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## The relationship between nurses' awareness about risk management and errors in nursing records

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### ABSTRACT

Implementation of risk management in hospitals leads to prevention and reduction of nursing errors. So, nursing personnel should be aware of risk management and the necessary actions should be taken to raise their awareness. Therefore, the present study aimed to investigate the relationship between nurses' awareness about risk management and errors in nursing records. The present study was a descriptive analytical research carried out on 128 nurses working in different sectors of the Alzahra hospital in Isfahan. Convenience sampling was used in the present study and data were collected through researcher-made questionnaire and checklist. The Cronbach's alpha related to reliability of the questionnaire and checklist were equal to 0.85 and 0.72, respectively. The independent t-test, one-way analysis of variance (one-way ANOVA), Pearson and Spearman correlation coefficients were used for data analysis. The results showed that there were inverse correlations between the score of errors in nursing records and nurses' overall awareness about risk management ( $r = -0.144$ ,  $p = 0.48$ ) as well as nurses' awareness about risk management in the area of familiarity with risk control and reduction methods ( $r = -0.22$ ,  $p = 0.01$ ). In other words, by raising awareness about risk management, errors in nursing records were reduced. Generally, the present study showed that familiarity with risk management reduces errors in nursing records. It is therefore imperative that all nurses be trained in the area of risk management.

**Keywords:** record, nursing error, risk management

### INTRODUCTION

Nursing records constitute an important part of the nursing profession [15]. The studies showed that nurses spend 35% and 20% of their time on nursing record and patient care, respectively[8].

Nursing record not only reflects nurses' abilities and their critical thinking about their patients, but it is also a unique care plan resulting in health optimization [13]. Therefore, it is necessary to demonstrate the quality of nursing care[11], especially nursing records related to the care of dying patients or patients with severe illnesses[14].

In the health system, due to on-boarding function, high volume of work, mistakes in communication, lack of time, as well as some psychological problems of nurses, the chance of errors is increased [3].

Risk management should be implemented in hospitals to prevent and reduce nursing errors. So, nursing personnel should be aware of risk management and the necessary actions should be taken to raise their awareness. Because effective risk management in addition to have error detection capability, leads to a culture of trust-based error reporting[1].Therefore, paying attention to prospective risk management-based approaches is also effective to increase hospitals safety. Moreover, risk management forms a series of continuous and developing procedures applied in all strategies in the hospital that should consider all the past, present and future risks [16]. Therefore, the present study aimed to investigate the relationship between nurses' awareness about risk management and errors in nursing records.

### MATERIALS AND METHODS

The present study was a descriptive analytical (correlational) research. Convenience sampling was used in the present study. In order to collect data, first a letter of introduction was requested from Deputy of Research, Isfahan Branch, Islamic Azad University of Khorasgan, and then by providing the letter to Deputy of Research, Isfahan University of Medical Sciences, the permission for entrance to Alzahra hospital was received. The sample consisted of 128 nurses working in different sectors of the Alzahra hospital in Isfahan. Data were collected through researcher-made questionnaire and a checklist consisting of 3 different parts. The first part included nurses' demographic information including 9 items (gender, age, marital status, number of children, educational level, work place, work experience, duration of activity in the current sector, and passing the specialized courses of risk management). The second part of the questionnaire included 4 concepts. The first concept was associated with nurses' awareness about risk management with 5 questions; the second concept was associated with nurses' familiarity with issues and problems related to risk management in workplace with 8 questions; the third concept was associated with nurses' familiarity with risk assessment and analysis methods with 10 questions; the fourth concept was associated with nurses' familiarity with risk control and reduction methods with 7 questions. Finally, the questionnaires including 30 questions with three options of "True", "False", and "Do not know" were examined. Score of 1 was considered if the nurses were aware and selected "True", if they selected "False" or and "Do not know" the score was zero. The scale of 0-30 was considered for this questionnaire, so if the nurse is fully aware of risk management the score will be 30 and if there is no awareness it will be zero. Accordingly, the scales of 0-10, 11-20, and 21-30 were evaluated as low, moderate and high awareness levels, respectively. The third part of the checklist was related to errors in records. In this checklist, 29 nursing records were examined and three options of "Done", "Incorrectly done", and "Not done" were considered. Zero was given to "Done", and 1 was given to "Incorrectly done" and "Not done". The scale of 0-29 was considered for this checklist, so the score of zero was given to the nurse with no error in record, and the score of 29 was given if the nurse had error in record. In this case, one score point was considered for each error, and thus 0-9, 10-19, 20-29 represent low, moderate and high error rates, respectively. In order to assess validity of the researcher-made nurses' awareness about risk management questionnaire, first the questionnaire was prepared based on reliable scientific sources, then its face and content validity was examined by 8 faculty members of Khorasgan Branch-Islamic Azad University, Isfahan University of Medical Sciences, Najafabad Branch-Islamic Azad University, and Shar-E Kord University of Medical Sciences. Nursing that was prepared based on nursing records standards issued by Accreditation Committee of Fasa University of Medical Sciences was also validated by 10 faculty members of Khorasgan Branch-Islamic Azad University and Isfahan University of Medical Sciences. For determining reliability of the questionnaire, the initial version of the questionnaire was distributed between 30 personnel of the hospital as a pilot sample and the Cronbach's alpha of 0.85 and 0.72 were calculated for the questionnaire and the checklist, respectively, that were higher than 0.60. Data were analyzed using descriptive and inferential statistics. Standard mean and standard deviation were used for the descriptive statistics, and independent t-test, one-way ANOVA, Pearson and Spearman correlation coefficients were used for the inferential statistics in the SPSS16software.

## RESULTS

Data analysis showed that the average age of nurses and the average work experience are equal to 34.6 and 10.4 years, respectively. Scope of activities in the current sector ranged between one month and 19 years. The majority of nurses (89.1%) were female, and 91.4% of them had an undergraduate degree. The majority of them (74.2%) were married. 100% of them passed the courses of risk management and 82.8% of them passed the courses of nursing records as well. Table 1 shows that the level of nurses' awareness about the concept of risk management was close to 5 which is higher than the moderate level, the level of nurses' awareness about issues and problems associated with risk management was close to 8 which is higher than the moderate level, and the level of nurses' awareness about familiarity with risk assessment and analysis methods as well as risk control and reduction was lower than the moderate level. The majority of nurses had a moderate awareness (62.5%) about risk management and the mean score of nurses' awareness about risk management was equal to  $15 \pm 5.6$  out of 30 which is a moderate score. Table 2 shows that the level of nursing errors was low (97.7%) and the score of error in nursing records was equal to  $2.2 \pm 1.5$  which represents low error in nursing records. Table 3 indicate that there were inverse correlations between the score of errors in nursing records and nurses' overall awareness about risk management ( $r = -0.144$ ,  $p = 0.48$ ) as well as nurses' awareness about risk management in the area of familiarity with control and risk reduction methods ( $r = -0.22$ ,  $p = 0.01$ ). In other words, by raising awareness about risk management, errors in nursing records were reduced. The score of errors in nursing records also showed weak but not significant inverse correlation in the areas of familiarity with the concept of risk management, the issues related to risk management, and risk assessment and analysis methods.

Table 1: The mean score of nurses' awareness about risk management areas

Statistical Index	A: Familiarity with risk management	B: Familiarity with issues and problems related to risk management	C: Familiarity with risk assessment and analysis methods	D: Familiarity with risk control and reduction methods
	Score out of 5	Score out of 8	Score out of 10	Score out of 7
Mean	3.5	5.5	4.5	2
Standard deviation	1.5	2.1	3.5	1.5
Minimum	0	0	0	0
Maximum	5	8	10	7

Table 2: Frequency distribution of scores of errors in records (level of error in records) in nursing

Score of error in records	Number	Percentage
0-9 (Low)	125	97.7
10-19 (Moderate)	3	2.3
20-29 (High)	0	0
Total	128	100

Table 3: Pearson coefficients of the correlation between scores of errors in records and scores of awareness about risk management

Score of awareness and its areas	Score of error in records	
	r	p
Nurses' overall awareness about risk management	0.048	-0.144
A: Familiarity with risk management	0.93	-0.008
B: Familiarity with issues and problems related to risk management	0.45	-0.07
C: Familiarity with risk assessment and analysis methods	0.34	-0.08
D: Familiarity with risk control and reduction methods	0.01	-0.22

The present study aimed to investigate the relationship between nurses' awareness about risk management and errors in records and indicated a significant correlation[7] in a study entitled "Nurses awareness about critical management and its related factors" indicated that nurses' awareness level was moderate (52.3%) that is almost consistent with the present study[9]. Investigated awareness about nurses working in teaching hospitals in Tehran about patient rights and factors facilitating observance of these rights from their points of view, and showed that the level of nurses' knowledge about patient rights was high (95.5%) which is not consistent with the present study. This inconsistency may be due to difference in knowledge about the studied areas[4]. Conducted a study entitled "Awareness of medical personnel working in Yazd hospitals about hospital wastes management in 2011" and showed that the average score of nurses' awareness was equal to  $14.41 \pm 4.6$  which is consistent with the present study[12] in a study entitled "The audit of nursing documentation in neonatal intensive care unit of Zabol University

of Medical Sciences hospitals” showed that 50.7% of nursing documentations were correct in comparison with the standards which the result is not consistent with the results obtained in the present study[10] carried out a study entitled “Examining quality of nursing records”, that was conducted by reviewing patients’ medical records, indicated that 8.7% of nursing records had good quality which is not consistent with the present study. According to the results obtained from the present study that implies the effect of awareness about risk management on reduction of errors in records, it seems that passing the topic of risk management in the management course is essential for undergraduate students and it should also be taught theoretically and practically in MSc and PhD courses of nursing. Moreover, risk management plays an important role in prevention and reduction of human errors in hospitals. So, managers, with the aid of risk management, can enhance quality of services provided by the hospital and attract more patients to the hospital. Generally, the present study showed that familiarity with risk management reduces errors in nursing records. It is therefore imperative that all nurses be trained in the area of risk management.

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