



EVALUATION OF PHARMACOLOGY TEACHING IN THE UNDERGRADUATE COURSE BY NURSES FROM AN INTENSIVE CARE UNIT

AValiação do ensino de farmacologia na graduação por enfermeiros de uma unidade de terapia intensiva

EVALUACIÓN DE LA ENSEÑANZA DE FARMACOLOGÍA EN EL PREGRADO POR ENFERMEROS DE UNA UNIDAD DE CUIDADOS INTENSIVOS

Giuliana Ignácio Teixeira Cavalcante¹, Luciana Kelly Ximenes dos Santos², Cisliany Duarte Cavalcante Bandeira³, Maria do Carmo de Oliveira Citó⁴

ABSTRACT

Objective: to analyze the satisfaction of nurses with regard to Pharmacology teaching and their concern to improve knowledge on Pharmacology. **Method:** descriptive and exploratory study with a quantitative approach. The study was carried out with 55 nurses in the intensive care unit of a public hospital in Fortaleza, Ceara, Brazil. A questionnaire was applied to identify the characteristics of nurses regarding time since graduation, year in which she/he began working as a nursing professional, and interest in obtaining a higher qualification in Pharmacology. It also addresses the nurse's opinion about the Pharmacology teaching offered in the undergraduate course. The data were collected from 10 to 20 August 2010, after approval by the Research Ethics Committee of the institution, under the Protocol 050803/10. The data were analyzed and displayed into tables. **Results:** there is a high rate of dissatisfaction with regard to the Pharmacology teaching, since 29 (96.7%) respondents considered it to be not enough. **Conclusion:** there is a need for a greater preparedness of the Nursing schools, so that nurses can complete their undergraduate courses with more confidence and knowledge on Pharmacology. **Descriptors:** nursing; teaching; pharmacology.

RESUMO

Objetivo: analisar a satisfação dos enfermeiros em relação ao ensino de Farmacologia e sua preocupação em ampliar os conhecimentos em Farmacologia. **Método:** estudo descritivo e exploratório com abordagem quantitativa. O estudo foi realizado com 55 enfermeiros na unidade de terapia intensiva de um hospital público em Fortaleza-CE. Foi aplicado um questionário para identificar as características dos enfermeiros relacionadas ao tempo de graduação, ano em que iniciou a atuação na enfermagem e interesse em qualificação na área de Farmacologia. Também se aborda a opinião do enfermeiro acerca do ensino de Farmacologia oferecido na graduação. Os dados foram coletados entre os dias 10 a 20 de agosto de 2010, após a aprovação do Comitê de Ética em Pesquisa da instituição, sob o Protocolo n. 050803/10. Os dados foram analisados e apresentados em tabelas. **Resultados:** há um grande índice de insatisfação em relação ao ensino de Farmacologia, pois 29 (96,7%) dos entrevistados o consideraram insuficiente. **Conclusão:** há necessidade de uma maior preparação das escolas de Enfermagem, para que os enfermeiros possam concluir a graduação com mais segurança e conhecimento em Farmacologia. **Descritores:** enfermagem; ensino; farmacologia.

RESUMEN

Objetivo: analizar la satisfacción de los enfermeros con relación a la enseñanza de Farmacología y su preocupación en ampliar los conocimientos en Farmacología. **Método:** estudio descriptivo y exploratorio con abordaje cualitativo. El estudio fue realizado con 55 enfermeros en la unidad de cuidados intensivos de un hospital público en Fortaleza, Ceará, Brasil. Fue aplicado un cuestionario para identificar las características de los enfermeros relacionadas con el tiempo desde la graduación, año en que inició su trabajo como profesional de enfermería e interés en cualificación en el área de Farmacología. También se aborda la opinión del enfermero acerca de la enseñanza de Farmacología ofrecida en el curso de pregrado. Los datos fueron recogidos entre los días 10 y 20 de agosto de 2010, después de la aprobación del Comité de Ética en Investigación de la institución, bajo el Protocolo 050803/10. Los datos fueron analizados y presentados en tablas. **Resultados:** hay un alto índice de insatisfacción con relación a la enseñanza de Farmacología, pues 29 (96,7%) de los encuestados consideraron esa enseñanza insuficiente. **Conclusión:** hay necesidad de una mayor preparación de las escuelas de Enfermería, para que los enfermeros puedan concluir el curso de pregrado con más seguridad y conocimiento en Farmacología. **Descriptores:** enfermería; enseñanza; farmacología.

¹Nurse. Specialist in Intensive Care Nursing. Master in Science in Pharmacology. PhD student in Pharmacology at the Graduate Program in Pharmacology from the School of Medicine of Universidade Federal do Ceara (UFC). Fortaleza (CE), Brazil. E-mail: giulianaignacio@yahoo.com.br; ²Nurse. Specialist in Family Health. Master in Pharmacology. PhD student in Pharmacology at the Graduate Program in Pharmacology from the School of Medicine of UFC. Fortaleza (CE), Brazil. E-mail: cacacit@yahoo.com.br; ³Nurse. Specialist in Intensive Care Nursing. Master in Pharmacology. PhD student in Pharmacology at the Graduate Program in Pharmacology from the School of Medicine of UFC. Fortaleza (CE), Brazil. E-mail: lucianaximenesufc@yahoo.com.br; ⁴Nursing student at Universidade de Fortaleza (UNIFOR). Fortaleza (CE), Brazil. E-mail: cisliany_to@hotmail.com

INTRODUCTION

A good quality patient care is a duty of the health care staff as a whole. Commitment to the well-being of the individuals assisted involves an ethical and moral issue favoring the life and dignity of human beings. In a hospital setting, health professionals are responsible for patients they are caring for and must commit to ensure a good quality care. Currently, there is a world trend to strengthen the relationship between quality in health care and patient safety¹⁻⁵, however, the individual's safety may be discontinued due to the occurrence of adverse events.

According to Padilha⁶, adverse events are undesirable occurrences, but preventable ones, with a harmful or hurtful nature that compromise the safety of a patient who is under the care of health professionals. Some of these events are described and stand out, among others, those related to errors in the administration of medicines.⁷

According to the National Coordinating Council for Medication Errors Reporting and Prevention⁸, a medication error is any preventable event that may cause or lead to misuse of a medicine or to patient harm, while the medicine is under the control of health professionals, patient, or consumer. These errors can occur since medicine prescription till its administration. The occurrence of this event at any stage of the process can cause harmful consequences and even lead the patient to death.

The administration of medicines is a multidisciplinary process involving professionals from various health care fields, such as physicians, pharmacists, and nursing professionals.⁹ For the nursing team, especially, insufficient knowledge on drugs may result in complications and errors in the medicines administration process.¹⁰

To effectively implement the functions regarding the administration of medicines, the nurse must have knowledge on Pharmacology, so that she/he masters the scientific principles of drugs and is able to contextualize such action in accordance with the patients' needs.¹¹

A study revealed that the current teaching of Pharmacology offered in nursing schools is not enough to meet the needs of nurse's daily practice.¹² Thus, nurses often come to the labor market with less knowledge on Pharmacology than required.

Considering that nurses' knowledge on Pharmacology is crucial for the proper implementation of the nursing service, as

noted above; there's a need for assessing whether the content offered during the undergraduate course was actually understood and absorbed. Thus, it is prudent to review the knowledge acquired by nurses during their undergraduate course. Therefore, this paper aims to analyze the nurses' knowledge on Pharmacology acquired during their undergraduate studies with regard to relevant medicines in the Intensive Care Unit (ICU).

METHODOLOGY

This study presents an analysis of nurses' knowledge on Pharmacology, in order to verify whether the knowledge acquired during the undergraduate course is considered satisfactory. This is a descriptive and exploratory study with a quantitative approach.

The study was carried out in the Intensive Care Center (ICC) of a public hospital in Fortaleza, Ceara, Brazil. The location was chosen because it is a referral hospital in the state of Ceara which has a high demand from patients. There, the number of nurses in ICUs has also been a facilitating aspect for the study and, moreover, these professionals had recently received training on Pharmacology in the ICUs.

The study population consisted of all nurses working in the ICCs of the institution, totaling 55 professionals. The sample consisted of the nurses who were on duty on the dates of data collection and who agreed to participate in the study. The inclusion criterion adopted was being a nurse in the ICC of the hospital under study and agreeing to participate in the research. Those nurses who refused to participate in the study or who were on vacation or leave in the period of data collection were excluded.

Data were collected after approval by the Research Ethics Committee of the institution, under the Protocol 05080310, in accordance with Resolution 196/96, from the Brazilian National Health Council.

A questionnaire aiming to identify the characteristics of nurses with regard to time since graduation, year in which she/he began working as a nursing professional, and interest in obtaining a higher qualification in Pharmacology. It also addresses the opinion of nurses about the pharmacology education offered during the undergraduate course.

After encoding each of the variables, a data dictionary to create an electronic database in the software NSEXCEL was developed.

RESULTS

The study was carried out with 30 nurses who work in the ICC of the institution under study, within the period in which the data were collected. Therefore, the sample contains 54.5% of the study population, which consists of 55 nurses.

The nurses were characterized with regard to their time since graduation. Those with 10 or more years since graduation, i.e., those who completed the undergraduate course by 2000, represent 26.7% of the sample, while the nurses with less than 10 years since graduation, who, therefore, completed the undergraduate course after 2000, represent 73.3%. We found out that the sample mainly consists of nurses with less than 10 years since graduation.

Regarding the academic degree, 16 (53.3%) have only the undergraduate course and 14 (46.7%) have a specialist certificate. None of the nurses indicated a MS or PhD as her/his higher academic degree.

Out of the 30 respondents, 18 (60%) answered *yes* and 12 (40%) answered *no* when asked about working in another institution. It is possible that the high workload of nursing assistants is an impediment at the moment of deciding for a graduate course.

Regarding the participation in an updating course in Pharmacology, 27 (90%) answered they had already attended some course on this theme, while 3 (10%) stated they had not. In the group that attended a course in Pharmacology, 13 (43.3%) answered that the course was before or in 2008 and 14 (56.7%) after 2008.

Participation in other updating courses was indicated by 26 (86.7%) individuals and 4 (13.3%) stated they did not attended updating courses. Out of those who reported participating in other updating courses, 6 (33.3%) answered the course was before or in 2008 and 20 (66.7%) after 2008. The results are displayed in Table 1, for a better view.

Table 1. Distribution of nurses with regard to time since graduation, academic degree, participation in a pharmacology course, and participation in other courses. Fortaleza, 2010.

Time since graduation	n	%
0-9 years	22	73.3
≥ 10 years	08	26.7
Academic degree		
Undergraduate course	16	53.3
Specialization course	14	46.7
Pharmacology course		
Yes	27	90
No	03	10
Other courses		
Yes	26	86.7
No	04	13.3

Regarding the opinion about the Pharmacology teaching offered during the undergraduate course, 29 (96.7%) considered it insufficient and 1 (3.3%) believes that the Pharmacology teaching during the undergraduate course was enough for the professional practice.

When asked if the relationship between theory, addressed during the undergraduate course, and professional practice was satisfactory, 28 (93.3%) answered no and 2

(6.7%) answered yes. With regard to the content of the Pharmacology discipline addressed in the syllabus, 29 (96.7%) answered the content is insufficient and 1 (3.3%) answered it is sufficient. With regard to the number of credit hours, 27 (90%) considered it as inadequate and 3 (10%) believe it is appropriate (Table 2).

Table 2. Distribution of nurses according to the opinion about pharmacology teaching, relation between theory and practice, as well as the content and number of credit hours in the Pharmacology discipline during the undergraduate course. Fortaleza, 2010.

Pharmacology teaching	n	%
Satisfactory	01	3,3
Unsatisfactory	29	96,7
Relation between theory and practice		
Satisfactory	02	6,7
Unsatisfactory	28	93,3
Content		
Satisfactory	01	3,3
Unsatisfactory	29	96,7
Credit Hours		
Satisfactory	03	10
Unsatisfactory	27	90

When asked to rate their level of knowledge on Pharmacology, 3 (10%) believe it is insufficient, 19 (63.3%) regular, 6 (20%) good, and 2 (6.7%) great. No nurse indicated the option excellent.

Table 3. Distribution of nurses according to the opinion about their level of knowledge on Pharmacology. Fortaleza, 2010.

Knowledge	Conhecimento	n	%
Excellent	Excelente	0	0
Great	Otimo	02	6,7
Good	Bom	06	20
Regular	Regular	19	63,3
Insufficient	Insuficiente	03	10

DISCUSSION

The nurse is responsible for understanding the effects of a drug, properly administering it, controlling the client’s response, and providing assistance in case of a self-administration.¹³ For this, the nurse needs to have a good knowledge on Pharmacology, a discipline which is essential for the nursing practice because it allows the nurse to understand the action of medicines in the various human body systems.

Only thirty nurses agreed to participate in the research, something which shows that there is still a great resistance from the nursing team to collaborate in scientific researches, and perhaps a fear to answer questions about the theme "pharmacology". The higher the nurses' knowledge on the medicines they administer, the greater is her/his ability and confidence to perform the task of administering medicines.¹⁴

The findings also showed that most nurses work in another institution, something which demonstrates that professionals need to have more than a job, with several hours of continuous work, overloading them and turning it more difficult to dedicate some time to update. As seen in other studies, nursing assistants have difficulty to participate in scientific researches due to their work conditions.¹⁵

In an increasingly competitive labor market, we found out in our study a high number (27/90%) of nurses seeking to attend updating courses in Pharmacology. These

results show that most nurses have already attended some updating course in Pharmacology, something which may indicate an interest in professional qualification. The training process should not finish at the end of a professional course, but it should continue throughout the individual’s life.¹⁶

Our results showed that many nurses are concerned with learning more about Pharmacology, something which demonstrates that the content learned during the undergraduate course was not enough. This fact may be confirmed through other studies, such as that carried out with students at the last semester of the undergraduate Nursing course, in which an assessment of the knowledge on Pharmacology considered this discipline as a true "depository of content", not concerned with relating theory to practice.¹³

When asked about the level of satisfaction with regard to Pharmacology learning in nursing schools, we found out that there was a great dissatisfaction among respondents, 29 (96.7%) reported that this teaching was not enough. Other studies corroborate the results of this research, indicating a negative opinion of nurses with regard to the teaching of Pharmacology during the undergraduate course.^{9,17}

Another study, by Morrison et al., showed the unpreparedness of nurses to administer medicines, pointing out the need for analyzing and evaluating the current syllabi of Nursing courses, allowing an adaptation of theory to practice.¹²

CONCLUSION

The nurse who works in ICUs has assignments which require knowledge on Pharmacology. However, to master the skills related to the management of medicines, a good academic background is essential. To turn nursing education as close as possible to the ideal status has been a challenge for educators in order to provide an appropriate training for nurses, taking into account the diversity involved in their professional practice.^{15,17}

In order to obtain knowledge on Pharmacology which is adequate to meet the needs of the nurse's daily practice, each one able to interfere with this knowledge should give her/his share of collaboration. They consist of training schools, health institutions, and professionals themselves. A review of the current syllabi of Nursing courses, with regard to the study of Pharmacology, is a need which should not be postponed, after all, nursing has a great responsibility in the management of medicines. However, besides the quality of academic education, it is essential that the institutions providing health services keep the continuing education of nursing professionals. Continuing education plays a role in the productive process.¹⁸

Finally, the professional should assume the responsibility to strive for improving her/his knowledge. Thus, it is possible that Nursing increasingly evolves as a science, providing the society with the safety of a committed health care.

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Corresponding Address

Luciana Kelly Ximenes dos Santos
Rua Frei Odilon, 352, Álvaro Wayne
CEP: 60336-190 – Fortaleza (CE), Brazil