Evaluation of Knowledge and Practices of Nurses in Orthopedic wards concerning femur Fractures

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الخلاصة

الهدف: دراسة وصفية هدفها تقييم معلومات وممارسات الكادر التمريضي العاملين في ردهات الكسور حول العناية بمرضى كسور عظم الفخذ.

المنهجية : شملت العينة (٥٠) من الكادر التمريضي العاملين في ردهات الكسور في خمس مستشفيات تعليمية في مدينة بغداد. للفترة من الخامس عشر من تشرين الثاني ٢٠٠١ الى الخامس عشر من كانون الثاني ٢٠٠٢. لغرض جمع البيانات صممت اداتان، الاولى لقياس الممارسات عن طريق الملاحظة، والاخرى استمارة استقصائية لتقويم المعلومات بعد مراجعة الادبيات المتوفرة والاخذ باراء الخبراء الاختصاصيين. تم تحليل البيانات من خلال استخدام الاحصاء الوصفي (التكرارات، النسب المئوية، الوسط الحسابي (الانحراف المعياري) بالاضافة الى الاحصاء الاستنتاجي (معامل بيرسون للارتباط، تحليل التباين الاخادي، الاختبار التائي لعينتين مستقلتين، الاختلاف الاصغر).

النتائج : اشارت نتائج الدراسة الى عدم وجود علاقة ذات دلالة احصائية ما بين معلومات الكادر التمريضي حول العناية التمريضية لمرضى كسور الفخذ مع سنوات الخدمة في المستشفى، سنوات الخدمة في ردهات الكسور، والدورات التدريبية، ولكن تبين وجود علاقة ما بين معلومات الكادر التمريضي ومستواهم الثقافي فقط.واستنتجت الدراسة ايضا الى عدم وجود علاقة ذات دلالة احصائية ما بين ممارسات الكادر التمريضي حول العناية التمريضية مع سنوات الخدمة في المستشفى، المستوى الثقافي، والدورات التدريبية في مجال تمريض الكسور، ولكن تبين وجود علاقة ذات دلالة احصائية ما بين ممارسات الكادر التمريضي مع سنوات الخدمة في ردهات الكسور .

التوصيات : اوصت الدراسة الى زيادة الكادر التمريضي في ردهات الكسور، وتقويم برنامج تدريبي خاص للكادر التمريضي العاملين في ردهات الكسور، بناء استمارة تقييم دوري للكادر التمريضي العاملين في ردهات الكسور.

Abstract

Objective: To evaluate the knowledge and practices of nursing staff at the orthopedic wards relative to nursing care presented to patients with femur fractures.

MethodologyThe sample consisted of (50) staff nurses was selected out of orthopedic wards of five teaching hospital in Baghdad city for duration 15th Nivember 2001-15th of January 2002.

For the purpose of data collection, two instruments were constructed. First, observational checklist for the practices measurements and second, knowledge test for the evaluation of the nurse knowledge. Such construction was employed through literature review and validity expert's responses. Data were analyzed through the application of descriptive data analysis (frequency, percentage, standard deviation, mean of scores and the inferential data analysis (Pearson correlation coefficient, one-way analysis of variance, t-test and LSD).

Results The findings indicated that there was no significant between nurses knowledge and their nursing care, years of employment, years of experience and training courses, but, there was significant relationship between their knowledge and education only. The study concluded that there was no significant relationship between the nurses practices and their years of employment, education, and training courses, but, significant relationship was found between their practices and years of experience.

Recommendations : The study recommended that the numbers of staff nurses should be increased, education and training programs for the nurses should be evaluated and periodic evaluation measures for these nurses should be constructed.

Keywords: Knowledge, practice, nurse's, orthopedic ward, femur fractures

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Introduction

A fracture is a break in the structure continuity of bone[1] . A fracture of femur commonly occur in automobile accidents, but may occur in fall from ladders or others high places or in gunshot wound. Fractures of the femur often are accompanied by multiple injuries because they usually occur with sever trauma[2].

A study related that each year more than 250,000 Americans suffer from femur fractures, 90% of these fractures occur in patient older than 65 years[3].

Nurses have a great role and many responsibilities while giving care to patient with femur fracture. Maintaining skin care is needed to reduce the risk of pressure ulcers and turning and positioning the patient's, movement, sensation of affected and an affected part, exercise, assessing pain, pressure area, and nursing measure the promote adequate circulation in the affected part [4,5].

The objective of the study to evaluate the knowledge and practices of orthopedic nurses concerning femur fractures, and to determine relationship of orthopedic nurses knowledge and practices with demographic variables included years of employment, years of experience, level of education and training courses.

Methodology

A descriptive design was conducted on orthopedic nurses who were dealing with patient who experienced femur fractures. Starting from 15th of November 2001-15th of January 2002. A sample consisted of (50) nurses who worked in orthopedic wards to evaluate knowledge and practices concerning femur fractures.

The study was conducted at five teaching hospitals in Baghdad city(12) nurses are selected from Al-Shaheed Adnan Kheirallah hospital; (10) nurses are selected from AL-Karama hospital; (8) nurses are selected from Al-Yarmook hospital; (9) nurses are selected from Al-Kindey Hospital; (11) nurses are selected from AL-Karakh Hospital.

A three part instruments was constructed it consisted of:-
1- Demographic data sheet.
2- Observation check list, each item in the check list has two options (Yes, No) to be checked by the investigator. The observation check list consisted of six main categories as consisted of:
   a- Nursing management in closed reduction consisted of (3) main categories as the following:
      1- Nursing management to the patient who had cast, consisted of (8) main items.
      2- Nursing management to the patient who had skin traction, consisted (8) main items.
      3- Nursing management to the patient who had skeletal traction, consisted of (10) main items.
   b- Pre-Operative nursing management consisted of (13) main items.
   c- Post operative nursing management consisted of (12) main items.
   d- Rehabilitation of patients before discharge from hospital to home consisted of (8) main items.
3- Questionnaire sheet for testing knowledge:
   A multiplied choice questions were developed to evaluate the knowledge of nurses in orthopedic wards. According to the 2 points liker scale as (yes, No) and level of the scale were scored as one for yes, zero for No, at the level of ($p \leq 0.05$).

The pilot study was conducted on (10) nurses to determine the reliability and the validity of questionnaire. The data were carried out through the period of $1^{st} - 20^{th}$ of October 2001. The validity of the observation checklist and the knowledge test was determined by having it evaluated by (13) experts. The internal consistency

scale of reliability correlation coefficient was computed and indicate that the correlation coefficient was r = 0.80 for knowledge; r=0.73 for practices.

The analysis of data dependent descriptive statistics which included frequencies and percentages, mean of score, and standard deviation, as well as inferential statistics which included person correlation coefficient, one-way analysis of variance, t-test two independent sample and LSD.

Result

Table (1) Distribution of the demographic characteristics of the orthopedic nurses

Variable	Frequency	%
* education status		
Primary school graduates	11	22
Secondary school graduate	16	32
Institute graduates	21	42
College	2	4
Total	50	100
* Years of experience in hospital		
1-4	7	14
5-9	7	14
10-14	12	24
15 and above	24	48
Total	50	100
* Years of experience in orthopedic wards		
1-4	27	54
5-9	13	26
10-14	5	10
15 and above	5	10
Total	50	100
* Training course in orthopedic nursing		
Yes	9	18
No	41	82
Total	50	100

Table (1) indicates that the highest percentage (42%) of the nurses were institute graduates, (48%) of them had more than 15 years of experience in hospital, (54%) of the nurses had (1-5) years of experience in orthopedic wards, and (82%) of these nurses had no training courses in orthopedic nursing.

Table (2) mean of scores for items of the nurses practices towards orthopedic with closed reduction (cast). (N = 5)

Item No.	Yes (1)		No (0)		Mean of scores	Standard deviation	Level of significant
	F	%	F	%			
1	0	0	5	100	0	-	NS
2	5	100	0	0	1	-	HS
3	5	100	0	0	1	-	HS
4	1	20	4	80	0.2	0.45	NS
5	0	0	5	100	0	-	NS
6	5	100	0	0	1	-	HS

| 7 | 0 | 0 | 5 | 100 | 0 | - | NS |
| 8 | 1 | 20 | 4 | 80 | 0.2 | 0.45 | NS |

Table (2) reported that the mean of scores on items 2, 3, 6 was highly significant, non significant on items 1, 4, 5, 7, 8 of the nurses orthopedic practices.

Table 3. Mean of scores for items of the nurse's practices toward orthopedic patient with closed reduction (skin traction). (N = 6)

Item No.	Yes (1)		No (0)		Mean of scores	Standard deviation	Level of significant
	F	%	F	%			
1	2	33.33	4	66.67	0.33	0.52	NS
2	0	-	6	100.00	0	-	NS
3	0	-	6	100.00	0	-	NS
4	0	-	6	10.000	0	-	NS
5	6	100.00	0	-	1	-	HS
6	1	16.67	5	83.33	0.166	0.41	NS
7	3	50.00	3	50.00	0.5	0.55	S
8	6	100.00	0	-	1	-	HS

Table (3) reported that the mean of scores on items 5, 8, was highly significant, significant on item (7), non significant on items 1, 2, 3, 4, 6.

Table (4) Mean of scores for items of the nurses practices toward orthopedic patient with closed reduction "skeletal traction". (N = 12)

Item No.	Yes (1)		No (0)		Mean of scores	Standard deviation	Level of significant
	F	%	F	%			
1	2	16.67	10	83.33	0.17	0.39	NS
2	1	8.33	11	91.67	0.08	0.29	NS
3	11	91.67	1	8.33	0.92	0.29	HS
4	12	100.00	0	-	1.00	-	HS
5	0	-	12	100.00	-	-	NS
6	0	-	12	100.00	-	-	NS
7	0	-	12	100.00	-	-	NS
8	3	25.00	9	75.00	0.25	0.45	NS
9	12	100.00	0	-	1.00	-	HS
10	12	100.00	0	-	1.00	-	HS

Table (4) reported that the mean of scores on items 3, 4, 9, 10 were highly significant, non significant on items 1, 2, 5, 6, 7, 8.

Table 5. Mean of scores for items of the nurses practices toward orthopedic patients with pre-operative nursing management. (N = 9)

Item No.	Yes (1)		No (0)		Mean of scores	Standard deviation	Level of significant
	F	%	F	%			
1	3	33.33	6	66.67	0.33	0.50	NS
2	9	100.00	0	-	1.00	-	HS
3	2	22.22	7	77.78	0.22	0.44	NS
4	9	100.00	0	-	1.00	-	HS
5	0	-	9	100.00	-	-	NS
6	0	-	9	100.00	-	-	NS
7	0	-	9	100.00	-	-	NS
8	9	100.00	0	-	1.00	-	HS
9	1	11.11	8	88.89	0.11	0.33	NS
10	1	11.11	8	88.89	0.11	0.33	NS
11	1	11.11	8	88.89	0.11	0.33	NS
12	8	88.89	1	11.11	0.89	0.33	HS
13	1	11.11	8	88.89	0.11	0.33	NS

Table (5) indicated that the mean of scores on items 2, 4, 8, 12, was highly significant, non significant on items 1, 3, 5, 6, 7, 9, 10, 11, 13.

Table 6. Mean of scores for items of the nurses practices towards orthopedic patients with open reduction "post-operative nursing management". (N = 13)

Item No.	Yes (1)		No (0)		Mean of scores	Standard deviation	Level of significant
	F	%	F	%			
1	13	100.00	0	-	1.00	-	HS
2	13	100.00	0	-	1.00	-	HS
3	13	100.00	0	-	1.00	-	HS
4	5	38.46	8	61.54	0.38	0.51	NS
5	13	100.00	0	-	1.00	-	HS
6	0	-	13	100.00	-	-	NS
7	2	15.38	11	84.62	0.15	0.38	NS
8	0	-	13	100.00	-	-	NS
9	2	15.38	11	84.62	0.15	0.38	NS
10	13	100.00	0	-	1.00	-	HS
11	0	-	13	100.00	-	-	NS
12	0	-	13	100.00	-	-	NS

Table (6) revealed that the mean of scores on items 1, 2, 3, 5, 10, was highly significant, non significant on items 4, 6, 7, 8, 9, 11, 12.

Table 7. Mean of scores for items of the nurses practices towards orthopedic patient rehabilitation before discharge from hospital at home. (N = 5)

Item No.	Yes (1)		No (0)		Mean of scores	Standard deviation	Level of significant
	F	%	F	%			
1	0	-	5	100.00	0	-	NS
2	1	20.00	4	80.00	0.2	0.45	NS
3	1	20.00	4	80.00	0.2	0.45	NS

4	2	40.00	3	60.00	0.4	0.55	NS
5	2	40.00	3	60.00	0.4	0.55	NS
6	1	20.00	4	80.00	0.2	0.45	NS
7	5	100.00	0	-	1	-	HS
8	3	60.00	2	40.00	0.6	0.55	S

Table (7) indicated that the mean of scores on item 7, only was highly significant, significant on item 8, only, non significant on items 1, 2, 3, 4, 5, 6.

Table 8. One-way analysis of variance for the comparative difference between the nurses education status relative to their knowledge and practices.

Variables	Source of variation	Sum of squares	Df	Mean of square	f.obse.	$p \leq 0.05$	f. crit.
Knowledge	Between group	1242.817	2	621.409	5.291	0.008	3.20
	Within group	5519.683	47	117.440			
	Total	6762.500	49				
Practices	Between group	163.862	2	81.931	0.889	0.418	
	Within group	4330.539	47	92.139			
	Total	4494.402	49				

Table (8) presented that there was significant comparison between the nurse's education status relative to their knowledge only.

Table 9. One-way analysis of variance for comparative difference between nurse's number of years of employment in the hospitals relative to their knowledge and practices.

Variables	Source of variation	Sum of squares	df	Mean of square	f.obse.	$p \leq 0.05$	f. crit.
Knowledge	Between group	42.857	3	14.286	0.098	0.961	2.81
	Within group	6719.643	46	146.079			
	Total	6762.500	49				
Practices	Between group	568.980	3	189.60	2.223	0.098	
	Within group	3925.422	46	85.335			
	Total	4494.402	49				

Table (9) reported that No significant comparative difference was reported between nurse's number of years of employment in the hospitals with regard to their knowledge and practices.

Table 10. One-way analysis of variance for the comparative difference between the nurses number of years of experience in the orthopedic wards relative to their knowledge and practices.

Variables	Source of variation	Sum of squares	df	Mean of square	f.obse.	p ≤ 0.05	f. crit.
Knowledge	Between group	569.423	3	189.808	1.410	0.252	2.81
	Within group	6193.077	46	134.632			
	Total	6762.500	49				
Practices	Between group	876.204	3	292.068	3.713	0.108	
	Within group	3618.197	46	78.656			
	Total	4494.402	49				

Table (10) revealed that there was only significant comparison between nurses number of years of experience in the orthopedic wards regarding their practices.

Table 11. Statistical comparison between the nurses number of training courses in orthopedic nursing relative to their knowledge and practices.

Variables	Training courses	F	Mean of score	t. obs	df	p ≤ 0.05	t. crit.
Knowledge	Yes	9	72.7778	0.638	48	0.526	2.01
	No	41	70.0000				
Practices	Yes	9	47.5356	1.897	48	0.064	
	No	41	41.0197				

Table (11) presented No significant differences between nurses knowledge and practices relative to number of training courses in orthopedic nursing.

Discussion

Nurses should have high level of knowledge as well as practices. There is no benefit from knowledge without practices, in order to give high quality of patient care. Good practices is an art that is linked to the progress of knowledge and technology and it is executed in an ethical manner[6].

The finding of the present study revealed that the education status most of them were have high institute degrees (table 1).

Relative to their experience, the study had shown that mild age nurses were more apportunate to have experience in both setting including hospital and orthopedic wards (table 1).

Further more, the finding of present study shown that the majority of these nurses were not enrolled in any sort of orthopedic nursing training courses (table 1).

Such findings were evidenced in the significant mean of scores of these practices. This can be interpreted in away that the nurses performance of these practices was adequate concerning such techniques (tables 2, 4, 5 ,7).

Support for such finding presented and evidenced through mean of scores of this practices. This can be demonstrated in a way that the nurses had performed adequate practices concerning such techniques due to nature of their application as routine type of work (tables 3 and 6). In regard to their education status, the findings revealed that there was significant comparison between the nurses education relative to their knowledge. But the result of the present study revealed that there was no

significant comparative between the nurses education relative to their practices (table 8).

A study revealed that many authorities in education emphasized that the level of education had positive effect on the quality and quantity of knowledge and practices[7].

Regardless of their number of years of employment in the hospital, nurses has presented no significant comparative difference between number of years employment in the hospital with regards to their knowledge and practices (table 9).

With respect to the nurses number of years experience at the orthopedic wards did not make any effect relative to their knowledge (table 10). But the present study revealed that there was significant comparison between the nurses number experience at the orthopedic wards relative to their practices.

In addition to that table (11) showed that total number of training courses in orthopedic nursing had no impact up their knowledge and practices.

Recommendations

1- Nurses in orthopedic wards must take the opportunity for continuity for continuing their education to maintain knowledge and skills, as well as updated in orthopedic nursing.
2- Special orthopedic nursing training program can be designed and presented to these nurses.
3- A policy should be initiated for increasing the number of nursing staff in orthopedic wards.
4- Developing standardized tool for periodic evaluation of the nurse's knowledge and skills in orthopedic wards.

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