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Adverse Events on Hospitalized Patients: A Barely Known Reality

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Abstract

Introduction: Currently, the patient's safety is a fundamental component of the health care quality, more specifically of the nursing care quality and it constituted a preoccupation to the hospital managers by the influence it has on the cost of the care. The incurrence of Adverse Events (AE) associated to the nursing care is underestimated in Portugal, not allowing a real knowledge about this issue.

Material and Methods: A descriptive study, cross-sectional and quantitative approach with a sample of 628 nurses, who work in 43 internment services at 8 Portuguese hospitals.

Results: The psychometric properties evaluation of the Subscale of Assessing Risk and Occurrence of Adverse Events, demonstrated its suitability to evaluate the phenomenon in study. The Risk/Occurrence of Medication Errors proved to be the typology of AE that occurs less frequently or which is less likely to occur (AE_7 M=2, 20). For its turn, the Risk/Occurrence of HCAI (Health Care Associated Infections) is the type of AE that showed a higher average value (AE_6 M=4, 21). The Risk of Falls and Pressure Ulcers is moderate (AE_8 M=3.07), but the Occurrence of Falls and Pressure Ulcers is low (AE_9 M= 2.33).

Conclusion: The characterization of AE associated to the nursing care in terms of typology and occurrence frequency is very relevant, allowing us to analyze its causes, to develop and implement corrective and preventive measures to minimize the damage and improve the patients' safety.

Introduction

The patient safety must be a preoccupation to nurses and be always present in their interventions. In truth, if the provided care does not guarantee the patient's safety, it is not a quality care.

The patient safety is so important that the World Health Organization (WHO), in 2002, for the Health Assembly Resolution 55.18 [1], about: "Quality of care: patient safety", acknowledged the necessity of enunciate it as fundamental principle to observe in all health systems. To this organization, all patients have the right to be treated with the safest technologies existing in the health establishments, which means being protected against unnecessary infections or other dangers associated with the health care. Wherefore, the health care professionals and institutions are obliged to provide safe care to avoid the patients to be victims of any unintentional infirmity.

The practice concerning the patients safety, refers itself to the applied measures to process and/or structures, which reduce the probably of occurrence of Adverse Events [2], understanding that these are damages or injuries caused by health professionals in the treatment of a disease and which have no relation with that same disease [3]. There are known several risk factors which increase the occurrence of these events, for example: the fatigue of health professionals, due to work overload and lack of appropriation [4,5], bad practices, lack of hygiene and safety. The risk is then a concept which is correlated to all nursing activities, and therefore is implicit and associated to the providing of health care services. In this context, the risk comes out as the probability of the occurrence of an event, and its consequences, which not being able to be totally disposed off, should result in the adoption of a risk management program. At the majority of the Portuguese hospitals these programs are implemented, being one of its attributes the administration of the Adverse Events (AE). Nevertheless, the reporting culture of the AE is not yet consolidated, to the extent that it is not assumed by all as a necessity to report and learn with the committed errors, in an environment liberated from guilt and with an attitude of anticipation and pro-activity, related to the study/analysis of the error. This fact justifies the disparity about the number and type of reported and administrated events by hospital/services, obstructing the real knowledge of this problem's dimension.

In this context, and recognizing that currently safety is a fundamental component of the health quality, more specifically of the nursing care quality, we have developed a study generally aimed to evaluate the risk and the occurrence of adverse events to which the patients are subject with the provided nursing care. Our intent, with this article, is to divulge and reflect about this theme.

Material and Methods

The study which we present is descriptive, cross-sectional and of quantities approach. The population in study was constituted by nurses who were exercising functions at the hospitalization services at Portuguese hospitals. The criteria for the selection of the sample were the following principles: integrate hospitalization services, integrate internment services of patients with different clinical profile (Medicine, Surgery, Obstetrics and Pediatrics); easy access to database.

We obtained a total of 628 participants in 43 internment services at 8 hospitals. We intended to acknowledge the nurses perception about the risk and occurrence of adverse events resulting from their interventions, so we selected as measuring instrument the Subscale of Assessing Risk and Occurrence of Adverse Events, (in patients) by Castilho and Parreira [6]. It is composed by 13 items, grouped in 6 factors: Aggravation of the Patient Condition (APC)-it contains items that evaluate the risk/occurrence of the worsening of the patient's situation by failures in monitoring, on clinical judgment and/or in the exercise of advocacy; Risk and Occurrence of Medication Errors (RO-ME) - the items evaluate the risk and the frequency of occurrence of errors in the preparation, administration or monitoring of the medication; Risk and Occurrence of HCAI (RO-HCAI)-the items allow us to know the risk and the frequency of the occurrence of healthcare-associated infections; Risk of Falls and Pressure Ulcers (RQUP)-includes items which clarify the risk of falls and pressure ulcers; Occurrence of Falls and Pressure Ulcers (OQUP)-adds items that evaluate the frequency of the occurrence of falls and pressure ulcers in patients; General Perception of Safety (PGS)-the items express the vision of the nurses regarding the safety of care provided in the service where they are working. The nurses perception was evaluated through a five points Likert scale, where 1 corresponds to very rarely, 2 to rarely, 3 to sometimes, 4 to often and 5 to very often.

The collection of data occurred on the 1st trimester of 2014; the participants answered to a questioner consistent of two parts: the first contained questions about socio-demographic and professional aspects, in the second part the questions evaluate the risk and occurrence of adverse events associated with the nursing practices.

In the initial phase of the investigation, we started by request authorization from the authors of the measuring scale for its utilization. We formalized, by letter directed to the hospitals directions, the request of authorization for the investigation's development, explaining the ambit and objectives, assuming the commitment of confidentiality and anonymity of data, as well as the concession of the results after the end of the study. The study was approved by the respective Ethic Commissions of all the hospitals. In this investigation all the ethical principals based on human dignity were safeguarded, the participants have decided spontaneously to adhere to the study, being provided information about the theme, the final ambit and the objective of the study.

In the analysis of the data, we used descriptive statistics (measures of central tendency, dispersion and frequency). To evaluate the psychometric characteristics of the scale we resort to the Factor Analysis Confirmatory (FAC), given the scale has been previously subject of investigations, being known its dimensionality (number of factors).Thus we sought to confirm its factorial structure, determining the extent of its adjustment to the correlative structure observed between the variables in our sample [7].

The data analysis was supported by the IBM Statistical Package for Social Sciences (SPSS), version 21 and IBM SPSS AMOS® (version 22) software's.

Results and Discussion

The sample of this study is mostly female (85.2%), with an average age of 32.4 years old, with a minimum of age of 21 years old and maximum of 61 years old. In terms of academic qualifications the bachelor's degree is the predominant (83.2%). As for the professional experience, it was verified that the average number of total experience years is 9.2 years, in the hospital is 7.1 years and in the current service is 4.6 years. In the type of labor linkage, the nurses with permanent links to the hospital represent 70.7% of the sample, while the temporarily hired ones represent only 29.3% of the sample.

Psychometric Evaluation of the Subscale of Evaluating the Risk and Occurrence of Adverse Events (Castilho & Heck, 2012)

In order to systematize, conceive greater emphasis and quality to the information produced, we began by evaluating the psychometric properties of the scale in our sample with the FAC.

The original model composed of 6 factors including a total of 13 items, adjusted to a sample of 628 nurses, revealed a quality of adjustment acceptable ($\chi^2(52)=258.69$;p=0.000; $\chi^2/gl=4.976$; GFI=0.940; PGFI=0.537; RMSEA=0.080), except in the index PGFI. After removing the items with factor weights of less than 0.5, which meant the removal of the stocking PGS (with 2 items: AE_G1, AE_G2) and correlated errors of some items (A3/A4, B6/B7),the subscale of Result-Risk/Occurrence of Adverse Events was composed of 5 factors with the total of 11 items: AEC (4 items), RO-HCAI (1 item); RO-ME (2 items); RQUP (2 items); OQUP (2 items).

Despite of the value of the measure PGFI continue to reveal bad adjustment, the simplified model presented in general a good quality of adjustment ($\chi^2(33)=117.363$; p=0.000, $\chi^2/gl=3.56$, GFI=0.967; PGFI=0.484; RMSAE=0.064), being significantly higher than the original model and therefore more suitable for evaluating our sample, the risk and occurrence of adverse events, so we decided to proceed with this version more reduced.

Patient Safety: Risk/Occurrence of adverse events associated with nursing care

The nurses considered the Risk/Occurrence of Medication Errors the type of AE that occurs less frequently or which is less likely to occur, because this variable has its average value recorded in five dimensions of AE. (AE_7 M=2.20). On the other hand, the risk/occurrence of HCAI was the type of AE that showed a higher average value (AE_6 M=4.21), showing that the risk and incidence of HCAI is high for the patients of hospitals in working respondents (Table 1).

Another Adverse Event in which we have found an average value slightly above the scale's midpoint, is the Risk of Falls and Pressure Ulcers (AE_8 M=3.07), however the AE Occurrence Falls and Pressure Ulcers assumes an average value less (AE_9 M=2.33). This result is indicative of the quality and safety of nursing care, because the perception of the nurses pointed out that the risk of falls and ulcers is significant, but the adopted nursing preventive practices are effective and the falls as well as the appearance and/or worsening of pressure ulcers do not occur, or it is verified only a small percentage of patients.

Table 1: Average (A), Median (Me) Standard Deviation (SD), Maximum (Max.), Minimum (Min.), Asymmetry (Asym.) e Kurtosis of the variable - Risk Occurrence Adverse Events.

	n	M	Me	SD	Min.	Max.	Asyim.	Kurtosis
AE_5-Risk, Occurrence of Aggravation of the Patient's Condition	628	2,23	2,25	0,603	1	4	0,414	0,163
AE_6-Risk, Occurreceof Infections Associated Health Care (HCAI)	628	4,21	4,00	0,788	1	5	-0,939	0,964
AE_7-Risk, Occurrence Medication Errors	628	2,20	2,00	0,650	1	5	0,549	0,787
AE_8-RiskFalls and Pressure Ulcers	628	3,07	3,00	0,859	1	5	0,260	-0,513
AE_9-Ococurrence Falls and Pressure Ulcers	628	2,33	2,00	0,673	1	5	0,595	0,780
Score ROEA_	**628**	**2,81**	**2,80**	**0,402**	**1,06**	**4,25**	**0,230**	**0,104**

As for the AE Aggravation of the Patient's Condition (due to failure of surveillance, clinical judgment appropriate, patient advocacy), obtained a mean value below the mid-point of the scale (AE_5M=2.23). This result indicates that the patients of these services are less exposed to risk and/or occurrence of aggravation of their clinical condition, due to the adoption of safer nursing practices.

At last, we signalize that the global evaluation of the Risk and Occurrence of Adverse Events (Score ROEA) showed a low risk and occurrence of adverse events from the responsibility of nursing care for patients, because the average value perceived is 2.81 (below the midpoint of the scale of measurement).

The nursing team has a preponderant role in the reduction of AE, to the extent that adoption of best practices that promote the control of infection as respecting the rules of bio-security, appropriate monitoring of patients, early detection and referral of high-risk situations or worsening of clinical condition is their responsibility.

However, there are known several causes which are the font of less secure healthcare as identified in the research carried out by Aiken and colleagues [8,9,10,11,12], which is related to the unsafe staff (inappropriate ratio of nurse-patient and nurse poorly differentiated in terms of skills) with the increasing odds of patients contracting HCAI. Other studies indicate the physical structure/size of services and assistive technology to healthcare as elements that can enhance or penalize the safety of healthcare [12,13]. In alignment with this evidence, the AE should be understood and analyzed in their entirety, considering what is in their origin, to find appropriate solutions and adjust it to the context, i.e. the predisposing factors such as work overload, lack of knowledge of professionals, institutional infrastructure, among others [5] and not only the identification of the damage source (the healthcare provider).

Conclusion

In this study it was possible to identify the type of adverse events associated with the nursing care which patients suffer or have a greater risk to occur. It was noted that the HCAI are most common. We consider that assistance with less AE can be achieved through a change in the work organization mode and in the improvement of the conditions of the structure/environment (human and material resources).

The AE care concern the hospital managers because besides it causes harm to the patients, it significantly increases the hospitalization costs. So it is essential that policy makers understand the importance and promote the improvement of nurses working conditions, in particular the nursing safe staff, as a way of preventing and combating the occurrence of adverse events. We stress the need to develop strategies which promote the notification of AE. Yet we suggest that the definition of good practice based on evidence, incorporated in a system of quality management and risk control, to be available in the provision of care, to be used as a support to the decision of healthcare providers. We believe that these elements are essential to the promotion of patient's safety.

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