

Impact of educational program on nurse's practice regarding care of patients with hip fracture in Sudanese hospitals

Abstract

Background: Hip fractures are common injuries affecting the proximal femur of hip joint. In Sudan, hip fracture remains a huge problem and concerns many Sudanese families the costs of her surgeries are very expensive, and they depletes country a lot of resources, and it is causes are due to road traffic accident and gunshots among the military. The nurses are playing vital role regarding care of patient with hip fracture through over caring. The aim of this study is to evaluate the effectiveness of educational program on nurses' practice regard care of patient with hip fracture.

Methods: Quasi-experimental study was done for nurses (N=70), who were working in White Nile governmental hospitals and Omdurman military hospital, Selection was done purposive total coverage; practice of nurses was assessed by observational checklist. The collected data was analyzed by (SPSS) version24.

Results: Most of study sample has poor performance of practice pre intervention of the program by 17.1% and become very good post intervention of the program by 68.6% with mean and standard deviation (57.3 ± 18.2) pre intervention of the program and become (81.7 ± 14.4) post intervention of the program by p value (0.02). Study show significant statistical association concerned practice pre intervention of the program and post intervention of the program by p value (0.02).

Conclusion: From finding the study indicated that the educational program were effective in improving practice of study group.

Keywords: educational program, intervention, nurses, practice, hip fracture, Sudan.

Volume 8 Issue 1 - 2022

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Received: June 24, 2022 | **Published:** July 06, 2022

Introduction

Hip fractures present a huge challenge to patients and healthcare systems. The management of this injury requires a coordinated multidisciplinary intervention which extends far beyond the operating room. As the burden of disease increases the real challenge lies in prevention, and developing strategies to improve the quality of life in this important group of patients.¹⁻⁵ Patients with fragility fractures are the most common orthopedic trauma inpatients, found in great numbers in every acute hospital in every country. Their care is provided in hospital units as well as pre-hospital care settings, emergency departments, outpatient clinics, rehabilitation units and community settings. Despite their high numbers and presence in a wide range of settings, nurses have rarely received formal education in the care and management of this vulnerable group of patients and the centrality of the nursing role is not well recognized in the literature.^{6,7}

Mobilize patients the day after hip fracture surgery and at least once a day thereafter unless contraindicated. Allow patients to bear weight as tolerated, but avoid weight-bearing if there is a clinical concern about the fracture, the fixation or the likelihood of healing. Mobilization can include re-establishing movement between postures (e.g. moving from lying to sitting and sitting to standing the ability to maintain the upright posture.^{8,9} The purpose of this study was to describe the patients' view of nursing care when they were treated for a hip fracture. Our perception is that patients generally felt satisfied with the nursing provided throughout the clinical pathway and that this to a large extent was due to the manner in which the staff created a feeling of security and showed interest and empathy for the patient. The study demonstrates that patients with hip fracture have a major

need of nursing care. The patients' experiences of long waiting times for surgery should lead to investigation and attempts to remedy the causes of delay. For a nurse, it is of major importance to interpret the patient's expression of pain, and education days on pain treatment for nurses are desirable. Good collaboration between the nurse and physiotherapist is critical for achieving good pain relief before mobilization.

Nursing staff need to be attentive and should elicit the patient's feelings through patient-focused communication in order to relieve anxiety about going home. We believe, therefore, that measures such as these can lead to an improvement in nursing care from the patient's perspective. Fundamental Nursing Care Maintaining mobility, energy and participation in self-care during an older person's hospital stay can maintain their independence, reduce the likelihood of falls and fall-related injuries and minimize loss of confidence due to fear of falling. The underlying principle of quality of care is empathy, a complex multidimensional aspect of the therapeutic relationship involving the ability to understand the needs, meanings, fears, priorities and perspectives of patients. Interaction between the caregiver and a patient with cognitive decline can be a source of stress, particularly if the cognitive impairment (or dementia) sufferer resists the efforts of the caregiver. Many aspects of fundamental nursing care during the perioperative period are including: Acute delirium—the nursing team is most likely to recognize the signs of delirium. Pressure injury prevention—pressure injuries are serious complications of immobility, hospitalization and surgery and can affect up to one third of hip fracture patients. Hydration, nutrition, and constipation—fluid management in older people can be difficult as they may self-regulate fluid intake to control incontinence or urinary frequency and to manage difficulties

in accessing toilet facilities. Close monitoring of fluid balance is an essential aspect of nursing care to prevent or identify renal injury and patients' acceptance of fluids and nutritional supplement drinks is often poor. Nutrition is linked to all recovery outcomes and is the responsibility of the whole team, but the nursing team is central to adequate dietary intake because of their 24-h presence.

Constipation—this can be acute or chronic and is a significant and common complication for patients following fracture and during periods of ill health and immobility. Prevention should be considered early in the care pathway; this should involve. Regular assessment of bowel function including frequency and consistency of defecation providing and encouraging a fiber rich but palatable diet Careful but early use of prescribed aperients. Nurses should also educate patients about how to diminish aperients after discharge according to their changed mobility, regained privacy and, eventually, regained appetite Healthcare-associated infection ,prevention, recognition and management are the responsibility of the whole medical team but are central to 24-h nursing care that often includes coordination of care provided by other team members. Nurses in leadership roles can be instrumental in ensuring adherence of staff to infection prevention guidelines. Prevention of pulmonary infections, urinary tract infections and thromboembolism is also important in perioperative care. Secondary fracture prevention—an important aspect of preparing the patient for discharge is considering the secondary prevention of the fracture. This is considered in detail should be a focus during the entire of the patient's stay in hospitals.^{10,11} Findings from this study highlight the need for creative, safe, and effective nursing interventions for the care of the elderly hip fracture patients.

However, it is essential to remember in every situation that care should be individualized based on patients characteristics.¹² Pre-hospital management: transport to hospital no evidence was identified to inform practice with regard to ambulance transport. However, good clinical practice suggests the following are important considerations in patients with fractured hip: Transfer to hospital from the site of the injury should be undertaken as quickly as possible. The training of all ambulance personnel should include the recognition of the possibility of a fractured hip in an older person, often signified by: History of fall? Presence of hip pain? Shortening and external rotation of the lower limb, If necessary, pain relief should be given as quickly as possible using intravenous opiate analgesia, carefully titrated and supervised for effect, starting with a low dose. If this is not possible (e.g. due to lack of appropriate supervision) then analgesia using, If a patient faces a long journey or an irreducible delay before transfer, consideration should be given to the use of an indwelling urinary catheter.; Attention should be paid to pressure area care.¹³⁻¹⁵ The specific objective of the study was to evaluate the effectiveness of the education intervention and assess if there was sustained know edge at 6 months. The purpose of this study was to assess the effects of educational program on nurse's practice regarding care of patient with hip fracture in selected hospitals.

Materials and methods

Study design:

Quasi-experimental study of pretest and posttest was applied on nurses who were working in emergency department, ICU surgery, orthopedic words and surgical words to assess the effect of educational program on their practice of nurses regard care of patient with hip fracture. Study area and study population: This study was conducted at the governmental hospitals of White Nile state and Omdurman military hospital.

A. Kosti teaching hospital

Is a big referral hospital receiving patients from White Nile State and other parts of the Country. It is working 24 hours/7 days a week with regular clinics during the daytime. Other hospital facilities (lab serving the outpatient and inpatients), pharmacy providing most of the needs of the patients. The hospital consists of medical wards, male and female, surgical wards male and female, ICU and pediatric wards with a capacity of about 150 beds, lecture hall, big and small theatre for major and small surgical operations, the number of nurses working in emergency, surgical wards and ICU is 25 nurses.

B. Eldewiem teaching hospital

Is a large referral hospital in White Nile State the hospital consists of male and female ward, medical, surgical, obstetrical and gynecological and pediatric with a capacity of about 130 beds, the number of nurses working in surgical wards and emergency is 15 nurses?

C. Military hospital

Is a large referral hospital in Khartoum State the hospital consists of emergency & accidental department, male and female wards surgical and orthopedic¹⁶ and ICU surgery. With a capacity of about 150 bed. , the number of nurses working in this area is 35 nurses.

Study population all Nurses, who were working in units mentioned of selected hospitals.

Inclusion and exclusion criteria: Nurses who were working in emergency department, surgical, orthopedic¹⁹ words and ICU surgery of these hospitals who were contract in these hospitals and at least diploma degree were including. And any nurse disagreed to be included in this study and absent or not present during educational program was exclude.²⁰

Sample size: $n = (70)$ the sample size was seventy of nurses ($n=70$) obtained by purposive of total coverage for the all number of nurses who were available at the time of the study.

Data collection tools: By observational checklist to evaluate practice was used for data collection.

Ethical consideration

Ethical consideration was obtained from: Postgraduate College and scientific research of Karary University after research committee approval, Ministry of health White Nile state, selected hospitals approval, Participants in this study were informed before data collection has a decision to refuse or accept the inclusion in this research.

Educational programs

An intense educational program was designed by the researcher based on actual assessment nurses practice about hip fracture. Different teaching methodology as discussion, simulators was used, demonstration, and re demonstration, was used also.

Data analysis

Descriptive statistics (including frequency distributions, measures of central tendency, and measures of dispersion). The t test was used. The correlation coefficient was used. The level of significance (α) was set at 0.05 for all analyses. Statistical Product and Service Solutions (SPSS, version 24) package was used to analyses these data.

Discussion

The objective of this study is to assess the effects of educational program on nurse's practice regarding care of patient with hip fracture.

Regarding demographic variable: Most of nurses were female represented 70% and 30% were male. The aged group between 20 and 40 years by 57.1% most of study group have a diploma degree by 57.1% and had more than 7 years of nursing experience. The study showed 67.1% don't receive any training program and 32.9% receive training program on care of patient with hip fracture see in Table 1 our study contrast with study conducted in Egypt by fatma mahrous 2020.¹⁷ in which the participants were patient but in our study the most of participants were nurses.¹⁸

Regarding level of practice as general pre intervention of the program and post intervention of the program. The study showed that the most of study sample not done items of practice or done with error in pre-test and view of study sample done correctly and had been improved in post-test so showed the most of study sample had been

done correctly most of items and few done with error and little of sample not done in post-test show in Table 2.

Illustrate association between practice pre and post intervention of the program. The study had been founded significant statistical association between practice pre intervention of the program and post intervention by p value (0.02).the performance of practice pre intervention of the program the study group had been 41.1% in pre-test and had been improved to 1.4% in post-test. Also reflected the performance by done with error 41.4 pre-test and had been improved to 30.0% in post-test. Also revealed that 17.1% just had been done correctly in pre-test and had been improved to 68.6%. With mean and standard deviation (57.3 \pm 18.2) and had been changed after application of the program to (81.7 \pm 14.4.) So the performance of practice is better than pre intervention of the program. And had been founded significant statistical association between practice pre intervention of the program and post intervention by p value (0.02) see Table 3 Compared to study conducted in Linyi City Chest Hospital, Linyi 276000, Shandong, China also disagree because the participants were patient but in our study the most of participants were nurses.

Table 1 Demographic data of study group n =70

		Frequency	Percentage
Sex	Male	21	30.0%
	Female	49	70.0%
Age	20 – 30 yrs.	40	57.1%
	31 – 40 yrs.	24	34.3%
	41 – 50 yrs.	5	7.1%
	51 – 60 yrs.	1	1.4%
	Diploma	40	57.1%
Educational level	Bachelor	27	38.6%
	Master degree	3	4.3%
	PHD	0	0%
Years of experience	Less than 1 year	14	20.0%
	1 – 3 yrs.	16	22.9%
	4- 7 yrs.	19	27.1%
	More than 7 yrs.	21	30.0%
Training program	Yes	23	32.9%
	no	47	67.1%

It describes the demographic characteristics: Most of nurses were female represented 70% and 30% were male. The aged group between 20 and 40 years by 57.1% most of study group have a diploma degree by 57.1% and had more than 7 years of nursing experience. The study showed 67.1% not receive any training program and 32.9% receive training program on care of patient with hip fracture.

Table 2 Frequencies of practice pre and post intervention of the programme

Items		Pre		Mean	Std.	Post		Mean	Std.
		F	%			F	%		
temperature	Done correctly	50	71.4			64	91.4		
	Done with error	6	8.6	2.50	.81	6	8.6	2.91	.28
	Not done	14	20.0			0	0		
Pulse rate	Done correctly	34	48.6			64	7.1		
	Done with error	6	8.6	2.06	.96	1	91.4	2.84	.53
	Not done	30	42.9			5	1.4		
Respiratory rate	Done correctly	22	31.4			59	12.9		.68
	Done with error	9	12.9	1.76	.91	2	84.3	2.71	
	Not done	39	55.7			9	2.9		
Blood pressure	Done correctly	33	47.1			59	8.6		
	Done with error	5	7.1	2.01	.97	5	84.3	2.75	.60
	Not done	32	45.7			6	7.1		
pain	Done correctly	13	18.6			23	32.9		
	Done with error	4	5.7	1.43	.79	10	14.3	1.80	.91
	Not done	53	75.7			37	52.9		
from bed to bed	Done correctly	29	41.4			48	68.6		
	Done with error	9	12.9	1.9.6	.93	10	14.3	2.51	.77
	Not done	32	45.7			12	17.1		

Table Continued...

Items		Pre		Mean	Std.	Post		Mean	Std.
		F	%			F	%		
from bed to chair	Done correctly	25	35.7			46	65.7		
	Done with error	9	12.9	1.84	.92	12	17.1	2.48	.78
	Not done	36	51.4			12	17.1		
use Zimmer frame	Done correctly	26	37.1			50	71.4		
	Done with error	6	8.6	1.82	.95	8	11.4	2.54	.77
	Not done	38	54.3			12	17.1		
put pillow between the knee	Done correctly	24	34.3			52	74.3		
	Done with error	6	8.6	1.77	.93	9	12.9	2.61	.71
	Not done	40	57.1			9	12.9		
avoid hip flexion	Done correctly	14	20.0			35	50.0		
	Done with error	4	5.7	1.44	.82	8	11.4	2.11	.94
	Not done	52	74.3			27	38.6		
Medications on time	Done correctly	23	32.9			47	67.1		
	Done with error	9	12.9	1.77	.93	1	1.4	2.36	.93
	Not done	38	54.2			22	31.4		
skin care	Done correctly	27	38.6			50	71.4		
	Done with error	3	4.3	1.81	.96	8	11.4	2.54	.77
	Not done	40	57.1			12	17.1		
mouth care	Done correctly	19	27.1			40	57.1		
	Done with error	5	7.1	1.61	.88	12	17.1	2.31	.86
	Not done	46	65.7			18	25.7		
pain	Done correctly	27	38.6			62	88.6		
	Done with error	2	2.9	1.80	.97	5	7.1	2.84	.47
	Not done	41	58.6			3	4.3		
tenderness	Done correctly	20	28.6			58	82.9		
	Done with error	4	5.7	1.63	.90	3	4.3	2.70	.68
	Not done	46	65.7			9	12.9		
swelling	Done correctly	28	40.0			53	75.7		
	Done with error	3	4.3	1.84	.97	5	7.1	2.5	.77
	Not done	39	55.7			12	17.1		
discomfort	Done correctly	15	21.4			46	65.7		
	Done with error	3	4.3	1.47	.83	7	10.0	2.41	.86
	Not done	52	74.3			17	24.3		
skin colour	Done correctly	14	20.0			36	51.4		
	Done with error	5	7.1	1.47	.81	10	14.3	2.17	.92
	Not done	51	72.9			24	34.3		
alignment of leg	Done correctly	23	32.9			56	80.0		
	Done with error	2	2.9	1.68	.940	4	5.7	2.65	.72
	Not done	45	64.3			10	14.3		
position of the patients	Done correctly	20	28.6			52	74.3		
	Done with error	6	8.6	1.65	.89	5	7.1	2.56	.79
	Not done	44	62.9			13	18.6		
sand bag hang freely	Done correctly	20	28.6			50	71.4		
	Done with error	4	5.7	1.63	.90	8	11.4	2.54	.77
	Not done	46	65.7			12	17.1		
Turning and lifting every two hours	Done correctly	38	54.3			61	87.1		
	Done with error	3	4.3	2.13	.97	6	8.6	2.82	.48
	Not done	29	41.4			3	4.3		
assess bed sore	Done correctly	26	37.1			55	78.6		
	Done with error	4	5.7	1.80	.95	6	8.6	2.65	.69
	Not done	40	57.1			9	12.9		
use powder & Colonia	Done correctly	25	35.7			43	61.4		
	Done with error	5	7.1	1.78	.95	10	14.3	2.37	.85
	Not done	40	57.1			17	24.3		
observe amount of urine & colour	Done correctly	37	52.9			58	82.9		
	Done with error	3	4.3	2.10	.98	4	5.7	2.71	.66
	Not done	30	42.9			8	11.4		
observe functioning	Done correctly	19	27.1			58	82.9		
	Done with error	5	7.1	1.61	.88	2	2.9	2.69	.71
	Not done	46	65.7			10	14.3		
control of infection	Done correctly	16	22.9			43	61.4		
	Done with error	3	4.3	1.50	.85	7	10.0	2.33	.89
	Not done	51	72.9			20	28.6		
Dressing	Done correctly	20	28.6			50	71.4		
	Done with error	12	17.1	1.74	.88	6	8.6	2.55	.79
	Not done	38	54.3			14	20.0		

Table Continued...

Items		Pre		Mean	Std.	Post		Mean	Std.
		F	%			F	%		
diets	Done correctly	43	61.4	2.27	.94	64	91.4	2.84	.53
	Done with error	3	4.3			1	1.4		
	Not done	24	34.3			5	7.1		
fluids	Done correctly	34	48.6	2.03	.978	55	78.6	2.60	.73
	Done with error	4	5.7			2	2.9		
	Not done	32	45.7			13	18.6		
discharge plan	Done correctly	18	25.7	1.57	.88	54	77.1	2.60	.76
	Done with error	4	5.7			4	5.7		
	Not done	48	68.6			12	17.1		
follow up	Done correctly	26	37.1	1.80	.96	55	78.6	2.62	.75
	Done with error	4	5.7			4	5.7		
	Not done	40	57.1			11	15.7		

Table 3 Association between practice pre and post intervention of the program

	Practice pre			Practice post			p. value
	Frequency	Percentage	Mean & st.def	Frequency	Percentage	Mean & st.def	
Not done	29	41.4	Mean	1	1.4	Mean	0.02
Done with error	29	41.4	57.3	21	30.0	81.7	
Done correctly	12	17.1	St.def	48	68.6	St.def	
Total	70	100.0	18.2	70	100.0	14.4	

Figure 1 show the study group of practice pre intervention of the program. The study showed 17.1% just done correctly and equal done with error and not done by 41.4% in pre-test. These indicate the majority of sample does practice with error or not done so the performance of practice is poor regard care of patient with hip fracture.

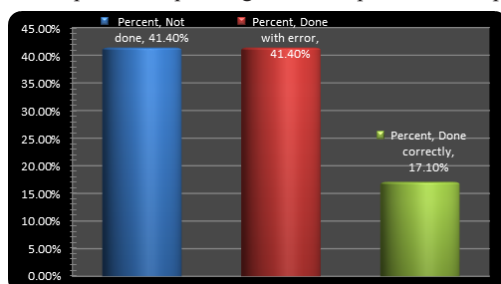


Figure 1 practice _pre intervention of the program.

Figure 2 show the study group of practice post intervention of the program. The study showed 68.6% does the practice correctly and 30% done with error and 1.4% just not done. So the performance of practice was become very good after intervention of the program regard care of patient with hip fracture.

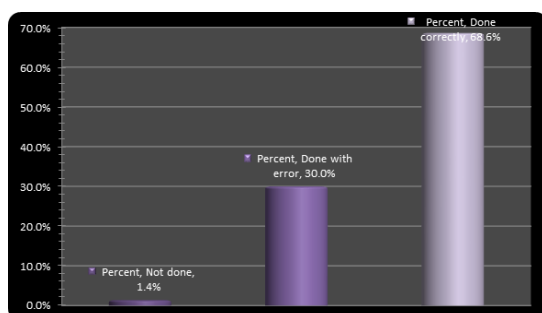


Figure 2 Practice post intervention of the program.

The comparison of mean scores of practice in table (2) showed that the differences in the mean score with standard deviation of practice between pre-test (57.3±18.2) and Post-test was (81.7±14.4) and p-value was (0.02)that was statistically significant association. Therefore, the training program is effective in improving performance of nurses regarding care of patient with hip fracture.²¹

Conclusion

- 1) Based on the finding of the study result conclusion can be deduced the following:
 - a) Most of study group have moderate level of practice before application of educational program and improved become good after application in post-test.
 - b) The study indicated that the educational programs is effective in improving practice this enhancement performance of study group, and indicated the ability of study group to contribute in care of patient with hip fracture.
- 2) Based on conclusion of this result of the study following recommendation was suggested:
- 3) Increase nurses awareness through continuous training programs periodically for the all staff of nurses who were working in selected areas.
- 4) Annuals conferences for nurse's staff about orthopedic care to discuss their problems and find ways to improve services provide to patients especially with hip fracture
- 5) The contents of training program are advised to be included in the curriculum of nursing program.

Acknowledgements

None.

Conflicts of interest

None.

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