

Nurses' adherence to a fall prevention protocol

Adesão de enfermeiros a um protocolo de prevenção de quedas

Adherencia de enfermeros a un protocolo de prevención de caídas

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ABSTRACT

Objective: to analyze the association between nurses' adherence to a fall prevention protocol and demographic, professional and self-efficacy variables. **Method:** In this cross-sectional study, data were collected from 23 nurses at a university hospital in Cuiabá, using a self-efficacy questionnaire and the Perceived and General Self-Efficacy Scale. The nurses' adherence to the fall prevention protocol was measured by checking the number of fall risk assessment records in the nurses' records within 24 hours of patient admission. **Results:** participant mean age was 37.56 years and 91.3% were female, with an average of 11.43 years of training; 39.13% of the nurses adhered to the protocol and nurses' adherence differed significantly between units ($p = 0.006$). **Conclusion:** an association was found between nurses' adherence to a fall prevention protocol and the units where they worked. The characteristics of patients admitted to these units may have influenced adherence.

Descriptors: Hospitals; Nursing; Patient Safety; Accidental Falls; Guideline Adherence.

RESUMO

Objetivo: analisar a associação entre a adesão de enfermeiros a um protocolo de prevenção de quedas e as variáveis demográficas, profissionais e de autoeficácia. **Método:** estudo transversal, com 23 enfermeiros de um hospital universitário de Cuiabá. Dados coletados por meio de questionário e da Escala de Autoeficácia Geral e Percebida. A medida da adesão dos enfermeiros ao protocolo de prevenção de quedas foi realizada pela verificação do número de registros de avaliação do risco de queda nos prontuários pelos enfermeiros nas 24 horas após admissão dos pacientes. **Resultados:** a idade média dos participantes foi de 37,56 anos e 91,3% eram do sexo feminino, com média de 11,43 anos de formação. Houve adesão de 39,13% ao protocolo e diferença significativa na adesão dos enfermeiros quando consideradas as clínicas ($p=0,006$). **Conclusão:** evidenciou-se associação entre a adesão de enfermeiros a um protocolo de prevenção de quedas e as unidades a quais eles trabalham. As características dos pacientes internados nessas unidades podem ter influenciado a adesão.

Descritores: Hospitais; Enfermagem; Segurança do Paciente; Acidentes por Quedas; Fidelidade a Diretrizes.

RESUMEN

Objetivo: analizar la asociación entre la adhesión de enfermeros a un protocolo de prevención de caídas y las variables demográficas, profesionales y de autoeficacia. **Método:** estudio transversal junto a 23 enfermeros de un hospital universitario de Cuiabá. Los datos fueron recolectados a través de un cuestionario y de la Escala de Autoeficacia General. La medida de la adherencia de los enfermeros al protocolo de prevención de caídas se realizó mediante la verificación del número de registros de evaluación del riesgo de caídas en las historias de los enfermeros dentro de las 24 horas posteriores al ingreso del paciente. **Resultados:** la edad media de los participantes fue de 37,56 años y el 91,3% eran mujeres, con un promedio de 11,43 años de formación. La adhesión al protocolo fue del 39,13%. Hubo una diferencia significativa en la adherencia de los enfermeros en cuanto a las clínicas ($p = 0,006$). **Conclusión:** se evidenció la asociación entre la adherencia de los enfermeros a un protocolo de prevención de caídas y las unidades en las que laboran. Las características de los pacientes ingresados en estas unidades pueden haber influido en la adherencia.

Descriptorios: Hospitales; Enfermería; Seguridad del Paciente; Accidentes por Caídas; Adhesión a Directriz.

INTRODUCTION

Falls are among the main healthcare-related adverse events (AE) in the world. These events can have several consequences for patients, such as worsening of their clinical condition, physical and emotional limitations and dissatisfaction with the quality of the care provided¹. Falls are the second most reported AE in hospitals in the United States of America (USA), and the third in Brazil^{2,3}. Approximately half of these AE result in some type of injury, increasing the length and cost of hospitalization^{4,5}.

When performed properly by healthcare professionals, following specific protocols and associated with safety barriers, patient safety actions can prevent AE, incidents and harm to patients⁶.

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Fall prevention is one of the international patient safety goals and must be implemented by means of care protocols following the National Patient Safety Program (PNSP, as per its acronym in Portuguese)⁷. The implementation of these protocols has shown satisfactory results in preventing this event, even if their impact is not immediate in the intended outcomes^{8,9}. In addition, they have shown to be important in reducing the rate of falls, improving the quality of care and reducing hospitalization costs¹⁰.

However, despite the efforts of hospital institutions in implementing safety protocols, a problem that is frequently found is the low adherence of health professionals to these protocols^{11,12}, contributing to the continuation of patient safety incidents in hospitals¹³.

Health professionals' adherence to fall prevention protocols is influenced by some barriers such as lack of knowledge to perform risk assessment, lack of motivation, unfamiliarity with the protocol, and self-efficacy (SE)^{14,15}. It is worth highlighting SE, because it is the foundation for motivation, wellbeing and personal fulfillment, having a key role in behavior change¹⁶.

Investigations focused on the adherence of health professionals to fall prevention protocols are incipient, and among those carried out, most are intervention studies¹⁷⁻¹⁹. Observational studies showed that nurses' adherence to other types of prevention protocols was associated with different factors, such as psychosocial, organizational²⁰ and patient safety climate aspects²¹. High levels of SE were associated with nurses' adherence to a smoking treatment protocol²².

Research on the association of demographic, professional and SE variables with nurses' adherence to fall prevention protocols in hospitals has not yet been conducted. Thus, the objective of this study was to analyze the association between nurses' adherence to a fall prevention protocol and demographic, professional, and self-efficacy variables.

METHOD

This is a cross-sectional study conducted with nurses from a university hospital in the municipality of Cuiabá, state of Mato Grosso, between April and September 2019.

Sample size was determined based on the non-probability sampling technique, using convenience sampling. Nurses who provided care in adult, child, adolescent, prepartum/delivery/postpartum hospitalization units and adult intensive care units were included. These professionals were chosen because they provide direct care to inpatients and are responsible for risk assessment upon patient admission and for applying fall prevention measures that are included in a single protocol for all sectors.

Nurses who worked in administrative and outpatient sectors were excluded, because the institution's fall prevention protocol was not applicable in these units.

A total of 55 nurses were eligible, of whom 23 declined to participate before the study was initiated. During data collection, two nurses were excluded because they were transferred to units that were not part of the study, and seven did not have fall risk assessment data in their medical records. Therefore, the final sample of this study was made up of 23 nurses who worked in inpatient units with different work schedules (12/36 hours, 12/60 hours and six hours a day).

Sociodemographic data and professional profile were collected by means of a semi-structured and self-administered instrument, with 15 questions, containing the following variables: sex, age, marital status; and professional data: graduation, time since graduation, graduation in another area, length of work in the current unit, workload, working hours, whether they had other employment relationship, whether they had a graduate degree, in which area, if they received any training on fall prevention, where the training was provided; if the nurses knew the fall prevention protocol of the studied hospital.

Nurses' SE was measured using a self-administered scale validated for Brazil, the General and Perceived Self-Efficacy Scale (EAGP, as per its acronym in Portuguese)²³. The EAGP has 10 statements and the answers are presented on a Likert scale with five levels ranging from strongly disagree (1 point) to strongly agree (5 points). In a range from 10 to 50, the higher the score, the higher the perceived SE. The results of the nurses' SE were expressed as mean values.

The adherence of nurses to the protocol was verified in the medical records by means of fall risk assessments within 24 hours of admission of all inpatients¹³. To locate the medical records, the Process Management and Information Technology sector was asked to provide a list of admitted patients. Once the list was available, the hospital's registration

sector was asked to provide the patients' medical records. In this study, data regarding SE and nurses' adherence to the medical record, obtained after the intervention, were considered.

The study variables were: dependent - rate of adherence of nurses to the fall prevention protocol, calculated based on the number of fall risk assessments registered in the charts by the nurses within 24 hours after admission x 100/total of patients admitted by the nurse¹³. For the analyses, adherence was categorized into two new variables, yes and no. Independent - demographic and professional variables, sex (male/female), age (in years), marital status (single/married/stable union/widowed/divorced), undergraduate degree (public/private university), time since graduation (in years), an undergraduate degree in another area (yes/no), time working in the current unit (in years), workload (12/36, 12/60, 6h/day), work schedule (morning/afternoon/evening), whether the nurse had any other employment relationship (yes/no), whether they had a graduate degree (specialization/master's/doctorate), in which area, whether they received any training on fall prevention (yes/no), place where the training was conducted, whether the nurse knows the fall prevention protocol of the studied hospital (yes/no).

Data were entered in a Microsoft Excel® spreadsheet, version 2007, and later exported to the STATA 14.0 program. The data from the seven excluded nurses were analyzed to identify whether they presented statistically significant differences in relation to the characteristics of the nurses who made up the sample, and no differences were found between them.

Absolute and relative frequencies were calculated for categorical variables, whereas mean and standard deviation values were used for numerical variables. Data normality was verified using the Shapiro-Wilk test. Fisher's exact test (qualitative independent variables) and the Mann-Whitney test (quantitative independent variables) were applied to verify the association between adherence of nurses to the fall prevention protocol and the independent variables. A p-value <0.05 was considered in all analyses, with a confidence interval of 95%.

The research protocol was approved by the Human Research Ethics Committee of the institution involved and all participants signed a free and informed consent form.

RESULTS

Twenty-three nurses participated in this study, 91.3% of whom were women, with a mean age of 37.56 years (SD = 7.66). Most (69.57%) of the professionals graduated from public universities, had graduate degrees (95.45%), the main ones being specialization (86.36%) and master's degree (27.27%). The mean length of education was 11.43 years (SD=5.85).

Table 1 presents the analysis of the data collected.

TABLE 1: Analysis of the association between nurses' adherence to a fall prevention protocol and demographic, professional, and self-efficacy variables (n=23). Cuiabá, MT, 2019.

Variable		Frequency		Adherence				p
		n	%	yes		no		
				n	%	n	%	
Sex	Female	21	91.3	7	77.8	14	100.0	0.142 ¹
	Male	2	8.7	2	22.2	0	0.0	
Working clinic	Medical	4	17.39	3	33.30	1	7.14	0.006 ¹
	Surgical	2	8.70	2	22.22	0	0.00	
	Pediatric	4	17.39	3	33.30	1	7.14	
	GO	7	30.43	0	0.00	7	50.00	
	PDP	4	17.39	1	11.11	3	21.43	
	Adult ICU	2	8.70	0	0.00	2	14.29	
FP training	Yes	8	36.36	4	44.44	4	30.77	0.66 ¹
	No	14	63.64	5	55.56	9	69.23	
Training location	At the hospital	1	12.50	0	0.00	1	25.00	1.00 ¹
	Elsewhere	7	87.50	4	100.00	3	75.00	
Knows the protocol	Yes	11	47.83	6	66.67	5	35.71	0.21 ¹
	No	12	52.17	3	33.33	9	64.29	
Self-efficacy	Mean	40.91		40.00		41.5		0.49 ²
	SD	5.03		3.60		5.82		

Note: SD=standard deviation (1) Fisher's exact test (2) Mann-Whitney's test.

Legend: GO=gynecology and obstetrics, PDP=pre-partum, delivery and post-partum, adult ICU= adult intensive care unit, FP training= fall prevention training

Regarding work characteristics, 17.39% worked in the medical clinic, 8.70% in the surgical clinic, 17.39% in pediatrics, 30.43% in gynecology and obstetrics, 17.39% in prepartum, delivery and postpartum, and 8.7% in the adult intensive care unit (ICU). The average length of stay of the nurses in each unit was 39.08 months. Most of the nurses (78.26%) have no other employment relationship and work shifts vary from 12/36 hours (34.78%) and 12/60 hours (34.78%) to 6 hours a day (30.43%).

Regarding fall prevention, 63.64% of the nurses reported not having received training on the subject. Of those who had received training, 67.50% took place outside the institution, and 12.50% in the studied hospital. More than half of the nurses (52.17%) did not know the fall prevention protocol of the hospital.

Of the nurses surveyed, 39.13% (95%CI: 20.62; 61.39) adhered to the fall prevention protocol. There was a significant difference in the adherence of nurses among the clinics, ($p=0.006$), of which greater adherence was found in the medical, surgical, and pediatric clinics.

DISCUSSION

Studies have been conducted to analyze the adherence of health professionals to different types of protocols in hospitals. However, to our knowledge, this is the first to investigate the association between the adherence of nurses to a fall prevention protocol in a hospital and the demographic, professional and self-efficacy variables of nurses.

The main result of this study evidences the association between the adherence of nurses to a fall prevention protocol and the inpatient unit where they worked. In fact, the work unit of hospital professionals is a factor that can influence their adherence to preventive measures. The unit where nurses worked was also one of the factors affecting adherence in a study on adherence to standard precaution measures, conducted with 1500 hospital nurses in China²⁴.

A probable explanation for this finding is that certain characteristics of the unit can influence nurses' adherence. In general, more fragile patients and individuals with more comorbidities are admitted to medical and surgical units, demanding longer hospitalization and/or more complex care^{8,25}. Studies show that, in these units, there is a higher incidence of falls and hospitalization of patients with risk of falls, such as elderly people^{25,26}.

Regarding the pediatric clinic, although the rates of falls are lower than in adult patients²⁷, the type of patient admitted to this unit can also influence the greater adherence of nurses to a fall prevention protocol. Hospitalized children have an increased risk of falling, either because of their growth and development stage, their health condition and treatment or because of the change in the environment^{28,29}.

On the other hand, in the ICU and gynecology and obstetrics (GO) units that also provide high complexity and long-stay care for patients, there was no adherence of nurses to the fall prevention protocol. Besides, the incidence of falls in the ICU is also high, when compared to the clinical units³⁰. In the studied hospital, the GO unit is a reference for high-risk pregnancy in the state of Mato Grosso, thus making the care of these women more complex than usual, especially after birth, when they can present bleeding, changes in urination, fainting, and postural hypotension, increasing the risk of falls³¹.

Such explanations for the association of nurses' adherence to the fall prevention protocol with the unit where they work require further investigations. In this sense, it is suggested that future research explores the characteristics of these units regarding the nursing work process, such as the perception of obstacles in the work environment for adherence to preventive measures and their work load.

In addition, it is believed that investigations on organizational factors, including the patient safety climate in the institution, may contribute to elucidating issues that are still not well-known. The patient safety climate allows for the creation of a work environment that supports and reinforces health professionals to perform their care practices safely³².

Study limitations

This study has some limitations. Because it is a cross-sectional study, it is not possible to determine causality among the variables and the generalization of data. Furthermore, the sample size was reduced because the investigation was carried out in only one institution, with a restricted number of professionals. However, this did not hinder statistical analyses.

CONCLUSION

This study found that nurses' adherence to a fall prevention protocol in a hospital is associated with the units where they work, with medical and surgical nurses being the most adherent. Sociodemographic, professional and SE variables did not show a significant association with adherence to the fall prevention protocol. Contrary to what was expected, SE did not influence nurses' adherence and, therefore, this construct was not highlighted in the discussion.

The results of this study provide additional knowledge about adherence to fall prevention protocols and the importance of nursing in this process. We also highlight the influence of the characteristics of the care units on the adherence of nurses. This will contribute to the planning and implementation of fall prevention actions according to the characteristics and particularities of each hospital unit.

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