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RESEARCH

Evento adverso versus erro de medicação: percepções da equipe de enfermagem atuante em terapia intensiva

Adverse event versus medication error: perceptions of nursing staff acting in intensive care

Evento adverso frente a errores de medicación: las percepciones del personal de enfermería que actúa en cuidados intensivos

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ABSTRACT

Objective: To analyze the role of nursing staff in administering medications in the intensive care unit. **Method:** This was a descriptive, exploratory study with a quantitative approach developed with 29 nurses, from June 1 to October 31, 2011. The data were collected through observations and participatory interview. **Results:** The study showed that 48% of professionals did not know to distinguish between medication errors and adverse event, 100% of the staff has limited adverse events only to clinical patient changes, the primary attitude of the nursing staff (42% of nurses and 42% of technicians) in an error is communication. **Conclusion:** The study participants have little knowledge about the concepts of medication errors and adverse events. **Descriptors:** Medication errors, Nursing, Patient safety, Intensive care unit.

RESUMO

Objetivo: Analisar a atuação da equipe de enfermagem na administração de medicamentos em unidade de terapia intensiva. **Método:** Trata-se de um estudo descritivo, exploratório com abordagem quantitativa desenvolvido com 29 profissionais de enfermagem, no período de 1º de junho a 31 de outubro de 2011. Os dados foram coletados através de observação não participativa e entrevista. **Resultados:** O estudo demonstrou que 48% dos profissionais não sabiam distinguir entre erro de medicação e evento adverso; 100% da equipe limitaram os eventos adversos apenas às alterações clínicas do paciente; a principal atitude da equipe de enfermagem (42% dos enfermeiros e 42% dos técnicos), em frente de um erro, é a comunicação. **Conclusão:** Os participantes do estudo apresentaram pouco conhecimento sobre os conceitos de erros de medicação e eventos adversos. **Descritores:** Erros de medicação, Enfermagem, Segurança do paciente, Unidade de terapia intensiva.

RESUMEN

Objetivo: Analizar el papel del personal de enfermería en la administración de medicamentos en la unidad de cuidados intensivos. **Método:** Se realizó un estudio descriptivo, exploratorio con enfoque cuantitativo desarrollado con 29 enfermeras, de 1 junio a 31 octubre 2011. Los datos fueron recolectados a través de observaciones y entrevistas participativas. **Resultados:** El estudio mostró que el 48% de los profesionales no sabía distinguir entre los errores de medicación y eventos adversos, el 100% del equipo limitó efectos adversos sólo a alteraciones clínicas del paciente, la actitud fundamental del equipo de enfermería (42% de las enfermeras y el 42% de los técnicos) frente a un error, es la comunicación. **Conclusión:** Los participantes en el estudio tienen poco conocimiento acerca de los conceptos de los errores de medicación y los efectos adversos. **Descriptor:** Errores de medicación, Enfermería, Seguridad del paciente, Unidad de cuidados intensivos.

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INTRODUCTION

In the health system, human errors and the resulting damage caused to patients are reported since the emergence of medicine and have been described and studied for more than a century.¹

Healthcare is characterized as one of the most complex and dynamic activities carried out by humans. However, unlike other areas as industrial and aviation, such development was not accompanied by investments to develop systems of prevention of human errors, in order to make safety the health insurance system.²

In this sense, in the area of health, the error was being attributed to bad professional, a problem of the individual, the flaws in their conduct and/or in their knowledge (incompetence, negligence or recklessness). Thus, it was developed a culture of punishment to individuals who have committed mistakes, being the guilt, fear and shame feelings prevalent among health professionals. Similarly, it must understood that humans have a similar cognitive process, so that errors can be repeated and be committed by different individuals who perform the same activity.³

Human error can be defined as unintended use of a wrong plan to achieve an aim or non-performance to the satisfaction of an action properly planned. It is therefore necessary to investigate in depth the characteristics of human error incidents during the making of distinct activities, to create strategies and technologies capable of preventing errors and accidents.⁴

However the drug delivery area deserves attention according to the high rate of errors. It is estimated that 88% of patients who seek health-related care, receive prescription medicines, making drug therapy one of the most used intervention practices for the provision of care to the patient.⁵

Studies conducted over the past few years demonstrate the existence of errors during this process. Every patient admitted to a hospital may have 1.4 medication errors during hospitalization and every 1000 prescriptions made will have 4.7 errors. For each 1000 days of hospitalization, they will find 311 errors and 19 adverse events to medication. In 5% of prescriptions, there will be errors in medication and 0.9% of these will result in an adverse event to medication.⁶

This statistic can be even more alarming when it comes to critical patients. The intensive care unit (ICU) is a sector of the hospital for the care of patients requiring complex and specialized care. Due to worse clinical condition and greater severity of illness, patients hospitalized to ICU receive at least twice more drugs that patients hospitalized in General, which increases your exposure to errors.⁷

Given this context, the present study aimed to analyze the performance of nursing staff in the administration of medicines in ICU. It should be noted that this analysis included the following aspects: professional design about the possible damage caused by the

administration of medications; the ability to distinguish medication error adverse event; as they realize the occurrence of an adverse event; and what is the attitude taken in front of a medication error.

METHOD

This is a descriptive and exploratory study with quantitative approach. The research project was submitted to the Research Ethics Committee of the Federal University of Rio Grande do Norte (UFRN) and approved under Protocol n° 046/2011 and CAAE n° 0239.0.051.000-10.

The study was conducted in two intensive care units of a University Hospital, located in the municipality of Natal/RN, during the period from 1 June to October 31, 2011. The hospital is part of a hospital complex of a public University located in the city of Natal/RN, integrated network of teaching hospitals of the Ministry of education, classified as an institution of high and medium complexity of SUS.

The sample was composed of seven nurses and 22 nursing technicians, who have agreed to participate in the research and suited to inclusion criteria.

The inclusion criteria included: being a member of the nursing staff specialized in ICUs, working at direct assistance to a hospitalized patient and accept to participate in the research, signing a Free and informed Consent Term. However, nursing professionals who worked eventually in intensive care due to preclude the observation; being on maternity leave or on vacation during the period of data collection were established as exclusion criteria.

Data collection occurred in two distinct steps. At first, there was a systematic observation on pre-determined days and times according to the scale of work. This observation was guided by a structured guide, which contemplated the start and end time of observation, the hygiene or not of the hands, achieving or not the correct technique of preparation of medicines and communication of adverse events.

In the second step, an interview was conducted through a semi-structured guide, which was divided into a part of socio-demographic characterization and a with issues guides on the subject. This was prepared by the researcher from the theoretical emplacement found in the scientific literature^(6, 8-11). The bibliographical research to support this study was performed in the databases in Nursing (BDEFN), Scientific Electronic Library Online (SCIELO) and National Library of Medicine (PUBMED), through the health sciences keywords (DeCS) "Medication Errors", "Nursing", "Patient Safety" and "Intensive Care Unit".

This semi-structured guided interview included the following variables: Socio-demographic Characteristics (sex; age; marital status, professional category, length of training, training courses, professional experience in ICU, amount of employee links and number of weekly working hours); knowledge of certain medication; difference between medication errors and adverse event; perception of the occurrence of adverse events and attitude in front of the medication error.

The interviews occurred, according to availability and preference of the interviewee, and for the better securing of lines a tape recorder was used with the prior permission of the participant.

The analysis of the results was performed by descriptive statistics, so an electronic database in the application Microsoft Office Excel Spreadsheet was initially built and created subsequently, tables with their absolute and relative frequencies.

RESULTS AND DISCUSSION

Of the 29 participants of the survey, 82.76% belonged to the female gender; 79.74% were adults aged between 24 and 40 years old; 58.34% were married; 31.04% had between 11 and 15 years of graduates; 37.94% had between 5 and 9 years of professional experience in ICU; 74.42% claimed to have more than a job; and 44.82% reported working about 80 hours a week.

As regards the design of professionals about the potential damage associated with the practice of administration of medications, the survey showed that 100% of respondents believed that the drugs could cause harms to patients, including lethal harm. However, 75.87% stated that the injury occurs by means of an administrative error.

As regards the difference between medication error and adverse event, it was asked the researchers if they believed that these two concepts are equivalent. Therefore, they placed the answers as follows: 1) Yes, for those who found that medication error is the same as adverse event; 2) No, but they didn't know how to differentiate it, it was from the searched ones that stated that there is a difference, but didn't know how to describe it; and 3) No and did not properly differentiated, understands the one that points of view adequately the difference between the concepts (table 1).

Table 1 - distribution of nursing staff specialized in ICUs regarding the knowledge about medication error and adverse event. Natal-RN, 2011.

Believing that medication error is the same as adverse event	F	%
Yes	5	17,24
No, but they did not know to differentiate	9	31,04
No, and did not properly differentiate it	15	51,72
Total	29	100

It is observed in table 1 that 17.24% of respondents reported that both concepts are equivalent and 82.76% believed that there are differences between medication error and adverse event. However, from the last one, a considerable portion (31%) failed to distinguish them.

About occurrence of adverse events, it was questioned whether study participants in the perception of this item in their daily practice. Because it is an open question, a participant may have cited more than one event, so that all were recorded in a total of 45. The category skin changes include quotations about rash, petechiae, skin rashes and redness; the change of vital signs is related to changes in blood pressure, heart rate, respiratory rate and temperature; the other category includes patient discomfort, sweating and change in level of consciousness; and finally, one in which the patient himself reports (Figure 1).



Figure 1-Distribution of adverse events cited by nursing staff specialized in ICUs. Natal-RN, 2011.

The respondents were also questioned on what would be their attitude in front of a medication error. It was noticed in Figure 2 that most nurses (42.86%) obligated to report immediately to the doctor, followed by that intensify the patient care (28.57%) and those who would call the nursing technician to talk (28, 57%).

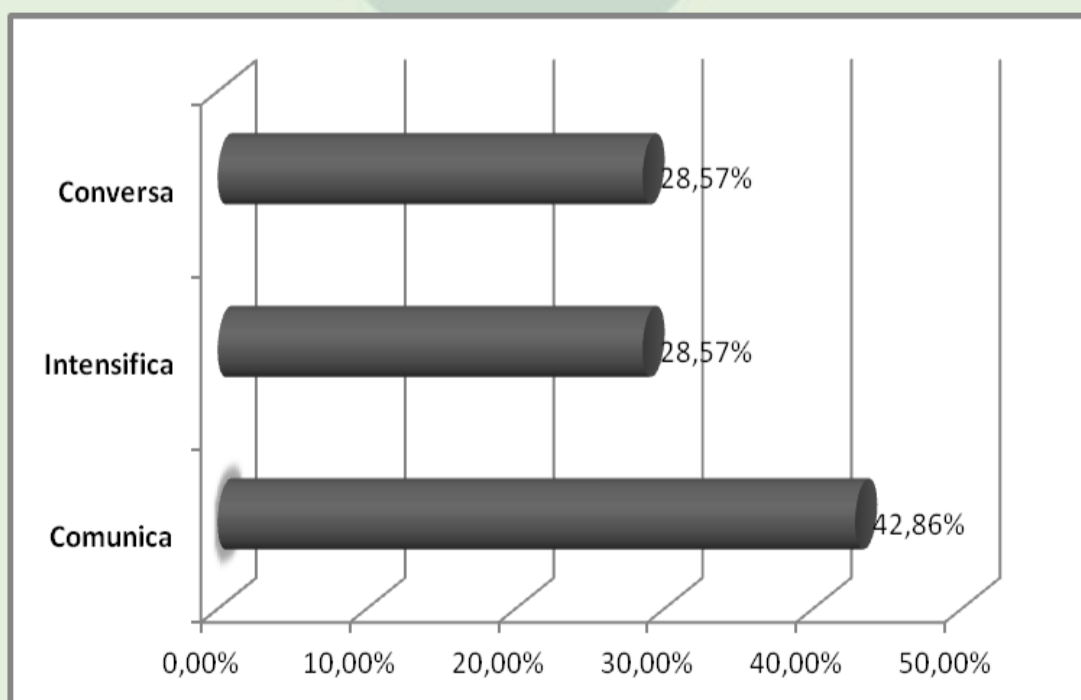


Figure 2 - conduct of nurses working in ICU's in the occurrence of a medication error. Natal-RN .2011.

With the same question for the technical team of professional nursing, the first attitude was also communicate, either the nurse or the doctor. However, a small portion reported feelings representing emotional instability. The results are in Figure 3.

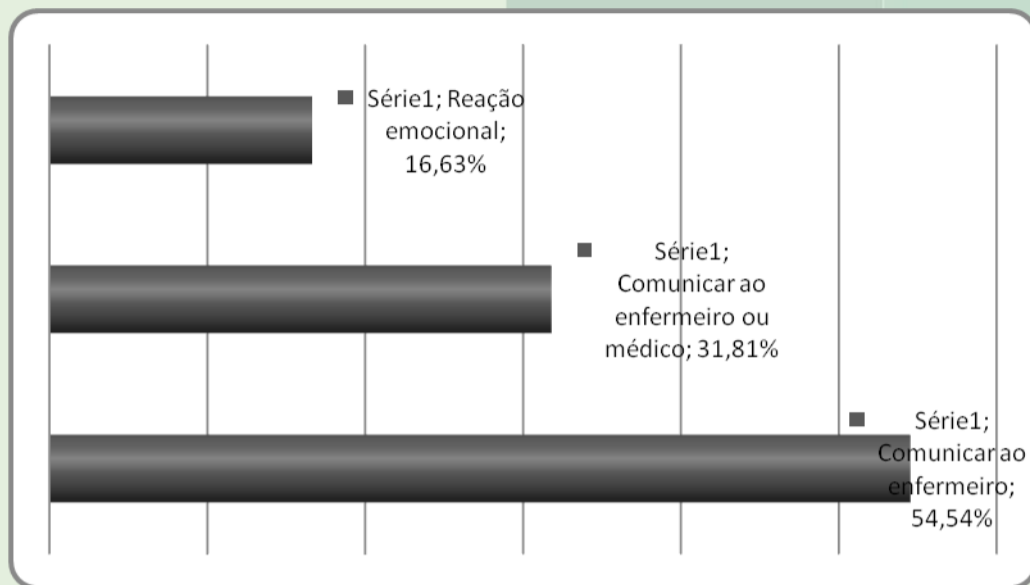


Figure 3 - Conduct of nursing technicians working in ICUs in the occurrence of a medication error. Natal-RN .2011.

The practice of administration of medication is complex and it is subject to the occurrence of errors in any of its stages. The knowledge of the concept of medication error by nursing staff promotes the discovery, as well as the elaboration and implementation of preventive measures.¹²

The study revealed that there is a misperception of most of the nursing staff on the relationship between administration of medicines and occurrence of damage to the patient, since the damage can occur even when administering a medicine in correct doses for prophylaxis or treatment, being considered an inevitable adverse event. In this way, the damage may or may not be associated with a medication error.¹³

During the hospital stay, in which the patients are subjected to a large number of interventions, the occurrence of errors is a real possibility. With regard to medication treatment, used in about 88% of patients who seek a health service, it has been a standout. The Institute of Medicine of the United States of America, released in 2002, that about 7,000 Americans die each year by medication errors, so that people died for this cause when compared to car accidents.¹⁴

To standardize the discussion of medication error in the health services, the National Coordinating for Medication Error Reporting and Prevention - NCC MERP (1998, p. 1), American Corporation to promote safe use of medicines and implement prevention strategies and defined it as "preventable event that may cause or lead to inappropriate medication use or patient harm, while the medication is under control of a professional of the patient or of the consumer."¹⁵

In this sense, medication error can cause harm to the patient or not. If so, it is an adverse event, defined as injury suffered during the health care, causing secondary diseases or worsens in the clinical picture of the patient. An unexpected and undesired harmful response related to the administration of a medicine at doses normally used for prophylaxis, diagnosis and treatment, it is considered unavoidable adverse event of the medication differing from the error.¹⁶

The present study revealed that 17.24% of respondents stated that medication error is equivalent to 82.76% adverse event and believed that there are differences between them. However, from this last one, a considerable portion (31%) was unable to distinguish them correctly.

In the face of empirical data, it is noted that the study participants have little knowledge about the concepts of medication errors and adverse events, which can increase the risk of an unsafe practice, arising from the non perception of possible error, which, consequently, can slow the development of tools to promote rethinking of practice for quality in the administration of medicines.

The categorization of types of medication errors, internationally accepted, proposed by the American Society of Health System Pharmacists (ASHP) in 1993, are classified in: of prescription; of omission; of time; unauthorized medication administration; of dose; of presentation; of preparation; of administration; by using medicines deteriorated; of monitoring; due to patient compliance; and others.¹⁷

The definition of concepts and standardization of language among professionals constitute essential tools within the institutions as regards the control of systematic errors and consistent. Knowledge of the concepts of medication error and adverse event by the team that performs drug therapy contributes to their perception, as well as for the creation and implementation of protective measures. Therefore, to identify a medication error the professionals must meet various kinds of events to have subsidies in time to perform notifications and to develop a safe practice.¹⁰

The study showed that the nursing staff have limited adverse events only to changes in the patient's clinic, showing a lack of knowledge on the subject. This is because, as I mentioned earlier, the medication related adverse events include damage causing errors at any step of the medication. For example, if a patient with infection fails to receive a dose of antibiotics may not have clinical worsening, but he characterizes adverse event related to an error of omission of dose. This lapse could lead to a microorganism's resistance to the antibiotic in use.

During observations, it was noticed that the few reports of adverse events, nursing technicians, nurses or doctors were from skin changes, which reinforces the information presented in the interviews.

As regards the attitude of nurses in a medication error, the survey showed that most will report promptly to the doctor, followed by those who intensify the patient care. These data corroborate an study¹¹ on conduct and feelings of nurses in front of adverse events with medication, which showed that most professionals (69.8%) initially communicated to the doctor, followed by those who intensify the care (55.1%).

As for the attitude of nursing technicians, the study demonstrates that most of them will report the fact to the nurse or the doctor. The literature reports that the communication of the event to the doctor, as a priority conduct, seems adequate and expected, since such situations may require specific medical procedures, such as the prescription of other medicine, laboratory tests and request more careful clinical evaluation.¹⁸

Emotional reactions, highlighted by lines of respondents, corresponded to 16.63%. This value can be significant reflection of culture of punishment still prevailing in our health

services. Traditionally, when the errors occur, the first question that arises is "who did this?", in an attempt to find a guilty and request compensation and recantations, seeking to ensure that the failure will not occur again.¹⁹

We need to understand that human errors may be repeated in the same activity performed by different individuals, since they have similar cognitive process. In this way, to find guilty blocks the implementation of effective measures in preventing mistakes that other people can come to commit in similar situations.²⁰

This perspective is also valid for the medication errors as they occur as a result of a chain of events that occur in a bad elaborated system. It is not possible to assign the occurrence of an error only to misguided attitude of the individual. It is necessary to take into consideration the various related causes, such as: lack of knowledge about medicines, lack of information about patients, violation of rules, slippage and lapses of memory, transcription errors, flaws in interaction with other services, failures in the doses administration, problems related to the drug infusion devices, inadequate patient monitoring, storage and dispensing problems, staging errors and lack of standardization of medicines.²¹

Thus, we need to identify in each reality the determining factors and contributors to the occurrence of medication errors in order to create strategies in order to reduce them, making increasingly safe assistance to patients.

CONCLUSION

The development of this study makes it possible to affirm that there is a deficiency of perception and knowledge of nursing professionals, about the concepts of medication error and adverse event. This can enable development of unsafe practices to patients, as well as prevent the creation of tools that prevent the errors related to the administration of medications and promote the quality of this practice in the service.

To ensure that security practices are discussed and implemented, it is necessary that the directors of the organizations to develop a culture of safety for the patient and organize a multidisciplinary team to lead discussions, seeking to analyze and evaluate each existing process in search of improvements.

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