Original article

NURSES' DECISION-MAKING REGARDING INCIDENTS RELATED TO PATIENT SAFETY

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ABSTRACT: This study aimed to analyze nurses' decision-making regarding incidents related to patient safety. A documentary study was undertaken in a public hospital in Fortaleza, Ceará, between September and December 2014, analyzing records made in the Ward Notes (*Livros de Ocorrência de Enfermagem*). An association was ascertained between the variables of type of incident, professional category and degree of harm with the ameliorating actions implemented after the occurrence. Univariate and bivariate analysis was undertaken, applying the Pearson chi-squared test. It was observed that, of the 196 records found, only in 34.2% were the decisions made by the nurses described – the majority of these being directed towards the team and the patient. A significant statistical association was found between type of incident and documenting of ameliorating actions (p=0.000), emphasis being placed on those implemented in cases in which there was mild harm (24.4%) rather than serious harm. It is concluded that there is underreporting of incidents and decisions taken for mitigating them, indicating little recognition of either their importance or the harm to patient safety.
DESCRIPTORS: Nursing; Patient safety; Patient harm; Nursing records; Decision Making.

TOMADA DE DECISÃO DE ENFERMEIROS FRENTE A INCIDENTES RELACIONADOS À SEGURANÇA DO PACIENTE

RESUMO: Objetivou-se analisar a tomada de decisão de enfermeiros diante de incidentes relacionados à segurança do paciente. Estudo documental desenvolvido em um hospital público de Fortaleza, Ceará, entre setembro e dezembro de 2014. Foram analisados registros em Livros de Ocorrência de Enfermagem. Verificou-se associação entre as variáveis: tipo de incidente, categoria profissional e grau de dano com as ações de melhoria implementadas após a ocorrência. Realizou-se análise univariada e bivariada, aplicando-se o teste qui-quadrado de Pearson. Constatou-se que, dos 196 registros encontrados, em apenas 34,2% estavam descritas as decisões tomadas pelos enfermeiros, sendo estas direcionadas, em sua maioria, à equipe e ao paciente. Encontrou-se associação estatística significante entre tipo de incidente e registro de ações de melhoria (p=0,000). Destacaram-se as implementadas naqueles com dano leve (24,4%) em detrimento dos graves. Conclui-se que há subnotificação de incidentes e decisões tomadas para mitigá-los, indicando pouco reconhecimento de sua importância e prejuízo à segurança do paciente.
DESCRITORES: Enfermagem; Segurança do paciente; Dano ao paciente; Registros de enfermagem; Tomada de decisões.

RESOLUCIÓNDE ENFERMEROS DELANTE DE INCIDENTES RELACIONADOS A LA SEGURIDAD DEL PACIENTE

RESUMEN: El objetivo del estudio fue analizar las resoluciones de enfermeros delante de incidentes relacionados a la seguridad del paciente. Es un estudio documental desarrollado en un hospital público de Fortaleza, Ceará, entre septiembre y diciembre de 2014. Fueron analizados registros en Libros de Ocurrencia de Enfermería. Se constató asociación entre las variables: tipo de incidente, categoría profesional y grado de daño con las acciones de mejoría implementadas después de la ocurrencia. Fue realizado análisis univariado e bivariado, aplicándose el test chi-cuadrado de Pearson. Se concluyó que, de los 196 registros encontrados, en solamente 34,2% las resoluciones de los enfermeros estaban escritas, siendo estas direccionadas, en su mayoría, al equipo y al paciente. Hubo asociación estadística significante entre tipo de incidente y registro de acciones de mejoría (p=0,000). Se destacaron las implementadas en aquellos con daño leve (24,4%) en detrimento de los graves. Se concluye que hay subnotificación de incidentes y resoluciones para mitigarlos, apuntando poco reconocimiento de su importancia y perjuicio a la seguridad del paciente.
DESCRIPTORES: Enfermería; Seguridad del paciente; Daño al paciente; Registros de enfermería; Resoluciones.

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Received: 01/03/2016
Finalized: 26/09/2016

INTRODUCTION

Patient safety is a topic of worldwide interest and of significant importance for public health[1], considering the innumerable problems revealed regarding the poor quality of the services, inadequate qualification of the workforce, the existence of a punitive culture and the inefficacy of the management processes. These problems can contribute to the occurrence of errors, incidents and adverse events.

In this perspective, the discussion on errors in healthcare has been emphasized as fundamental inhospital routines and in the effective implementation of the culture of safety in this scenario. For this, it is necessary to implement a process of continuous surveillance such that these errors may be investigated, and that efforts may be directed towards the incorporation of evidence-based practices in the clinical practice[1].

With the aim of facilitating the analysis of events related to patient safety in health services, the World Health Organization (WHO) elaborated the International Classification for Patient Safety (ICPS), through the structuring of a conceptual framework made up of 10 classes and 48 key concepts. This conceptual structure was projected as a convergence of international perceptions of the principal issues related to patient safety, and to facilitate the description, comparison, evaluation, monitoring, analysis and interpretation of information in order to improve attendance to the patient[2].

The 10 classes of the ICPS provide a global understanding of the domain of safety, these being: Incident Type, Patient Outcomes, Patient Characteristics, Incident Characteristics, Contributing Factors/Hazards, Organizational Outcomes, Detection, Mitigating Factors, Ameliorating Actions, and Actions Taken to Reduce Risk. It is emphasized that the ameliorating actions are employed in order to reduce the risk, representing the collective learning based on information classified in the 10 classes, and that they are necessary to result in reducing the risk, improving the system and the patient care[2].

In the light of the above, the focus of this study is nurses' decision-making in the light of the events documented in ward notes which are configured as incidents; that is, events or circumstances which could have resulted, or did result, in unnecessary harm to the patient[2].

Emphasis is placed on the role of the nurse in the performance of the managerial skills of leadership and decision-making related to the team and to the patients[3-4]. As a result, a safe health service requires of this professional the ability to identify possible failures in the care processes, the proposing of solutions, and the taking of decisions which aim for safe care.

Decision-making can be defined as the choice between two or more alternatives which make it possible to achieve a specified result, the nurse's leadership being emphasized as inherent to the work, given that it is the nurse who coordinates the nursing team and liaises between the different professionals in the health team[5].

This professional's role is linked to interpersonal and institutional relations, making it possible to perceive the impact of her interventions and the quality of her care, the decision-making process being a crucial factor in the choice of strategies which ensure a progressive increase in patient satisfaction[6-7].

Furthermore, in order to achieve effectiveness in the quality of the care, nurses must value their responsibility regarding annotations and records of the care given, considering that these are essential for efficient communication between team members regarding incidents resulting from the care process[3].

This study, therefore, aimed to analyze the nurses' decision-making regarding incidents related to patient safety.

METHOD

This is a descriptive, documentary study, with a quantitative approach, undertaken in a post-operative inpatient unit in a public teaching hospital in Fortaleza in the Brazilian state of Ceará. This unit did not have a notification system specifically for adverse events at the time when this research

was undertaken, neither did it have standardized instruments for documenting the nurses' decision-making process. Therefore, the decision was made to analyze the ward notes (reports made when shifts handed over), which were considered to be the only instrument for documenting the actions related to the care in that institution.

Data collection took place between September and December 2014. A total of 12 books of ward notes, referent to 2013 (January to December), were analyzed. In all, 196 incidents related to patient safety were found.

For data collection, an instrument of the checklist type was elaborated by the researchers, made up of information related to the incident documented (type; category of the professional(s) involved; decisions made; report of the event and description of the actions taken by the person who reported it). Following that, the incidents were categorized according to the conceptual structure of the ICPS, involving the key concepts and the following classes: types of incidents, patient outcome (degree of harm) and ameliorating actions. These constitute the measures taken (decisions) or circumstances which are altered in order to improve or compensate any harm after the occurrence.

For the entering of the data, the Excel software was used, with double-keying for validation of the database.Initially, univariate analysis was undertaken, in which the relative frequencies were calculated based on the absolutes and the measurements of central tendency. Later, these were subjected to bivariate statistical analysis using the Epi Info 7 software, making use of the Pearson Chi-square test, in which those variables which were associated with the outcome with a p value of ≤ 0.05 were considered statistically significant.

The ethical and legal principles for research involving human beings were respected. This study is part of the project titled "Safety in the management of the nursing care: a focus on the types of error related to health care", financed by the Ceará State Foundation for the Support of Scientific and Technological Development (FUNCAP). It was approved by the Research Ethics Committee of Ceará State University, under Opinion N. 181,754/2012.

RESULTS

The analysis of the ward notesfor 2013, in the surgical inpatient unit investigated, made it possible to identify 196 records of events related to patient safety. In Table 1, one can identify the total of events, by each type, in accordance with the International Classification for Patient Safety. It should be emphasized that 18 records involved more than one type, as they had different characteristics and related factors.

It is possible to see a predominance of incidents of the following types: clinical process/procedures, resources/organizational management, behavior and documentation. In the first, emphasis is placed on the direct care to the patient, when this is inadequate or omitted; the second includes those which encompass management and cover the inadequate estimation of required staffing levels, absenteeism, work overload and the lack of beds in the institution. Regarding behavior, emphasis is placed on the events provoked by inappropriate, hostile, and non-cooperative attitudes, as well as those related to substance use by professionals, patients, or patients' companions. Finally, 'documentation' includes failures in the requests for, or results of, tests which were not available or which had incomplete information, as well as prescriptions and medical records for wrong patients or which were illegible or absent.

Analyzing the characteristics of the events documented in detail, it was observed that in 34.2% (n=67), there were records of decisions made by nurses for resolving or mitigating the harm. These decisions were treated as ameliorating actions, as can be seen in Table 2.

It may be observed that 61.2% (n=41) of the actions were directed towards the team, including communication between the team members regarding problems related to prescribing andcomplicationsin the patients' clinical situation, among other decisions which are characteristic of ameliorating actions. Following that, emphasis was placed on amelioratingactions geared towards the patient, such as re-arranging of tests/procedures/operations, as well as the implementation of direct care (e.g. the administration of medications), to treat clinical complications.

Table 1 – Distribution of the events which took place and were documented in 2013, by type of incident, in accordance with the ICPS. Fortaleza, CE, Brazil, 2014

Type of incident	f	%
Clinical process/Procedures	71	36.2
Resources/organizational management	44	22.4
Behavior	37	18.8
Documentation	31	15.8
Medical device/equipment	23	11.7
Nutrition	19	9.6
Clinical administration	12	6.1
Oxygen/Gas/vapour	8	4
Infrastructure/building/fixtures	7	3.5
Blood/blood products	6	3
Medication/endovenous fluids	3	1.5
Healthcare-associated infection	2	1
Patient accidents	2	1
Total	**265***	**-**

f= frequency.
*There could be more than one type of incident in each event documented.

Table 2 – Distribution of the ameliorating actions implemented by the nurses after the occurrence of the incident, and documented in the ward notesin 2013. Fortaleza, CE, Brazil, 2014

Ameliorating actions directed towards the:	f	%
Team	41	61.2
Patient	22	32.8
Patients' companions	2	3
Organization	2	3
Total	**67**	**100**

f = frequency.

Table 3 presents the correlation between the documenting of amelioratingactions and the type of incident.

A statistically significant association was evidenced between records of ameliorating actions implemented and type of incident. Hence, it was observed that the majority of ameliorating actions documented were related to the incidents of the type: Clinical Process and Documentation. In addition to this, the absence of amelioratingactions stood outin the incidents related to the management of resources/organization, to behavior and to failures in medical equipment.

The category of professionals involved in the incidentsdocumented was also analyzed. Table 4 presents the association between professional category involved in the incident and the existence of amelioratingactions recorded.

It was observed that there was greaterdocumenting of amelioratingactions in the incidents which were involved with the medical team and other professionals, such as nutritionists, pharmacists, laboratory technicians, radiography technicians and workers from the general services. As a result, one can infer that the harm involved in such incidents may have been attenuated by the nurses' actions. On the other hand, in the events related to the participation of the nursing team, few records were found regarding the ameliorating actions implemented by nurses.

It is emphasized that, when the incidents involved institutional failures or failures of the system, in the majority of cases the documenting of amelioratingactions was absent –75.5% (n= 37).

Table 3 – Bivariate association between the records of amelioratingactions and the type of incident. Fortaleza, CE, Brazil, 2014

	Records of ameliorating actions						p
	Yes		No		Total		
Type of incident	**f**	**%**	**f**	**%**	**f**	**%**	
Clinical process/Procedure	35	49.3	36	50.7	71	100	**0.000**
Resources/organizational management	8	18.2	36	81.8	44	100	
Behavior	8	21.6	29	78.4	37	100	
Documentation	16	51.6	15	48.4	31	100	
Medical device/equipment	2	8.7	21	91.3	23	100	
Nutrition	8	42.1	11	57.9	19	100	
Clinical administration	4	33.3	8	66.7	12	100	
Oxygen/Gas/Vapour	1	12.5	7	87.5	8	100	
Infrastructure/building/fixtures	3	42.9	4	57.1	7	100	
Blood/blood products	4	66.7	2	33.3	6	100	
Medications/Endovenous fluids	1	33.3	2	66.7	3	100	
Healthcare associated infection	1	50	1	50	2	100	
Patient accidents	1	50	1	50	2	100	
Total	**92**	**-**	**173**	**-**	**265***	**-**	

f = frequency.
*There could be more than one type of incident in each event documented.

Table 4 – Bivariate association between the existence of ameliorating actions documented and the professional category involved in the incidents. Fortaleza, CE, Brazil, 2014

	Ameliorating actions documented						p
	Yes		No		Total		
Professional category	**f**	**%**	**f**	**%**	**f**	**%**	
Nurses	10	32.3	21	67.7	31	100	**0.289**
Physician	20	41.7	28	58.3	48	100	
Other[a]	29	38.2	47	61.8	76	100	
None[b]	12	24.5	37	75.5	49	100	
Total	**71**	**-**	**133**	**-**	**204[c]**	**-**	

f = frequency.
[a]Nutrition, Pharmacy, Laboratory, Radiology and/or General Services.
[b]In the case of incidents related to the system.
[c]There could be more than one category involved in a single incident.

Table 5 presents the association between the amelioratingactions documented and the degree of harm involved in each incident.

It was observed that the ameliorating actions directed towards the incidents with mild harm stood out, in spite of not configuring a statistically significant association. It is worth emphasizing that records of ameliorating actions were not found in any of the events which led to death.

Table 5 – Bivariate association between the ameliorating actions implemented and the degree of harm in the incidents. Fortaleza, CE, Brazil, 2014

Ameliorating actions	Yes		No		Total		p
Degree of harm	f	%	f	%	f	%	
None	12	27.9	31	72.1	43	100	**0.373**
Mild	48	38.4	77	61.6	125	100	
Moderate	5	25	15	70	20	100	
Serious	2	40	3	60	5	100	
Death	-	-	3	100	3	100	
Total	**67**	**-**	**129**	**-**	**196**	**-**	

f = frequency.

DISCUSSION

Analyzing the ward notes, attention was initially called to the low occurrence of records regarding incidents involving patient care. On the other hand, studies on the occurrence of adverse events in Brazil have observed that, as well as being more frequent, such events are – in the majority – avoidable, causing important harm for patients, teams and organizations[8-10].

In this study, the contribution of events related to care failures is clear, this being explained by the higher frequency of incidents involving clinical processes/procedures. Moreover, there could also be an influence of the management of organizational resources in a large proportion of the events (Table 1).

In other studies, there was equal predominance of incidents and adverse events related to the clinical process, with emphasis being placed on surgical and anesthetic procedures, dermatological problems, and errors in treatment and diagnosis; these occurrences being related to the workload and the seriousness of the patient's condition[8-9].

In the analysis of Table 2, it is concerning to note that, for more than half of the incidentsdocumented, no amelioratingactions were documented on the part of the nurses in order to minimize the harm to the patients. Various authors corroborate this finding, stating that few professionals react proactively to adverse events, limiting themselves to reporting the incident to the nursing manager or to the doctor on duty, not providing their view on the handling of the incident[11].

The absence of the professional's perception in relation to the harm may be explained by the mechanization of the care. The nurses, generally speaking, demonstrate a lack of leadership and of proactivityin the healthcare, due to their being conditioned to undertake the clinical practice in an automatized way, using their critical judgment regarding the occurrences which affect the patients' integrity[12].

This indicates the need for encouraging these professionals' decision-making geared towards the proposing and implementation of ameliorating actions, with the aim of reducing or attenuating the effects of the harm generated by the incidents. These actions need – as well as to be put into effect – to be recorded in the institutional documents, in order to promote the analysis of the incidents and the reduction of harm resulting from them.

In considering the current context in relation to the adverse events and their consequences, it is possible to state that it is essential for there to be leadership which encourages the adoption of measures which minimize the occurrence of these. And, for this to occur, the leaders must ensure the construction of a culture of safety[13].

The fact that there was a greater number of ameliorating actions geared towards the team (Table 2) indicates the nurses' concern with establishing communication between the members of the health team as a barrier to the occurrence of adverse events. Effective communication within the

multidisciplinary team has significant repercussions on the quality of the healthcare and on patient safety[14-15].

Corroborating this finding, a study undertaken in the Brazilian State of Goiás evidenced that the actions adopted for preventing adverse events were directed towards the institution (56.6%) and the professionals (43.3%), through the adaptation of human and material resources, ameliorating of the communication and teamwork, reduction of work overload, implementation of protocols, guidance for professionals and patients, and raising awareness of and supervising the health professionals' health conditions[16].

The nurses' decision-making should, therefore, lead to actions and stances which compensate for the harm to the patient and avoid the risks inherent to the process of caring, the measures directed towards the organizational ambit being necessary for increasing the resilience of the system in which the patient is inserted.

The nurses' greater concern with documenting incidents related to the clinical process/procedures (Table 3) may be explained by the fact that the other categories of incidents, in the majority, are related to the structure and the organizational processes. Hence, decisions which affect these aspects are more complex and difficult to be made by the nurses, as they depend on the involvement of the service's management, as well as investment in financial and human resources, time and ongoing training for the workers.

Furthermore, the study evidenced the underreporting of nursing records regarding incidents related to patient safety, which were limited to clarifying their basic characteristics, the time at which they occurred and the actors involved, as well as the decisions taken in the short term (ameliorating actions) for minimizing the harm which they caused.

One contemporaneous study has discussed the nurses' concern in relation to adverse events resulting from procedures in the work environment, with emphasis placed on the concern about undertaking evidence-based practices in their work area[12]. In the care process, the nurse must accept commitment and responsibility to undertake her stageswith safety, advising the team and improving and updating theirknowledge[7].

The insufficiency of records of ameliorating actions for avoiding the incidents provoked by failures in the management of resources, medical equipment or the inappropriate character of the professionals' behavior is worrying, as the duties of the nurse are not restricted to care actions, but include the training and empowering of nursing professionals, the management of products and materials and organizational articulation[17]. In addition to this, the nurse's decision-making can determine behavior and stances, the establishing of relationships of care, and the interactions with the health team[18].

Analyzing Table 4, one can ascertain that it was principally professionals from other categories who were involved in the incidents documented by the nurses – such as Pharmacy, Nutrition, Laboratory, Radiology and General Services. This finding does not entail asserting that these are the areas most involved in the incidents, as it is clear that there is underreporting of circumstances involving the lack of patients' safety in general. Here, it is important to understand the fact that nurses prioritize the documenting of occurrences concerning other professional categories rather than those in which the nursing team was involved.

Regarding incidents resulting from the nursing care, studies have indicated that the prevalent action is for the nurses not to registertheir own errors, either from not recognizing that they are making errors or from fear of the punitive culture and retaliations[19-20]. On the other hand, reporting the error caused by a professional from another category is a challenging practice, given that the professional not directly involved in the occurrence of the event does not hold detailed information for describing the incident, as well as there existing a natural reluctance to cause conflicts in the interpersonal relationships among the members of the team[21].

Finally, analysis of Table 5 made it possible to identify that, regardless of the degree of the harm involved in the incident, no ameliorating actions were implemented. It was also possible to evidence that more decisions were documented in those cases of incidents in which the harm was mild.

On the other hand, studies have indicated that, regarding the clinical complications, the nurse and her team as providers of primary care must standardize the actions and routines in improving the quality of the service. However, it is evident that they show effective conduct related to safety only in the most serious events, as it is not possible to hidethese cases from the patients and their families[3,22].

CONCLUSIONS

The study evidenced underreporting of decisions or ameliorating actions implemented by nurses regarding incidents which compromise patient safety. Throughout the one year period, in less than half 34.2% (n=67) of the total of 196 incidents was there documenting of the ameliorating actions instituted by the nurses.

The higher frequency of decisions taken/registered in those cases of events involving the clinical process and documentation was clear. Another important data relates to the fact that the nurses documentedameliorating actions in those cases involving professionals from other categories. Moreover, more records were found of decision-making by the nurses in incidents with mild harm 38.4% (n=48), which differs from other studies on this topic.

The lack of records of actions taken by the nurses in relation to incidents experienced in their work process may suggest the absence of critical reasoning and difficulty in revealing their perception for later discussion and ameliorating of the nursing practice. In contrast, one must emphasize that failures in the nurse's decision-making process do not relate only to this professional's stances and skills, as shortcomings in the organizational processes influence the way of caring and acting in critical situations.

It is concluded that investment is necessary on the part of managers and nurses in instituting the culture of safety in clinical practice, such that nurses may be empowered to take decisions geared towards safety, both for patients and for the interdisciplinary team.

As a limitation of this study, the fact is emphasized that it was not possible to make conclusions about the inexistence of the nurses' decision-making regarding the incidents, given that this is a study which used the ward notesas its source of data.

It is recommended that, in future studies, the ameliorating actions implemented by the nurses regarding occurrences involving patient safety should be elucidated, which could be done through observational or evaluation studies. It is also suggested that hospitals should include, in their continuous education programs, training on the culture of safety and concepts related to it, including the types of incidents, the degree of harm involved, and the ameliorating actions to be implemented, coupled with the application of institutional protocols for patient safety.

ACKNOWLEDGMENTS

To the members of the Study Group on Management, Work Processes, and Patient Safety, of Ceará State University.

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