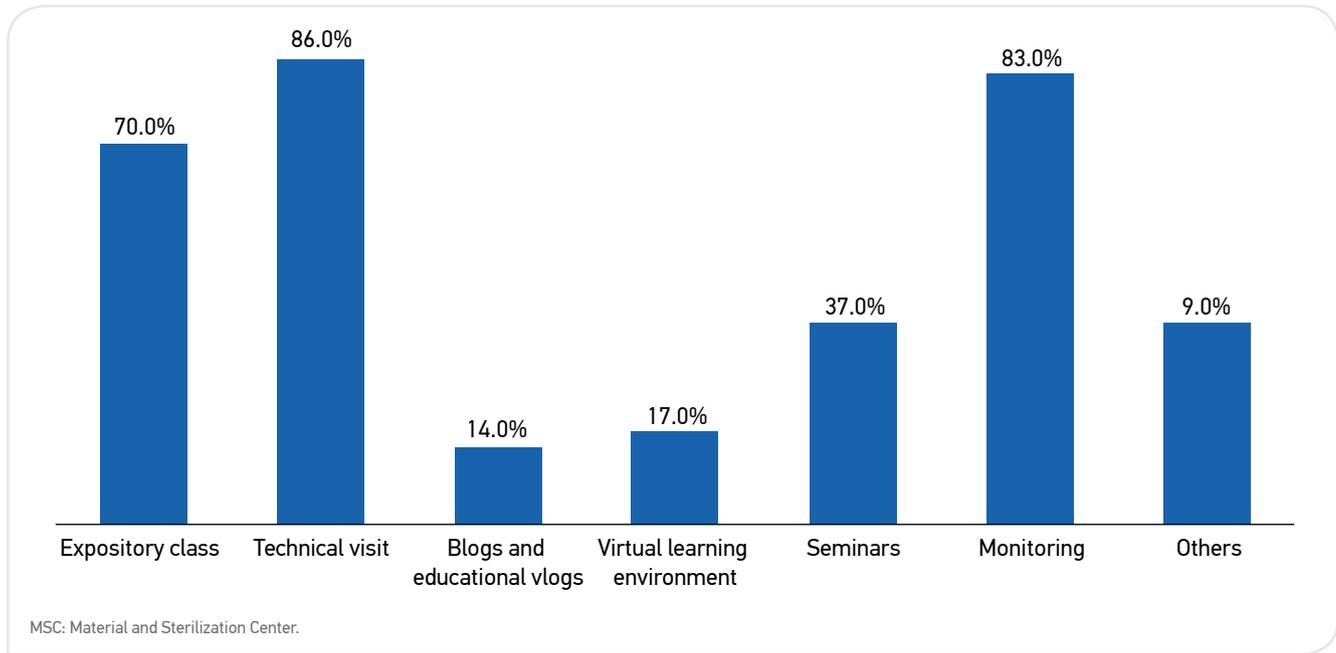
Assessed categories	n	%
Importance of Nursing education in CME		
Very important	58	100.0
Assessment of didactics		
Excellent	08	14.0
Great	24	41.0
Good	23	40.0
Poor	03	5.0
Theoretical and practical workload		
Sufficient	27	46.0
Indifferent	03	5.0
Insufficient	28	49.0
Practice scenarios		
Meets the expectations of the curricular component	07	12.0
Partially meets the expectations of the curricular component	38	65.0
Does not meet the expectations of the curricular component	12	21.0
Did not respond	01	2.0

MSC: Material and Sterilization Center.

Table 1. Data on the evaluation of the contents taught in the curricular component Nursing in the Material and Sterilization Center, according to the students (n = 58).

Content	Understood and experienced the content as recommended in the literature n (%)	Understood and experienced the content close to what the literature recommends n (%)	Understood and experienced the content with differences from what the literature recommends n (%)	Did not understand or experienced the content n (%)
Structure and physical blueprint	13 (22.0)	27 (47.0)	17 (29.0)	01 (2.0)
Article Processing – cleaning, disinfection and sterilization	20 (35.0)	22 (38.0)	15 (25.0)	01 (2.0)
Sterilization monitoring	22 (38.0)	22 (38.0)	11 (19.0)	03 (5.0)
Work process of Nursing in the MSC	07 (12.0)	25 (43.0)	22 (38.0)	04 (7.0)
The interface between the HICC and the MSC	04 (7.0)	16 (27.0)	15 (26.0)	23 (40.0)

MSC: Material and Sterilization Center; HICC: Hospital Infection Control Commission.



Graphic 1. Teaching strategies as a complement to the learning of the curricular component Nursing in MSC, according to the students (n = 58).

This need for methodological teaching tools, which goes beyond expository classes, was pointed out by the participants of the present study as valuable, which makes it essential that the teaching staff rethink the resources used during the teaching-learning process in the discipline of MSC.

In this direction, the literature points to positive experiences with the adoption of teaching methods that cross the traditional. Strategies such as problem-based learning and online technologies are helping to advance this construction in the training of nurses¹⁵.

It is therefore necessary to recognize the new challenges that prevail in current education scenarios and highly complex university curricula, as the exponential accumulation of knowledge and the increasing incorporation of application technologies in the various health areas lead to fragmented training in highly specialized fields and the pursuit of technical efficiency, reducing the workload of the curricular component¹²⁻¹⁶.

Therefore, the need for innovative methods that allow for an ethical, critical, reflexive and transformative pedagogical practice that goes beyond the limits of purely theoretical and technical training to effectively achieve the training is reiterated¹⁷.

The limitation of the present research is due to the impossibility of participation of all the students that attended the curricular component of MSC, with a significant number of

students who were not willing to participate. Therefore, we suggest new studies that may include an expressive number of participants to obtain new conceptions in relation to the exposed theme.

CONCLUSION

The importance of the Nursing teaching-learning process in the MSC during Nursing graduation was evidenced as essential for the great majority of the students who participated in the research. Teaching strategies were well evaluated, but the need for innovation in traditional teaching was highlighted.

When questioned about the practice fields and time spent in these places, the students stated that they do not meet their expectations regarding the curricular component. Therefore, it is necessary to review the gaps in teaching, so that there is growth in the teaching and learning processes, resulting, thus, in the training of more capable and prepared professionals for the job market.

The university education does not exist only for the acquisition of knowledge; it is the channel for theoretical and practical experiences to take place and grow, as well as the professionals themselves. The university should aim for a solid academic background, providing the student with the necessary tools so that they can safely choose their professional identity.

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| ERRATUM |

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In the manuscript “Evaluation of academics on nursing teaching and learning in a material and sterilization center”, DOI: 10.5327/Z1414-4425201800040004, published in the *Revista SOBECC*, 23(4): 178-183, page 178.

Where it reads:

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It should read:

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