THE NURSES' UNDERSTANDING ABOUT PATIENT SAFETY AND MEDICATION ERRORS

COMPREENSÃO DE ENFERMEIROS SOBRE SEGURANÇA DO PACIENTE E ERROS DE MEDICAÇÃO

COMPRENSIÓN DE LOS ENFERMEROS SOBRE LA SEGURIDAD DEL PACIENTE Y ERRORES DE MEDICACIÓN

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ABSTRACT

This study aimed to verify the understanding of nurses from basic and hospital care units about patient safety and medication errors, as well as identifying the behavior and strategies used in the occurrence of medication errors. It is a qualitative, exploratory, and descriptive research. The sample consisted of 20 nurses from São Paulo state. The theoretical reference of thematic analysis was used for data analysis. There was a good understanding of the concept of patient safety and the participants identified that the nurse has a fundamental role in the propagation of safety. An absence of uniformity about the understanding of medication errors was observed among nurses. The main factors identified as contributing to the occurrence of errors were work overload and lack of attention. Employee orientation was the most reported conduct to deal with medication errors. Capacitation and trainings emerged as the most used strategies for improving medication safety. It was noted that there is concern about patient safety; however, a culture of punishment regarding medication errors is still present.
Keywords: Nursing; Patient Safety; Medication Errors; Health Personnel; Nurse's Role.

RESUMO

Objetivou-se verificar o entendimento dos enfermeiros de unidades básicas e hospitalar sobre segurança do paciente e erros de medicação e identificar as condutas e estratégias utilizadas na ocorrência desses erros. Trata-se de estudo qualitativo, exploratório e descritivo, com a participação de 20 enfermeiros do estado de São Paulo. Para análise dos dados foi utilizado o referencial teórico de análise temática. Houve bom entendimento do conceito da segurança do paciente e os participantes identificaram o enfermeiro como um profissional fundamental para a propagação da segurança. Observou-se ausência de uniformidade na compreensão sobre erro de medicação pelos enfermeiros. Os principais fatores identificados para a ocorrência do erro foram sobrecarga de trabalho e falta de atenção. A orientação do funcionário foi a conduta mais relatada para lidar com erros de medicação. Como estratégias mais utilizadas para a melhoria da segurança com medicamentos emergiram a capacitação e treinamentos. Nota-se que há preocupação com a segurança do usuário, mas ainda se vive uma cultura de punição quanto aos erros de medicação.
Palavras-chave: Enfermagem; Segurança do Paciente; Erros de Medicação; Pessoal de Saúde; Papel do Profissional de Enfermagem.

RESUMEN

Este estudio buscó verificar la comprensión de enfermeros de unidades básicas y hospitalarias sobre la seguridad del paciente y los errores de medicación, así como identificar las conductas y estrategias adoptadas en casos de errores de medicación. Se trata de un estudio cualitativo exploratorio - descriptivo con la participación de 20 enfermeros del Estado de San Pablo. Para el análisis de datos se utilizó el marco teórico del análisis temático. Los participantes entienden bien lo que significa seguridad del paciente y consideran que el enfermero es el profesional fundamental para propagarla. Se observó ausencia de uniformidad en la comprensión de errores de medicación por parte de los enfermeros. Los principales factores identificados en los casos de errores de medicación fueron sobrecarga de trabajo y falta de atención. La conducta más citada para hacer frente a los errores fue orientación de empleados. Las estrategias más usadas para mejorar la seguridad con medicamentos fueron capacitación y entrenamiento. Se observa preocupación con la seguridad del usuario, pero todavía está presente la cultura del castigo en los casos de errores de medicación.
Palabras clave: Enfermería; Seguridad del Paciente; Errores en la Medicación; Personal de Salud; Rol de la Enfermera.

INTRODUCTION

There is a global movement aimed at improving patient safety as well as ensuring quality care for the population. This movement involves efforts of the entire health care system to promote risk management and a secure environment, including among other practices, the safety administration of medicines.

An important reference to patient safety is the report from the American Institute of Medicine *To err is Human: Building a safer health care system*[1], which brings alarming data about preventable errors in the healthcare practice. As an example, medication errors cause 7,391 deaths annually in American hospitals and more than 10,000 deaths in outpatient clinics.

These data have concerned many professionals, managers, and health authorities. From this publication, the "Age of Patient Safety" emerged mobilizing various national and international institutions, in order to make the healthcare process the safest and less error prone.

The World Health Organization (WHO) and the *Joint Commission and Agency for Healthcare Research & Quality* (AHRQ) are worldwide references in this subject. These organizations began a long process of building a base to better understand the challenges in patient safety besides the development of solutions and improvements to health care services.

In 2005, the World Alliance for Patient Safety was created and six goals were identified for activities in this area, including the development of "solutions for patient safety." Therefore, the *Joint Commission*, called as Collaborating Center by the WHO, established and recommended the implementation of six international goals for patient safety to promote specific improvements in problem areas in health assistance.[2]

Nationally, the Ministry of Health created the National Program on Patient Safety (PNSP) in 2013 defining six protocols to be implemented by health institutions, including the safety of prescribing, use, and administration of medications.[3]

In the same year, the National Health Surveillance Agency (ANVISA) published the Resolution of the Collegiate Board number 36 (RDC 36/2013) establishing actions to promote patient safety and aiming at improving the quality of health services.[4]

Patients around the world are subjected to errors in healthcare. The WHO estimates that one in 10 patients may be a victim of errors and adverse events during the provision of healthcare in the world and that it is necessary to establish preventive measures in order to reverse this problem.[5]

The WHO defines an error as:

A failure to execute an action planned as desired or incorrect development of a plan. They may occur by a wrong action or for failing to practice the right action, either in the planning stage or in the implementation stage.

Medication error is "considered as any preventable event that may cause or lead to inappropriate medication use or patient harm while the medication is under control of the healthcare professional, patient, or consumer".[5]

A medication error can occur within several processes in the health institution; from its prescription, transcription, dispensing, administration, and even monitoring and independent of the result, that is, whether there was injury to the patient or not.[5]

Thus, the nursing team must provide safety care, free of any harm during the care, identifying possible failures in the health care system in a continuous search for solutions aimed at an effective and safety care.

Nurses should be responsible for the planning of nursing actions regarding the provision of adequate and safe material resources as well as in staff training and promotion of work and environmental conditions suitable for the practice of care, ensuring safety for the patient.[6]

Therefore, it is essential to identify and evaluate the perception of professionals experiencing medication errors, especially nurses, since they play managerial and leadership roles in the nursing team. This professional is responsible for the nursing team in the case of a medication error and must be prepared to deal with this situation.

OBJECTIVE

This study aimed at assessing the understanding of nurses in basic and hospital units about two aspects of the inter-related care: patient safety and medication errors.

SPECIFIC OBJECTIVES

1. to report the understanding of nurses about patient safety and medication error.
2. to identify the causes of medication error in the nurses' view.
3. to describe behaviors and strategies indicated by the nurses towards medication errors.

METHOD

This is a qualitative, exploratory, descriptive, and cross-sectional study. The qualitative research proposes to obtain descriptive data through direct contact between the researcher and the phenomenon and works with the universe of meanings, reasons, beliefs, values, and attitudes.[7]

The research was developed based on the qualitative reference proposing a particular and deep understanding of the phenomenon, specifically, the proposal of the study was to

work with aspects of development and social dynamics as well as the nurses' concerns and interests.[7]

The initial population had 39 nurses, 24 belonging to the Basic Health Units (UBS – *Unidade Básica de Saúde*) and 15 to the teaching hospital (HE) in the city. However, 19 nurses did not participate for several reasons, including not being interested, being sick or on maternity leave, or because they were on vacation during the months of data collection. The final population had eight UBS nurses and 12 nurses from the teaching hospital in the city of São Paulo, totaling 20 nurses. The data collection was conducted at the participants' workplaces between August and October 2012.

The project was approved by the Ethics Committee in Research with Human Beings from the Federal University of São Carlos (P. Number 240/2012). After identification of the nurses from the selected institutions, the first contact by phone was scheduled to clarify the objectives of the study and invite participation in the research.

A semi-structured interview technique was used and only one interview was held with each participant. The interviews were conducted individually with each nurse in the meeting room of the hospital providing more privacy. The nurses´ consultation room was used in the UBS for individual and private interviews. The participants' speeches were recorded when allowed and after agreement to participate by signing the Informed Consent Term.

The digital recorder Sony PX312 was used. When the nurse did not allow recording, the answers were written down. The interviews started with a script with five questions related to patient safety and medication errors, namely:

1. what do you understand by patient safety?
2. what is a medication error to you?
3. what do you think contributes to errors with medications?
4. what are the steps taken in the unit when facing a medication error?
5. what strategies could minimize the occurrence of medication errors?

Initially, the researchers introduced themselves and asked about the possibility of recording the interview. In the end, they thanked the participation of nurses and committed to returning with the results after data analysis. The data saturation technique was applied, that is, until the obtained data presented some redundancy or repeated understanding of meanings.[8]

The interviews were fully transcribed and listed randomly to maintain the confidentiality and anonymity of participants. The contents were submitted to the categorical thematic analysis technique composed of three different phases: pre-analysis, material investigation, and data categorization.[7,9]

Each participant received a fictional identity for the identification of interviews and anonymity (E1 to E20). Data analysis

followed the steps of the proposal of thematic content analysis, namely: ordering the data after the transcription of recordings; readings of reports aimed at arrange them in order to establish a sense of the set of propositions; reading the transcript text in order to find the most relevant aspects and themes in the speeches; grouping of common content in categories; and interpretation of the themes.

RESULTS

A total of 20 participants were interviewed, two males and 18 females; 12 nurses from UBS and eight from all shifts (day, afternoon, and night) from the HE. The age range of the hospital participants was from 25 to 40 years old, and their average working time was two years and six months. The age range of the UBS participants was from 30 to 50 years old and the average working time corresponded to six years and five months.

The average interview duration was 15 minutes per participant. Four categories were identified at the end of the exploration of the interviews' contents: the contribution of nurses and their views on patient safety; identification of problems for medication therapy; behaviors adopted when facing medication errors; and strategies to improve the safe use of medicines.

THE CONTRIBUTION OF NURSES AND THEIR VIEWS ON PATIENT SAFETY

The first identified category brings the concept of each participant about patient safety and their involvement as nurses in this topic. Most participants claimed that patient safety is to assist patients without harming them, preserving their physical and mental integrity, and the maintenance of a suitable physical environment. It was also mentioned that the professional must be confident, secure, and able to promote quality care and that safety involves all the steps from the patient entry into the unit until his departure.

This category can be represented by the following speech:

Patient safety to me is an environment, a place, and even procedures that do not bring any damage to him [...] the environment must contribute so that there is no harm to the patient. Regarding the procedures, professionals must be well trained, all speaking the same language (E5).

[...] It is all you will do with responsibility, then safety is what you are doing for him, [...] knowing the theory [...] without fear, knowing that, having experience (E17).

As the nurses´ contribution to the theme, participants raised the following as their main activities: orientation of the nursing

staff, service management, patient and family orientation about care, staff supervision, provision of a correct and safety care, and finally, the evaluation of patients as for case complexity.

> "[...] trying to organize the service, right, in the best possible way, always getting along with the team, right, and dealing with the situations with the patient. To transmit safety and also feel safe"(E3).

Differences between the speeches from hospital and UBS professionals were observed as for the nurse´s role in their respective work locations. There is a management approach in the hospital that reinforces the hierarchical relationship with other nursing professionals, bringing the nurse as a sector leader who supervises and surveys the nursing team. In the UBS, the speeches show the nurse as a reference professional for the nursing team and as a trusted and available professional to be consulted in case of questions.

Identification of problems in the medication therapy

When questioned about the concept of medication error, most professionals cited the failure to meet the five right ways of medication (patient, dose, via, schedule, and correct medication). The occurrence of a failure in the process, from the prescription to medication dispensation by the pharmacy, and usage, was also identified as an error. Some professionals considered a medication error as only a medicine swap, and only one professional did not conceptualize it properly: *"[...] it is to administer an incorrect medication, or the wrong way, or to the wrong patient, do it at the wrong time, in the wrong dose. They are five rights ways to do it and five ways also to make mistakes" (E6).*

Work overload, lack of attention by the professional, unpreparedness or professional lack of training, illegible prescription, lack of enough professionals in the health care services, care automation, lack of work planning by the professional, lack of interest in the work, and inadequate physical environment were cited as factors that contribute to medication errors.

> *Service accumulation is the first factor, reduced number of employees, rush to give the medication, desire to get ahead with the work, and doctor´s bad handwriting contributes to errors (E13).*

> *Lack of attention, lack of concentration, chaos at the time of service, reduced staff [...] the fact that the unit is not properly built for it [...] so things happen through improvisation (E5).*

It was noticed that the problems addressed by hospital or basic care professionals diverged. In the hospital, the biggest problem reported was the excessive amount of medications per patient increasing the chance of errors in the prescription and administration of medications. In the UBS, problems in the physical environment were the most reported because most of the basic units are not structurally planned. In the professionals' view, this creates chaos in the assistance, professionals´ overload, and consequently facilitates the occurrence of medication errors.

Behaviors used before medication error

This category addressed the behavior adopted by the service and professionals to deal with medication errors. Most participants believe in employee orientation and training of those involved with the error as well as the importance of communicating it to the doctor. In addition, nurses reported that punishment and function exchange are a present reality in health care services. However, they consider important the communication to all staff and management and acknowledge the need to notify the error and believe that it is necessary to communicate to the patient and their families about the iatrogenic occurrence.

> *Immediately report to the doctor, communicate to staff, nurse, pharmacist. After that, guide the employee (E19).*

> *[...] when this error is evident, usually we call the employee and give him a warning. If there is a more serious case, we will be reaching for immediate supervision, depending on the case, there is sector exchange for the employee or go on activity restriction (E10).*

There were differences in the speeches regarding the behavior of professionals about medication errors. When questioned about it, UBS professionals spontaneously told about some cases that occurred in the unit and the procedure adopted for each case. In the hospital, the first answer from the nurses was that they had not witnessed any event in the institution and expressed actions to be taken in a hypothetical situation. However, when they realized that the recorder was off, they commented about some medication error event that had occurred.

Strategies to improve the safe use of medicines

The following strategies to improve the safe use of medicines were observed at first: continuing education and health team training, followed by increase in the number of employees in order to avoid work overload, better organization of the physical environment and standardization of service, better supervi-

sion of nurses in the nursing team, improved readability of prescription or electronic prescriptions, and only one respondent referred to the importance of non-punishment as a strategy.

> [...] from lectures, recycling, even more employees, because there are days when the demand is very high! Increasing the number of staff and rooms (E14).

> [...] if you do not punish, but show education to these professionals who make mistakes, you end up having them as allies, not against you. [...] Relying on the professional and not punish them, not get them fired. If he made a mistake and was not properly educated here and was not oriented, and he got fired, he will end up at another institution making the same mistake (E7).

DISCUSSION

The results found in the first category "the nurses' contribution and their views on patient safety" are similar to what is reported in the literature[3,10]. Thus, the Code of Ethics makes it clear in article 16 – the responsibility to "ensure nursing care to the client that is free of harm from malpractice, negligence, or recklessness".[10]

Participants corroborated this statement since they recognized the assistance free of harm as the main goal of patient safety. It should be noted that it is very important that professionals have knowledge about the meaning and definition of medication errors and it is expected that they apply the concept in their work routine.

The interviewed nurses brought a similar view to the declaration by COREN-SP[11] to promote patient safety, which reinforces the need for nursing professionals with technical, scientific, ethical, and legal expertise who should only perform activities when they are able to conduct them safely for themselves and others.

There was also a similarity with the literature regarding the role of the nurse. Nurses should be responsible for the planning of nursing actions regarding the provision of adequate and safe material resources as well as staff training and promotion of both environmental and working suitable conditions for the performance of care, thus ensuring patient safety.[6]

In addition, professionals showed in their speeches the importance of the nurse as a sector manager and for the nursing team. The literature also states that the effective presence of the professional nurse in the process and supervision of technicians and nursing assistants cannot be dismissed. This should be a continuous and uninterrupted process for the verification and correction of potential failures in order to establish strategies to be followed, to assess imminent risks, and verify failures

that may interfere with patient care, thereby preventing the occurrence of medication errors.[12,13]

The need to create a multidisciplinary committee involved in patient safety aspects, aiming at the prevention and reduction of adverse events and medication and clinical risk management was not observed in the participants´ speeches. This committee assists in the formulation of strategies for institutions to perform safer care and become error free. Such information is against that indicated by PNSP, which aims to create such commissions.

The importance of integrating nurses in these safety committees and need for these professionals to be updated and constantly trained was also reported. Nurses should be involved throughout the research process and work with the interdisciplinary team in all care environments.[14]

Considering that the nurse is trained to be a critic and leader professional in a team, he must be engaged in a constant search for information and research evidence into the clinical practice. By combining knowledge, analysis, and evidence, nurses will be challenged to improve care processes continually and encourage their interdisciplinary teams in order to ensure better care for patients.[14]

When analyzing the second category "identification of problems for medication therapy", similarities with other authors in the field were noticed because there is not uniformity in the understanding of what medication error is by professionals.[15,16] This finding reinforces the need to clarify for the nursing team the concept of medication error and types of errors.

Besides the superficial definition of medication error, some concerns about discussing the issue and reluctance to exemplify some iatrogenic events that occurred in their workplace were observed. The literature review on the subject showed that the events are not easily reported because of the stigma of a negative attitude towards the incident and the complex reports that professionals must prepare.[17]

There are also similarities in the most frequent factors for errors found in the literature.[17,18] Another study analyzed the perception of nurses about the causes of medication errors and their records and were related to the lack of readability in the handwriting of doctors, distractions, fatigue, and overload of professionals.[19,20] This legitimizes the findings of this research; the first factor for the occurrence of errors was workload resulting from fatigue and followed by the lack of attention by the professional.

The third category of research, "behaviors adopted before medication errors", showed data that aimed to assist in understanding the attitudes of professionals when facing the problem and in notifying the error. There were similarities with the literature when asked the most effective conduct to deal with medication errors since employee orientation was the most reported conduct.[21] Another recurrent behavior in the literature

is the communication of the error to the doctor and responsible nurse, notification and direct patient care reports.[18,22]

In addition, the main conducts reported in the study were professional orientation, followed by communication with the doctor, and punishment. It is noticed that punishment was frequently reported, above many other behaviors, for example, communication with the team and management, error notification, or even communication with the patient and family. Punishment was also present in the literature, which notifies that for 74.3% of the sample, punishment occurs sometimes or always, with the predominance of verbal warning (49%).[23]

Fear of punishment, even in the description of cases experienced in the unit, was noticed because when asked about their behavior, hospital professionals showed fear to report any situation that occurred and only spoke about them when they realized that the recorder was off. Events that occurred in the workplace were easily described by the UBS participants. Currently, the individual who made the mistake is the only one blamed, given the professional feelings of fear, guilt, and suffering.[21]

Therefore, the employee does not notify and report the error to the team because he fears punishment and even job loss. The need for committees responsible for developing adverse event surveillance systems is emphasized as well as the creation of a confidential error reporting system, reinforcing the change in the culture for error detection, which is still seen as a challenge nationwide.

Furthermore, it was noted that nurses did not consider the "almost errors" as a potential medication error and the fact of considering only the most serious or more evident cases for an effective conduct of safety is of concern. According to the professionals' speeches, only medication errors that cause harm to the patient or lead to any visible reaction are considered important, when it is not possible to omit the problem to the patient and family.

The research results in the fourth category "strategies to improve the safe use of medicines" corroborate what was found in the literature, with various contributions and strategies to be implemented in health care in the long and short term, such as: continuing education, effective presence of the nurse supervising the team, improvements in the physical work environment, unit dose system, provision of information to patients about treatments (encouraging more participation), and implementation of automated prescription among others.[18]

Moreover, the need to disseminate a culture of safety in health care services was a consensus among the nurses; and this should be seen as a goal in the institutions. A safe medication system will help professionals in the prevention of errors, with measures that will facilitate the action of medicating and hinder error opportunities.[18]

Agreeing with the analyzed publications, in the event of a medication error, emphasis is given to the punishment and not

to education. Thus, instead of helping to prevent, fewer errors are reported, damaging the knowledge about their risk factors and allowing their repetition.[24] Differentiated strategies to improve safety in institutions of health are needed reinforcing the creation of a less punitive environment and with continuous learning.

Finally, increased integration of the thematic on patient safety in the education of future nursing professionals and training of active professionals are necessary. Considering that patient safety education was necessary, WHO developed in 2011 a guide with proposals for the topic integration in the health education curriculum and how it can be developed by teachers and students. It is aimed at the study of safety issues from the theory to the practice in health care services.[25]

FINAL CONSIDERATIONS

The increasing scientific interest in the topic of patient safety and medication errors is noticeable. The interviews showed that there is a good understanding of the concept and importance of patient safety by nurses and they identify the nurse as the professional in a key role to spread the culture of safety in the workplace. The main factors highlighted for the occurrence of medical errors were: work overload and lack of attention by the professional.

The employee orientation was the conduct most frequently mentioned by participants. However, punishment was still a very present conduct in healthcare, leaving the professional concerned and often leading to cases of underreporting. Employee capacitation and training and hiring more professionals were emphasized as the most present strategies.

It was also noted that most of the health institutions adopt an approach focused on the person, seeking the guilty, and stimulating a punitive condition before the error. It is known that there are problems with this approach because unsafe enactments are separated from the system, leading to the maintenance of existing patterns and repetition of errors.

The interviews collaborated in joining a recurring thought in both literature and practice: the culture of safety must be a priority and widely disseminated in health care services. It should be understood that failures and human errors are expected in any institution and, therefore, it is necessary to develop strategies for their prevention as well as support the training and capacitation of health professionals in the topic.

For future studies, it is concluded that there is a need to verify the perceptions of nursing technicians on the subject since they play a key role in the administration of medications and are integrated with patient care.

One limitation of the study was the small number of interviewed participants because many were not available. Another limitation factor was directly related to the culture of fear

of punishment. This is understandable because the topic still brings a negative connotation for the professional practice and for the institution.

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