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ORIGINAL ARTICLE

PROFILE OF PATIENTS AND INCIDENTS IN A SURGICAL CLINIC UNIT

PERFIL DOS PACIENTES E DOS INCIDENTES EM UNIDADE DE CLÍNICA CIRÚRGICA

PERFIL DE LOS PACIENTES Y DE LOS INCIDENTES EN UNIDAD DE CLÍNICA QUIRÚRGICA

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ABSTRACT

Objective*:** to characterize the profile of patients and incidents in a surgical clinic unit. ***Method*:** a descriptive, cross-sectional study in which data were collected from printed medical records using the World Health Organization's international classification instrument for patient safety, and descriptive statistics were used for data analysis. ***Results*:** thirty-four patients participated in the study, mostly men (64.7%), coming from their residence (44.1%), with a median age of 55.5 years and a median length of stay in the surgical clinic of 8.5 days. During the study period, there were no deaths in the unit. A total of 2,396 incidents were recorded with the patients studied, related to intravenous medication/ fluids, documentation, procedures/clinical process, clinical administration and nutrition. ***Conclusion: male patients predominated and the incidents related to intravenous medication/fluids stood out. We reiterate the importance of continuing education for professionals to avoid underreporting and to reduce incidents. ***Descriptors*:** Patient Safety; Risk management; Perioperative Nursing; Nursing; University Hospitals; Nursing professionals.

RESUMO

Objetivo*:** caracterizar o perfil dos pacientes e dos incidentes em unidade de clínica cirúrgica. ***Método*:** estudo quantitativo, transversal descritivo, em que os dados foram coletados em prontuários impressos por meio do instrumento de classificação internacional para a segurança do paciente da Organização Mundial da Saúde e, para a análise dos dados, empregou-se estatística descritiva. ***Resultados*:** participaram do estudo 34 pacientes, a maioria homens (64,7%), provenientes do domicílio (44,1%), com mediana de idade de 55,5 anos e mediana de tempo de internação na clínica cirúrgica de 8,5 dias. No período de estudo, não houve óbitos na unidade. Foram registrados 2.396 incidentes com os pacientes estudados, relacionados à medicação/fluídos endovenosos, documentação, procedimentos/processo clínico, administração clínica e nutrição. ***Conclusão: houve predominância de pacientes do sexo masculino e, quanto aos incidentes, sobressaíram-se os relacionados à medicação/fluídos endovenosos. Reitera-se a importância da educação permanente com os profissionais para que seja evitada a subnotificação e para reduzir os incidentes. ***Descritores*:** Segurança do Paciente; Gestão de Riscos; Enfermagem Perioperatória; Enfermagem; Hospitais Universitários; Profissionais de Enfermagem.

RESUMEN

Objetivo*:** caracterizar el perfil de los pacientes y de los incidentes en una unidad de clínica quirúrgica. ***Método*:** estudio cuantitativo, transversal descriptivo, en que los datos fueron recogidos en prontuarios impresos por medio del instrumento de clasificación internacional para la seguridad del paciente de la Organización Mundial de la Salud y, para el análisis de los datos, se empleó la estadística descriptiva. ***Resultados*:** participaron del estudio 34 pacientes, la mayoría hombres (64,7%), provenientes del domicilio (44,1%), con mediana de edad de 55,5 años y mediana de tiempo de internación en la clínica quirúrgica de 8,5 días. En el período de estudio, no hubieron óbitos en la unidad. Fueron registrados 2.396 incidentes con los pacientes estudiados, relacionados a la medicación/fluidos endovenosos, documentación, procedimientos/proceso clínico, administración clínica y nutrición. ***Conclusión: hubo predominancia de pacientes del sexo masculino y cuanto a los incidentes, se sobresalieron los relacionados a la medicación/fluidos endovenosos. Se reitera la importancia de la educación permanente con los profesionales para que sea evitada la subnotificación y para reducir los incidentes. ***Descriptores*:** Seguridad del Paciente; Gestión de Riesgos; Enfermería Perioperatoria; Enfermería; Hospitales Universitarios; Enfermeras Parcticantes.

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INTRODUCTION

Alongside advances in health care, patient safety has become a major concern of health agencies and institutions worldwide, beginning in the 20th century after the publication of the report of the United States Institute of Medicine that demonstrated alarming data regarding health care-related errors.[1] With the aim of improving and strengthening its assistance, Nursing created the Brazilian Nursing Network of Patient Safety (REBRAENSP), in 2008, aiming at the articulation and cooperation of health institutions in the search for strategies to improve patient safety.[2]

The World Health Organization (WHO) defines an incident as an avoidable event or condition caused by inadequate care, and not associated with the underlying disease. Incidents (I) can be classified as harmless incident (when it affects the patient, but do not harm his integrity), or adverse event (AE), when resulting in harm to the patient.[3]

Health incidents are used as indicators to assess the quality of care, since if they are not evaluated and studied, they may compromise patient safety.[4] The Pan American Health Organization (PAHO) revealed in 2009 that 234 million surgeries are preformed per year in the world. It is estimated that two million deaths occur, as well as 7 million incidents with or without damage, of which 50% are avoidable; still, 3 to 16% of the high complexity surgeries performed have complications, and one death happens in every 300 hospitalized patients.[5]

In 2010, the analysis of medical records of patients hospitalized in the Surgical Clinic of a Hospital of the Sentinel Hospital Network of the National Health Surveillance Agency showed that 5672 incidents had been registered in 750 hospitalizations, classified according to the consequence for the patient. From these, 82% were harmless incidents, leading to the conclusion that 615 hospitalizations had been exposed to at least one incident; 218 (18.7%) adverse events occurred in the period, and 140 hospitalizations had been exposed to at least one AE.[3] In daily practice, the surgical clinic is a unit that causes anxiety, stress and fear for patients, for they are exposed to procedures that are often unknown by them.[6]

When considering the magnitude of the problems related to occurrences of adverse events and incidents during provision of health care, we believe that studies that may contribute to patient safety, with respect to incidents in surgical units, are important. Lack of available data makes it impossible to define with accuracy which factors contribute to the occurrence of these events. Thus, this study is justified by the possibility of contributing to patient safety, with the production of knowledge about this subject. In this sense, we have as a guiding question: What is the profile of patients and what are the incidents that occur during provision of care in a surgical unit of a University Hospital?

OBJECTIVE

- To characterize the profile of patients and incidents in a surgical clinic.

MÉTHOD

This is a descriptive, cross-sectional study carried out at the Surgical Unit of a large University Hospital of Rio Grande do Sul. This unit provides health care to patients with surgical conditions of different specialties.

The inclusion criteria used to select the participants were: adult patients aged 18 years or more and hospitalized at the unit from May 21 to June 20, 2015. Exclusion criteria were limited to medical records not available at the time of collection.

A convenience sample was used in the study, considering the total number of hospitalized patients in 2014 (N = 1500), with a sampling error of 0.05, an estimated percentage of 0.5 and a significance level of 0.05, resulting in a minimum sample of 307 patients. The stratification of this sample per month would require the inclusion of 25.58 patients. In this study, the medical records of 34 patients were analyzed.

Data were collected from the printed medical records available at the Medical and Statistical Archive Service (MSAS) during the months of December 2015 and March and April 2016. The information in the medical records was extracted since the hospitalization day until discharge of the unit. Data were collected by volunteers who were trained for analysis of medical records.

For the categorization of incidents, the international classification of the World Health Organization (WHO) for patient safety was used, which was translated into Brazilian Portuguese in 2016[7], and addresses the types of incidents, processes and problems involved. The categories used in this study were: clinical administration; clinical procedure/process; documentation; hospital infection; intravenous medications/ fluids (IV); blood products; nutrition; gases/oxygen and medical equipment. A consensus was reached for categorization of incidents by the

collectors, also based on the WHO's document cited above.

The information collected for the study was entered by two independent typists into specific *Microsoft Office Excel 10* spreadsheets, with subsequent verification of inconsistencies.

Descriptive statistics were used for data analysis, checking the distribution of relative and absolute frequencies, and measures of position and dispersion. The *Kolmogorov-Smirnov* test was used to verify the normality of the data.

The research complied with the guidelines for research legislation involving human beings, nº 466/12, and was authorized by the institution that was the scenario of this study, and was approved by the Research Ethics Committee of the Federal University of Santa Maria, under Opinion number 1,035,521 and CAAE: 43176215.3.0000.5346. Before data collection from the medical records, the Confidentiality Term, which ensures the commitment to maintain the data confidentiality, was signed by the coordinator responsible for the research.

RESULTS

Thirty-four patients composed the sample. From these, 64.7% (n = 22) were men, 44.1% (n = 15) had come from their residence (elective surgeries), 41.2% (n = 14) had come from the emergency room, and 14.7% (n = 5) from the surgical center. All the patients that composed the sample were discharged.

The median age of the patients was 55.5 years, with a minimum of 20.0 years and a maximum of 95.0. The median length of stay at the Surgical Clinic was eight and a half days, with three days corresponding to the minimum and 30 days corresponding to the maximum.

From a total of 2,396 occurrences, 1,365 (57%) occurred in the morning shift; 416 (17.4%) in the afternoon; and 615 (25.6%) in the night.

As to the reason for hospitalization, 41.2% (n = 14) had been affected by neoplasias, 35.3% (n = 12) had fractures/arthrosis, 5.9% (n = 2) for had been injured by melee weapons and fire weapons, and 17.6% (n = 6) had general clinical pathologies (cholecystitis and surgical eviscerations).

Regarding the occurrences, the 34 patients had incidents during the period of hospitalization in the surgical clinic. The total number of occurrences was 2,396, and the median number of occurrences was 61.0 per patient, with a minimum of nine and a maximum of 220.0 occurrences. From 2,396 (100%) occurrences, 2,364 (98.7%) correspond to incidents without harm, and 27 (1.3%) to incidents with harm (AE). Based on this, there were 0.8 incidents per patient, minimum of zero and maximum of 16.

The types of occurrences are presented in Table I, and the most frequent were related to intravenous medication/fluids, represented by 63.6% (n = 1524).

Table 1. Distribution of incident types in a Surgical Clinic Unit in 2015. Santa Maria (RS), Brazil, 2017.

Variables	n	%
Intravenous medications/fluids	1,524	63.6
Documentation	824	34.4
Clinical procedure/process	32	1.3
Clinical administration	15	0.6
Nutrition	1	0.1
Total	2,396	100.0

Among the 1,524 occurrences of incidents with intravenous medication/fluids, 1,518 corresponded to medical prescriptions, four to the administration, and two to the monitoring. Three occurrences corresponded to wrong medication outcome, one to wrong frequency, one to wrong route, and one to adverse drug reaction. Moreover, 1,518 occurrences corresponded to omitted doses, representing lack of checking of medications in the medical records.

Regarding the documentation, 823 out of 824 occurrences correspond to the medical records/registry sheets and one refers to a physician/evaluation/consultation. From these, seven cases had missing/unavailable documentation as outcome, 9 had wrong patient documentation/wrong documentation, 114 had incomplete/illegible/ambiguous information, and 694 had other causes, which refer to occurrences of documentation by blank lines in the patient's medical record and by medical and nursing evolutions without signature and stamp.

Among the occurrences related to the clinical procedure/process, three out of the

32 occurrences were related to the diagnosis/evaluation, six were related to procedures, 14 to general care/assistance, and 9 to isolation. From these, the outcome of seven occurrences was due to non-realization when indicated, and 25 for being incomplete/inadequate.

For incidents of clinical administration, from the 15 occurrences, 13 represented the referral/consultation process; one referred to admission, and one to hospital discharge. From these, 13 problems were related to non-realization when indicated, and two corresponded to unavailable outcome.

The variable nutrition had one adverse event, corresponding to administration, with an adverse reaction to nutrition.

Occurrences of hospital infection, blood products, gases/oxygen and medical equipment, which were also analyzed in the study, were not identified in this sample.

DISCUSSION

Regarding the patients' biosocial characteristics, we observed that the majority of the sample studied was male (64.7%), predominantly coming from their residence (44.1%), and with a median age of 55.5 years. Although the number of occurrences with the sample of this study was expressive, all survived the period hospitalized in the surgical clinic (100%). The profile of the patients investigated reflects the observed in the literature, close to what has been shown by the Ministry of Health, that morbidity and mortality affects mainly men, and that the factors are related to the external causes, reflecting a public health problem.[8]

In line with this, a study that sought to evaluate the epidemiological profile of patients with fractures in the lower limbs hospitalized in a surgical clinic unit indicated the predominance of male patients. In contrast, in relation to age, this study had young adults, in which the majority of the studied population was in age groups up to 40 years, which is contrary to the profile of the age group of the patients of the present study.[9]

Regarding the median length of hospitalization at the Surgical Clinic, this was eight and a half days, which is longer than in other Brazilian studies that reported average times of hospitalization ranging from three days and a half to four days.[10-11] What can be considered is that patients hospitalized in Surgical Clinics are treated mostly for neoplasias, generally in an advanced state, and this requires time for recovery and more prolonged rehabilitation.

With regard to the shift when the AE/I occurred, the morning shift (57%) predominated in this study, corresponding to 1,365 occurrences. This parameter is in contrast with findings in the literature, where occurrences in the night shift prvail.[3,6,12] This indicates that, in the hospital under studied, largest number procedures to be performed were concentrated in the morning shift. In the meantime, it is appropriate to reflect whether this factor may or may not be associated with the occurrence of incidents with or without harm, and/or if the team of this shift ends up suffering a work overload.

Regarding the reasons for hospitalization of patients in this study, 41.2% were affected by neoplasias and 35.3% by fractures. This parameter is in agreement with literature findings, since the median age of the patients in the present study was close to the third age, thus indicating the predominance of elderly patients in admissions to surgical units. The elderly, in turn, are more vulnerable and susceptible to neoplasias and fractures due to biological, physical, intrinsic and extrinsic factors.[11,13]

The prevalence of AE found in the sample of this study is lower than that of other studies developed in surgical clinics, which have reported prevalence rates of AE between 18.7% and 19.1%.[3,6] The findings of this study are in line with the literature that investigates the prevalence of incidents without harm, and adverse events in a surgical unit, the incidence of incidents without harm to patient was 82%.[3]

In this context, a study[6] found the occurrence of 264 AE registered in the nursing books of a surgical clinic. The information indicated a prevalence of AE related with unscheduled withdrawal of probes, drains, and catheters; falls; allergic processes; evasion; pressure injury; medication errors; medical procedures; blood products and burns.

The errors with intravenous medications and fluids were highlighted in the sample of this study, reaching a percentage of 63.6%. This is in line with the literature. These errors are common in health care. The study found that medication errors were the most frequent (61.5%), followed by adverse drug reactions (21.2%).[14]

Still, dose omission and lack of monitoring were the main problems encountered. This result indicates a nonconformity with regard to nursing records, which consequently reveals that, officially, the team did not

provide care. Compared with other studies, the more frequent category of errors related to intravenous medication/ fluids was dose omission. However, in the hospital environment, these AE/I are attributed to the nursing team, for the administration of the medications is one of their duties.[15-16]

The second category with the highest percentage of AE/I was patient documentation (34.40%). In this case, the problems that predominated involved erasures in the documents; insufficient, erroneous or missing information; missing of documents; among others. All of these factors made it difficult to analyze the patients' medical records during the data collection period. It should be pointed out that all these events involving registrations contradict what is established by the Code of Ethics for Nursing Professionals, where it is clear from Resolution 311/2007 that it is the duty of these professionals to record all the inherent and indispensable information in a clear, objective and complete way.[17]

Corroborating this consideration, a study that aimed to evaluate the records made by the nursing team indicated the presence of blank spaces on the record sheets, as well as illegible writing, erasures, nonstandard abbreviations, records without stamp and/or signature of the professionals.[18] All these findings are in line with the documentation errors made by the nursing team in the sample studied. The lack of clarity of medical prescriptions, despite being recorded in a digital form in the reality of this study, many had erasures and handwritten observations, which may hinder the dispensation, preparation and administration of medications.

The third category with the highest percentage was AE/I with clinical procedure/process (1.3%). These were linked to general assistance and care, loss of venous and central accesses, loss of nasogastric probes, removal of abductor/plaster cast splint without a prescription, and a continuous provision of solution without a medical prescription.

The outcomes of the occurrences with clinical procedure/ process were due to non-realization when indicated or because they were incompletely/inadequately realized. In this group, the processes and activities can be considered preventable and therefore avoidable. For example, the use of protocols for the procedures, as well as checking each stage of the realization of these procedures would help to prevent errors. In addition, a study found a greater number of avoidable AE when compared to this study in a sample of 1,103 patients in whom 56 had had avoidable AE.[12]

Other categories identified in relation to AE/I in this study were clinical administration (0.6%) and nutrition (0.1%). With the exception of AE related to nutrition, events with clinical administration are also preventable. In this study, the findings in this category included lack of referral of patients for consultations when indicated, lack of admission sheet in the surgical clinic, and lack of sheet of hospital discharge.

As can be seen, AE/I related to clinical administration may be directly related to communication failures, which in turn is a basic tool for nursing professionals. Some studies point to communication as being a significant stressor and responsible for the occurrence of AE/I.[19-20]

Nutrition-related events in the sample of this study refer to adverse reactions to parenteral diet, which, although inferior in terms of numbers when compared to other studies that also sought to identify AE/I with nutrition, they had their outcomes for the same reason.[19]

Considering all the advances that patient safety has had in Brazil and worldwide, we can see the increasing number of studies being carried out addressing this issue. This evolution, which began with the understanding of some terms such as iatrogenesis, for example, soon afterwards became contextualized and instigated the study of adverse events and incidents in health care. In this approach, factors that could interfere with patient safety, among them, stress, human factors and nursing work began to be investigated in the nursing research field.

It should also be noted that several of the errors related to the documentation of patients found in the medical records of the present study are of medical responsibility. Therefore, nursing should not be the only one held responsible. However, what is often perceived is that, because nursing professionals are at the forefront of caring for patients, they end up being "blamed" for the vast majority of these events.

In this sense, the identification of the contributing factors for the occurrence of AE/I is considered of paramount importance. It is necessary to implement care plans aiming at a better quality of care and, consequently, improved patient safety.

CONCLUSION

Thirty-four patients participated in this study whose profile was predominantly male, coming from their residence, with a median age of 55.5 years and a median length of stay in the surgical clinic of eight and a half days, and hospitalized due to neoplasia. There was a total of 2,396 AE/I, with 2,364 incidents and 27 adverse events. As for the type of occurrences, those related to intravenous medication/fluids predominated. The occurrences happened mostly in the morning shift, corresponding to 57%.

In view of these findings, to know the characteristics of the incidents, the profile of hospitalized patients, as well as the work processes in the unit studied, allow to plan intervention measures, namely: use of protocols and checklists in order to standardize the work process and reduce interruptions; implantation digital medical records and drug prescriptions; guidance, awareness and promotion of patient safety culture as a space for continuing education on the types/classifications of adverse events and incidents in order to avoid underreporting; incentive to discussions and reflections among the multiprofessional team on the working conditions.

Some limitations may have made it difficult to identify the incidents in this study. They include underreporting and poor quality and clarity of the information in the patients' medical records. Furthermore, the unavailability of medical records made it difficult to collect and analyze data in the study. It is also worth mentioning that in the Brazilian literature few studies are aimed at analyzing incidents in surgical clinics, what represents a limiting factor for data discussion.

Finally, it is considered that the investment in training of future health professionals on patient safety is an ally in the prevention of incidents and should aim at preparing them to confront this reality. Well-trained professionals can contribute in an equitable, integral and effective way to patient safety by improving and qualifying health care.

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