An Assessment of the Nurses' Knowledge and Practices of Inpatient Fall Prevention

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Abstract

Purposes: We conducted a cross-sectional descriptive study to evaluate the knowledge and practices of fall prevention among nurses in four departments in 7A Military Hospital, Ho Chi Minh City, Vietnam.

Subjects and Methods: Sixty-two nurses in four departments were chosen to fulfill pre-designed questionnaires, and their daily fall preventive practices were observed.

Results: There were 40.3% of nurses achieve good knowledge of fall prevention. In practice, 22.5% of nurses had proper compliance, and 77.4% had not. 82.3% of nurses claimed to update fall prevention knowledge often, and 87.1% demanded training for fall prevention. Nurses in the surgical department group had more knowledge of fall prevention than nurses in the internal medicine group of departments (68.7% vs. 10.0%, $p < 0.05$). Female nurses had higher fall risk compliances than males (78.3% vs. 37.5%, $P < 0.05$).

Conclusion: Training for nurses in fall preventive knowledge and practices are needed in 7A Military Hospital.

Introduction

According to WHO (2018): "A fall is an event which results in a person coming to rest inadvertently on the ground or floor or other lower level." [1]. A fall can cause death or other severe complications.

Falling in hospitals is highly concerned in community healthcare as it happens in 2-17% of inpatients, of which injuries related to falling in hospital in various degrees accounting for 15-50% of all injuries [2]. Medical staff, especially nurses, need to evaluate and reevaluate fall risks to ensure the patients' safety during hospitalization [3]. Therefo-

Keywords

Fall Preventive; Nurses;
Questionnaires; Risk
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re, nurses play a significant role in fall prevention. To fulfill this role, nurses need to have proper fall prevention knowledge and practices [4].

To have specific data about fall prevention knowledge and practices of nurses in 7A Military Hospital, we conducted the study: "An assessment of the nurses' knowledge and practices of inpatient fall prevention" aiming to describe the current status of fall prevention knowledge and practices of nurses in some clinical departments in the Hospital.

Subjects

Time, place and subjects of the research

Place of the research

The study took place in Internal Medicine, General Surgery, Surgical Orthopedics, and Cardiology departments in 7A Military Hospital, Ho Chi Minh City, Viet Nam.

Subjects of the research

The subjects were nurses who directly took care of patients with over one year of working experience.

Time of the research

This study was conducted from Jun 2018 to December 2018. The data collection period was within October 2018.

Methods

Research design

This research was a cross-sectional descriptive study.

Sample size and sampling method

All 62 nurses working in Internal Medicine, General Surgery, Surgical Orthopedics, and Cardiology departments in 7A Military Hospital were chosen.

Assessment tools

The assessment tool for fall preventive knowledge was developed based on form 2E in the fall preventive knowledge assessment part for nurses (2E: Fall Knowledge Test) in the toolkit of Agency for

Healthcare Research and Quality (AHRQ), USA. The questionnaires included 23 questions, of which 13 questions (from 12th to 24th) was used to evaluate the nurses' fall preventive knowledge. The questionnaires were tested and ensured reliability (Cronbach's Alpha = 0.81) [5]. The maximum score is 33 points equivalent to 33 correct answers; general fall preventive knowledge was divided into Pass (≥ 17 points) and Fail (≤ 16 points).

The assessment tool for practices was based on the Johns Hopkins tool, including 20 activities [6]. Each activity was evaluated using the Linkert scale of five-level. Level 1 was not done, or no proof of doing (1 point); level 2 was partially done (2 points); level 3 was medium, not entirely done (3 points); level 4 was right and entirely done (4 points), and level 5 was excellently and frequently done (5 points). Practices were considered Pass when the average score was ≥ 3 points.

Data collection method

The knowledge data were collected by direct interviewing the subjects using pre-designed questionnaires.

Fall preventive practice data were collected by observing the nurses in daily activities using a checklist.

Data analysis

Data collected from forms were preprocessed and entered into SPSS 16.0 software in two independent times. A descriptive statistic data analysis method was used; quantitative data were described using tables or charts as frequency/rate; qualitative data were described as average/standard deviation. The confidence interval in this study was 95% (CI=95%).

Results

Characteristics of the subjects

Table 1 presented detail characteristics of the subjects in this study.

Table 1. Characteristics of the subjects (n=62).

Characteristics	Quantity	%
Gender		
Male	16	25.8
Female	46	74.2
Age range		
< 30 years	6	9.7
31 – 45 years	50	80.6
> 45 years	6	9.7
Age		
Average	35.8 ± 6.4	
Department		
Internal Medicine	15	24.2
Surgical Orthopedics	16	25.8
General surgery	16	25.8
Cardiology	15	24.2
Education		
Vocational school	22	35.5
College	5	8.1
University	35	56.4
Frequently knowledge update		
Yes	51	82.3
No	11	17.7
Demand training		
Yes	54	87.1
No	8	12.9

Of all nurses attending this study, the number of females was triple that of males (74.2% over 25.8%). Most of the subjects were from 30-45 years of age (80.6%) and were evenly distributed in the four departments. More than half of them (56.4%) were university degree holders, and 35.5% had vocational school degrees.

Fall preventive knowledge result

The nurses had the failure scores accounted for 59.7%, and there was only 40.3% pass (**Figure 1**). The average knowledge score was 15.95 (SD=3.94).

Figure 1: Fall preventive knowledge results (n=62). **Figure 2:** Practice assessment result (n=62).

Fall preventive practice results

There were 77.4% of nurses failed in practical evaluation; only 22.5% of them passed (**Figure 2**). The average score for practice assessment was 2.89 (SD=0.27).

However, there was a more positive image seen in each activity presented in **Table 2**, in which 8/20 (40%) of activities were passed; nearly 2/3 of the activities failed.

The relationship between some of the demographic characteristics of the nurses and the knowledge of fall prevention

The highest Pass scores (68.7%) were achieved from the two surgical departments (the General Surgery and Surgical Orthopedics departments), and the internal medicine departments (Internal medicine and Cardiology departments) got the most Fail scores (90.0%). The difference had statistical meaning with $p < 0.05$. (**Table 3**)

Table 2. Practice assessment scores by activities (n=62) .

No.	Content	Average score	Grade
Q1	To inform and explain to patients and relatives about the patients' risk of falls.	2.72	Fail
Q2	Appropriate bracelet	1.47	Fail
Q3	Give instructions to the patients of family members to use patient rooms and restrooms such as alarm, lights, handrails, restroom locks ...	3.49	Pass
Q4	To instruct patients/family members to use shoes that have good grip; to alert slipping areas in the restroom.	2.89	Fail
Q5	To keep a safe environment: keep tables, chairs... tidy, and the floor dry and clean.	3.34	Pass
Q6	Practice above step 1 to 5	2.94	Fail
Q7	To arrange necessities near the patients.	3.04	Pass
Q8	To present and assist the patients when moving and going to the toilet.	1.45	Fail
Q9	24h continuous observing the patients	1.38	Fail
Q10	To ask for the cause of falling	1.45	Fail
Q11	To instruct the patients and family members about side effects of medication such as low blood pressure, drowsiness, prolong bleeding...	3.06	Pass
Q12	To instruct the patients to wear glasses or hearing aid to keep safe when moving.	2.94	Fail
Q13	To provide movable hangers for suspension fluid or drainage bags	3.26	Pass
Q14	To ensure stable infusion site, DN tube, catheter ... before letting the patients move	3.04	Pass

No.	Content	Average score	Grade
Q15	To provide tools and equipment to assist the patients moving such as wheelchairs	2.81	Fail
Q16	To provide tools to support personal hygiene or urination in beds	2.87	Fail
Q17	To arrange the patients for easily observing or near the nurses' workplace	3.79	Pass
Q18	Agitation patients: safely immobilized the patients.	1.62	Fail
Q19	To ensure a quiet room	3,70	Pass
Q20	To provide appropriate information on fall risk and patient safety.	2.89	Fail

Table 3. The relationship between some of the demographic characteristics of nursing and the knowledge of fall prevention.

Characteristics	Knowledge before training			
	Pass		Fail	
	n	%	N	%
Gender				
Male	8	50,0	8	50,0
Female	18	39.1	28	60.9
$\chi^2=0.943$; $p>0.05$; Chi - square Test.				
Age				
< 30 years	4	66.7	2	33.3
30 – 45 years	17	34.0	26	66.0
> 45 years	5	83.3	1	16.7
$\chi^2=4.000$; $p>0.05$; Phi and Cramer's V Test.				
Departments				
Surgical	22	68.7	8	31.3
Internal	3	10.0	27	90.0
$\chi^2=16.708$; $p<0.05$; Fisher's Exact Test.				
Working experience				
< 10 years	10	50.0	10	50.0
10 – 20 years	8	24.2	25	75.8
> 20 years	6	66.7	3	33.3
$\chi^2=5.143$; $p>0.05$; Phi and Cramer's V Test .				

Relationship between some of the demographic characteristics of the nurses and compliance with falls risk assessment

There was a higher rate of fall risk assessment in females than in males (78.3% over 37.5%). The rate of not complying to fall risk assessment in males was higher than females (62.5% compared to 21.7%). The difference had statistical meaning ($p < 0.05$). (Table 4)

Table 4. The relationship between some of the demographic characteristics of the nurses and compliance with falls risk assessment (n=62).

Characteristics	Fall risk assessment			
	Yes		No	
	n	%	N	%
Gender				
Male	6	37.5	10	62.5
Female	36	78.3	9	21.7
$\chi^2=6.471$; $p < 0.05$; Fisher's exact test.				
Age				
< 30 years	4	66.7	2	33.3
30 – 45 years	31	62.0	19	38.0
> 45 years	6	100.0	0	0.0
$\chi^2=2.463$; $p > 0.05$; Phi and Cramer's V test.				
Departments				
Surgical	22	68.8	10	31.2
Internal	19	63.3	9	36.7
$\chi^2=0.142$; $p > 0.05$; Chi - square Test.				
Working experience				
< 10 years	14	70.0	6	30.0
10 – 20 years	17	54.8	11	45.2
> 20 years	8	88.9	1	11.1
$\chi^2=5.143$; $p > 0.05$; Phi and Cramer's V Test .				

Discussion

In our study, female nurses were the majority with triple the number of male nurses (74.2% compared to 25.8%); most of the nurses were in 30-45 years of the age range (80.6%). This result represented

the distinctive characteristic of nursing and had similarities with many other studies on patient safety and medical complication prevention in Vietnam as well as other countries. More than half of the subjects had university degrees.

The number of nurses who failed in the fall prevention knowledge test was high (59.7%). The rate is higher than that of the studies in Indonesia (30.8%) [3] and Saudi Arabia (<20%) [7]. In fall preventive practices, Fail rates were 77.4%, higher than most previous studies [3, 7]. The difference when comparing our research to other studies in other countries in the area suggested that the concern of patient safety and fall prevention in Vietnam is still lower than others. There have been increasing numbers of policies by Healthcare authority in Vietnam to gain more focus in patient safety as well as improve the training in nursing education; however, the policies need more time for implementation and integration into practices. It is also essential for nursing management at various levels to get involved.

When analyzing the relationships between the knowledge and practices of fall prevention with characteristics such as age, gender, education, departments, and working experience, we found the meaningful relation between departments and knowledge; and between gender and fall risk assessment compliances ($p < 0.05$). The results showed that regardless of education or working experience, the expertise and practices of fall prevention among nurses were limited and supported the conclusion that most of the nurses (87.1%) had a demand for further training inpatient fall prevention. Many studies in the world had shown that training on fall risk assessment and fall prevention to nurses could improve the patients falling rates [8, 9]. Therefore, a complete and regular program to provide the necessary knowledge and skills of fall prevention to nurses are especially needed. In a more optimistic view, although revealing the limitation in the fall prevention capability of nurses, our study has shed

a signal light on the status and demand so that the Nursing division of 7A Military Hospital can plan and implement a strategy to improve the overall patient safety hospital-wide.

Conclusion

There was a limitation on nurses' knowledge and practices regarding patient fall prevention. Nurses in Surgical departments had a better understanding than nurses in Internal medicine departments, and male nurses had lower fall risk assessment compliances than female nurses. A complete and regularly training program is needed to improve patient safety in the hospital.

Declaration

Scientific Responsibility Statement

The authors declare that they are responsible for the article's scientific content including study design, data collection, analysis and interpretation, writing, some of the main line, or all of the preparation and scientific review of the contents and approval of the final version of the article.

Animal and human rights statement

All procedures performed in this study were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. No animal or human studies were carried out by the authors for this article.

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Conflict of interest

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Contribution

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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