Implementing an Educational Module on Enhancing Nurses' Knowledge for Orthopedic Patients with Traction or Internal Fixation

Rania AbdelKhalik Gouda[1], Mohammed Morsi Wahba[2], Amal Bakr Abo El – Ata[3], Shreen Ibrahim EL-Hag El-Tahry[4]

[1]Assistant Lecturer at Faculty of Nursing, Port Said University

[2]Professor of Orthopedic Surgery Faculty of Medicine - Mansoura University

[3]Professor of Medical Surgical Nursing Faculty of Nursing - Port Said University

[4]Lecturer of Medical Surgical Nursing Faculty of Nursing - Port Said University

ABSTRACT

Background: Patients with traumatic fractures require traction or internal fixation, which necessitates the use of skilled nurses to satisfy the patient's demands and avoid complications. As a result, orthopedic nurses play a crucial role in the treatment of patients who require traction or internal fixation., **Aim:** To evaluate the effect of an educational module on enhancing nurses' knowledge for orthopedic patients with traction or internal fixation. **Subjects and method: Design:** A quasi experimental research design was utilized in this study. **Setting:** The study was carried out at orthopedic department in (Mansoura University Hospital and Mansoura Emergency Hospital). **Subjects:** A convenient sample of staff nurses (50 nurses) who were working in the previously mentioned settings and participate in this study. **Tools:** The data were collected using Nurses' Knowledge Questionnaire. **Results**: The study results indicated that 88% of studied nurses had satisfactory total level of knowledge regarding orthopedic patients with traction or internal fixation immediately post educational module implementation with statistically significant differences whereas (p-value=0,001).**Conclusion:** Nurses' Knowledge was improved after educational module implementation. **Recommendations**: Providing continuous inservice training for nurses related to nursing care of orthopedic patients with traction or internal fixation.

***Keywords*:** Educational Module, Internal Fixation, Nurses' Knowledge, Orthopedic patients, Traction

INTRODUCTION

Orthopedic fractures were always a problem. In health care and many nursing occupations, musculoskeletal injuries such as fractures, dislocations, and soft tissue injuries are prevalent. Fracture care that is incorrect at the start can result in severe long-term morbidity and mortality. Fractures have become more common as a result of modern industrial life, increased road accidents, and increased violence. Immobilization, cast or traction application, or internal or external fixation can all be used to treat fractures (Mohmmed, Taha & Moghazy, 2020).

A fracture is described by Gidden and Wilson (2020) as "an interruption in the continuity and integrity of the bone due to the bone's inability to tolerate the forces exerted on it." Fractures are characterized by acute pain and edoema in the affected area. They're linked to higher rates of morbidity and death, as well as a higher chance of fractures. Fractures can occur at any age, but they are more common in traumatized people and the elderly. Traction is an important aspect of fracture treatment. It entails applying traction to bones that have been fractured or dislocated. "Reverse pulling force" refers to a force that pulls in the opposite direction. Traction is a non-surgical method of treating fractures and dislocations. It's utilized to keep things straight, relieve muscle spasms, and relieve pain, correct, reduce or prevent deformities (Townsend, 2021)

Traction is classified into two forms based on the nature of the applied device: cutaneous traction and skeletal traction. Under local or general anaesthesia, the surgeon inserts wires and needles through the bone distal to the fracture site to apply traction directly to the bone. Pins are inserted into the skin on the sides of the limb, and traction is provided by weights tied to the boom ropes. It is frequently used for fractures of the femur, knee, tibia, humerus, and cervical spine that need longer to heal (Babhulkar & Goel, 2020).

Skin traction is used to stabilise a fractured limb for a short amount of time, control muscle spasms, immobilise an area before surgery, and utilize lighter weights, according to Cheever and Hinkle (2018). An adhesive or elastic wrap is used to apply the traction device to the skin. Apply tape, boots, or splints directly to the skin to keep the damaged area aligned and to assist prevent muscle spasms. Skin traction is divided into three categories: Bucks, Russells, and Bryants. Internal fixation is accomplished using a

variety of implants or devices, including as needles, plates, wires, screws, and nails, which are surgically placed under the strongest sterile procedures when the bone is rearranged. In the preoperative period, patients can receive prophylactic intravenous antibiotics to prevent infection (Kotwal&Mittal, 2020).

Significance of the study:

Each year, more than 12,000 egyptian lose their lives as a result of road traffic crashes and many thousands have fractures that lead to long term disability (Brashers, Mccance, Huether, & Gordon, 2018).Also, the number of patients with femur fracture entering mansoura emergency hospital on 2020 was 460 patients. These highest prevalence leads to increase the use of orthopedic intervention such as cast, skin, skeletal traction, external or internal fixation.

Additionally worldwide, road injuries cause over 1.35 million deaths and many more disabilities between 20 t0 50 million occur annually. The worldwide annual femoral shaft fracture incidence from road traffic accident(RTA) is between 1.0 and 2.9 million and the number of hip fractures is expected to increase from 2,6 million in 2025 t0 4,5 million by 2050(WHO, 2020).So, femoral fractures are a major health care problem worldwide.

Because orthopaedic nurses play a crucial role in the treatment of patients undergoing traction or internal fixation, they must be aware of the risks associated with forced fixation. Nurses who are just started out want to learn how to give effective and satisfying care to their patients and themselves. As nurses are the major group of health workers, they must attain and maintain a high level of nursing knowledge and performance in order to be effective in practice (Smith, Recio, & Griffiths, 2017).

AIM OF THE STUDY:

The present study aimed to evaluate the effect of an educational module on enhancing nurses' knowledge for orthopedic patients with traction or internal fixation. This aim was achieved through:

1. Assess the nurses’ knowledge toward care of orthopedic patients with traction or internal fixation pre implementing educational module.

2. Design an educational module based on assessment to enhance nurses' knowledge for orthopedic patients with traction or internal fixation.
3. Implement an educational module on enhancing nurses' knowledge for orthopedic patients with traction or internal fixation.
4. Evaluate the effect of an educational module on enhancing nurses' knowledge for orthopedic patients with traction or internal fixation immediately post the module and after 3 months.

Research hypotheses:

The level of Nurses' knowledge regarding orthopedic patients with traction or internal fixation will differ after implementation of an educational module.

SUBJECTS AND METHOD:

A quasi experimental research design was used in this study.

Setting:

The study was conducted at orthopedic department in the following hospitals in Mansoura

city: 1- Mansoura University Hospital. The orthopedic department contains 27 beds divided through 3 rooms. Each room contains 9 beds.

2- Mansoura Emergency Hospital: the orthopedic department contains 50 beds divided through five rooms. Each room contains 10 beds.

Sample:

A convenient sample of staff nurses working in the orthopaedic department in the previously described settings (50 nurses) was divided as follows: 32 nurses in the orthopaedic department of Mansoura University Hospital and 18 nurses in the orthopaedic department of Mansoura Emergency Hospital.

Tools for Data Collection:

Data were collected using the following tools:

TOOL (I): Nurses' Knowledge Questionnaire:

It was developed by (Abd-Alla, 1990) and modified by (Gouda, 2017) to assess nurses' understanding of distraction or fixation orthopaedic patient care. It is divided into two sections:

Part 1: Nursing staff demographic and job data, including age, gender, marital status, education level, years of employment, work location, and previous traction or immobility training.

Part (2): Nurses' knowledge Questions:

It covers nursing knowledge of orthopaedic patients who require traction or internal fixation. It has twelve multiple-choice questions, thirteen true-false questions, and nine open-ended questions, including the following:Types and benefits of traction and counter traction (3questions)

- Goals of fractures treatment (1question)
- Skin traction, duration, equipment, weight, indications, contraindications and complications (7 questions)
- Skeletal traction weight, advantages and complications (4 questions).
- Nursing role in care of orthopedic patients with skeletal traction (4 questions).
- Correct position of orthopedic patients with traction (1 question).
- The allowed time for lift out of the bed for orthopedic patient with internal fixation (1 question).
- Principles of effective traction (6 questions).
- Nurse's role in turning patients with femur operation (2 questions).
- Nurse's role during turning orthopedic patients with internal fixation. (1 question).
- Advantages and disadvantages of internal fixation(1 question).
- Signs of infection for pin site (1 question)
- Complications of bedridden patients and nursing role for avoiding it's occurrance (2 questions).

Scoring system:

- Answers were assessed using sample key answers prepared by the researchers, with correct answers receiving a (1) and wrong answers receiving a (2). Calculate the nurse's total rating, then convert it to a percentage as follows:

  • A score of 60 percent or more indicates satisfactory nursing knowledge, whereas a score of less than 60 percent indicates unsatisfactory nurse knowledge (Mostafa, Mehany & Ahmed, 2019).

Operational design:

It was entailed under the following 4points:

1- Preparatory phase

2-Content validity and reliability of the tool

3-Piloting of the study tool

4 -Field work description

1-Preparatory Phase:

To become familiar with the study variables, review past and present relevant literature, covering all aspects of the problem, utilising all official websites such as Pubmed, Google Scholar, and available scholarly books, papers, journals, and journals.

2-Content Validity and Reliability of the tool:

(A) Validity: The tool was tested by 9 experts from the Faculty of Medicine, Surgery, Nursing, and Mansoura University Faculty of Medicine, University of Port Said for content validity, completeness, and applicability. They made some changes to the tool, but nothing has changed in their opinion.

(B)Reliability: It was done using Cronbach alpha coefficient to assess the internal consistency of the tool and its value was (0.74) for knowledge .(Gouda, 2017)

3- Pilot study

A pilot study was conducted to see if the data collecting tools are clear, understandable, and feasible by 10% (5 nurses) of the total number of nurses (55 nurses) working in the Orthopaedic Department at Mansoura University Hospital and Mansoura Emergency Hospital. Researchers can use the data from the pilot study to improve the tool by correcting or adding elements as needed. Changes were made as needed, and the final form was created. Nurses who took part in the pilot trial were not included in the main sample.

4-Field work:

The study was conducted for nine months from the beginning of October (2020) to the end of June (2021).The study was carried out through the following phases:

Step (1) Assessment phase:

After completing the tool, the researchers used tool (I) to assess nurse performance at this point. Nurses' knowledge of the management of orthopaedic patients with distraction or internal fixation was assessed using Tool (I). Each nurse was given a copy of Tool (I) by the researchers, who explained it to them and requested them to fill it out carefully. The tool takes roughly 20 to 30 minutes to populate. Nursing protocols were created based on caregiver needs and requirements collected by researchers, as well as recent literature.

Step (2):Educational Module development phase.

Following a review of the literature, an educational programme for the management of orthopaedic patients with distraction or internal fixation was developed: (Lynn, 2018), (Sharma, 2020). (Cooper & Gosnell, 2019). It includes sections on (maxillary and mandibular limb anatomy and physiology), fractures (definition, causes, classification, signs and symptoms, healing process, complications), fracture therapy, traction (definition, purpose, types), cutaneous and skeletal traction (Definition, Indications, Contraindications, Complications, and Care). Fixation on the inside (definition, device type, indications, advantages, disadvantages, complications), (Nursing Care before and after internal fixation Surgery). The aim of educational module was to enhance nurses' knowledge related to orthopedic patients with traction or internal fixation.

Step (3): educational module implementation phase.

During morning and afternoon shifts, the educational module consists of four lessons carried out over a 14-week period. Seven groups of nurses were studied: four at Mansoura University Hospital and three at Mansoura Emergency Hospital. Each group meets separately in a 45-minute meeting room before being transported to the assembly group during the shift's allotted time (am, pm). While explaining the theory section, each nurse will receive a printed copy of the Knowledge and Procedure Recall handout. The module employs a variety of teaching techniques, including group discussions and lectures, all of which are presented in a clear and concise manner.

Step (4). Module Evaluation Phase:

Use Tool (I) to assess the educational module's outcomes. The nurse's knowledge of the care of orthopaedic patients with distraction or internal fixation was assessed immediately after the module was implemented. Three months later, the researchers conducted a follow-up assessment, asking nurses to appraise the module's effectiveness and complete a questionnaire.

C-ADMINISTRATIVE DESIGN:

The hospital's management received legal consent for data collecting from Mansoura University Hospital and Mansoura Emergency Hospital after presenting an official letter from the Deputy Dean of the Faculty of Nursing at the University of Port Said. Researchers and nursing administrators met for a meeting and discussion to educate them on the study's goals and to improve collaboration throughout the study's implementation phase. Prior to data collection, nurses' verbal consent was also requested.

Ethical Considerations:

The Research Ethics Committee of the University of Port Said -Faculty of Nursing gave their approval. In addition, the hospital director's agreement to participate in the study shall be obtained after presenting the study objectives. After discussing the study objectives and comprehensive data collection process to each participant (caregiver), seek their consent so that they are aware of the importance of their involvement. In addition, the nurse will give a brief and thorough description of the study, assuring that the information acquired would be kept private and utilized only for research purposes.

The participants (caregivers) were told that their participation was completely voluntary and that they might leave the study at any moment for any reason. Furthermore, all information gathered from inspection subjects is kept totally private. Furthermore, the data collection method does not impair the environment's work harmony.

D-STATISTICAL ANALYSIS:

Using numerical and percentage distributions, organize, modify, store, tabulate, and evaluate acquired data. The Statistical Package for the Social Sciences Program (SPSS) software package version 16 was used for statistical analysis. Determine whether there are statistically significant differences between study variables using appropriate statistical tests. When the p-value is less than 0.05, significance level values are considered, but a p-value of less than 0.05 indicates that the result is not significant.

RESULTS:

Table (1): Shows that 40% of the studied nurses were at age group from 30 to less than40 years old. Regarding gender, 82% of studied nurses were female. As regards to marital status, 72% of them were married. In relation to educational level, 46% of studied nurses had technical secondary school of nursing.

Table (2): Shows that 64% of studied nurses' workplace in Mansoura university hospital while 36% their workplace in Mansoura emergency hospital. In relation to years of experience, 66% of studied nurses had more than 10 years experiences. Regarding training courses, 90% of studied nurses didn't attend any training courses in the field of caring orthopedic patient with traction or internal fixation. As regards to working outside, 96% of studied nurses didn't work outside their country.

Table (3): Illustrated that 88% of studied nurses had satisfactory total knowledge immediately post educational module implementation compared to 26% pre and 78% of

them follow up after educational module implementation with statistically significant differences whereas (P=0.001).

Table (4): Clarified that there were no statistically significant relations between demographic characteristics of the studied nurses and their knowledge pre, immediate post, follow up after educational module implementation.

Table(5): Demonstrated that there were no statistically significant relation between knowledge of the studied nurses and their work related data pre,immediate post while there was a statistically significant relation between knowledge of the studied nurses and their work related data related to workplace at follow up after educational module implementation.

Table (1): Demographic characteristics of the studied nurses (n=50)

Variable	**Nurses (n=50)**	
	N	**%**
Age in Years		
<30	17	34.0
30 <40	20	40.0
40<50	12	24.0
50-60	1	2.0
(Range) Mean±SD	(25-50)	36.5 ± 8.9
Gender		
Male	9	18.0
Female	41	82.0
Marital Status		
Single	8	16.0
Married	36	72.0
Divorced	4	8.0
Widowed	2	4.0
Level of education		
Technical secondary school of nursing	23	46.0
Technical institute of nursing	15	30.0
Bachelor degree of nursing	12	24.0

Table (2): Work related data of the studied nurses (n=50).

Variable	Nurses (n=50)	
	N	%
Workplace		
Mansoura university hospital	32	64.0
Mansoura emergency hospital	18	36.0
Years of Experience		
5-10 years	17	34.0
More than 10 years	33	66.0
Training courses related to care of orthopedic patient with traction or internal fixation.		
Yes	5	10.0
No	45	90.0
Number of courses		
Zero	45	90.0
One course	4	8.0
Two courses	1	2.0
Working outside the country		
Yes	2	4.0
No	48	96.0
Duration of working outside the country		
None	48	96.0
Two years	1	2.0
Four years	1	2.0

Table(3):Total nurses' knowledge pre,immediate post and follow up after educational module (n=50).

Main items		module phases						X^2	P
		Pre		Immediate post		Follow up			
		N	%	N	%	N	%		
Total knowledge score	Unsatisfactory	37	74.0	6	12.0	11	22.0	47.771	**0.001***
	Satisfactory	13	26.0	44	88.0	39	78.0		

***Significant (P<0.05)**

Table (4): Relation between nurses' knowledge & demographic characteristics during different phases of educational module intervention among studied nurses (n=50).

Variables	Nurses' knowledge in different module phases								
	Before Module		χ^2 (P) value	Immediate post Module		χ^2 (P) value	3 months after Module		χ^2 (P) value
	Unsatisfactory	Satisfactory		Unsatisfactory	Satisfactory		Unsatisfactory	Satisfactory	
Age years:									
30<	11(64.7)	6(35.3)	4.873	2(11.8)	15(88.2)	0.460	2(11.8)	15(88.2)	2.129
40<30	17(85.0)	3(15.0)	(0.181)	3(15.0)	17(85.0)	(0.927)	6(30.0)	14(70.0)	(0.546)
50<40	9(75.0)	3(25.0)		1(8.3)	11(91.7)		3(25.0)	9(75.0)	
50-60	0(0)	1(100)		0(0)	1(100)		0(0)	1(100)	
Marital status:									
Married	28(77.8)	8(22.2)	5.966	5(13.9)	31(86.1)	0.942	9(25.0)	27(75.0)	2.652
Single	6(75.0)	2(25.0)	(0.113)	1(12.5)	7(87.5)	(0.815)	1(12.5)	7(87.5)	(0.449)
Widowed	0(0)	2(100)		0(0)	2(100)		1(50.0)	1(50.0)	
Divorced	3(75.0)	1(25.0)		0(0)	4(100)		0(0)	4(100)	
Level of education									
Technical secondary school of nursing	17(73.9)	6(26.1)	0.963 (0.618)	3(13.0)	20(87.0)	0.202 (0.904)	5(21.7)	18(78.3)	0.390 (0.823)
Technical institute of nursing	10(66.7)	5(33.3)		2(13.3)	13(86.7)		4(26.7)	11(73.3)	
Bachelor degree of nursing	10(83.3)	2(16.7)		1(8.3)	11(91.7)		2(16.7)	10(83.3)	
Gender									
Male	6(66.7)	3(33.3)	0.307 (0.580)	2(22.2)	7(77.8)	1.086 (0.297)	2(22.2)	7(77.8)	0.001 (0.986)
Female	31(75.6)	10(24.4)		4(9.8)	37(90.2)		9(22.0)	32(78.0)	

***Significant (P<0.05)** χ^2**= chi-square test**

Table (5): Relation between nurses' knowledge & work related data during different phases of educational module intervention among studied nurses (n=50).

Variables	Nurses' knowledge in different module phases								
	Before Module		χ^2 (P) value	Immediate post Module		χ^2 (P) value	3 months after Module		χ^2 (P) value
	Unsatisfactory	Satisfactory		Unsatisfactory	Satisfactory		Unsatisfactory	Satisfactory	
Workplace									
Mansoura university hospital	22(68.8)	10(31.3)	1.273 (0.259)	2(6.3)	30(93.7)	2.783 (0.095)	4(12.5)	28(87.5)	4.675 **(0.031*)**
Mansoura emergency hospital	15(83.3)	3(16.7)		4(22.2)	14(77.8)		7(38.9)	11(61.1)	
Experience years									
5-10 years	12(70.6)	5(29.4)	0.156	3(17.6)	14(82.4)	0.778	4(23.5)	13(76.5)	0.035
More than10years	25(75.8)	8(24.2)	(0.693)	3(9.1)	30(90.9)	(0.326)	7(21.2)	26(78.8)	(0.851)
Training courses related to caring of orthopedic patients with traction or internal fixation									
Yes	4(80.0)	1(20.0)	0.104	1(20.0)	4(80.0)	0.337	2(40.0)	3(60.0)	1.049
No	33(73.3)	12(26.7)	(0.747)	5(11.1)	40(88.9)	(0.562)	9(20.0)	36(80.0)	(0.306)
Working outside									
Yes	2(100)	0(0)	0.732	1(50.0)	1(50.0)	2.849	1(50.0)	1(50.0)	0.952
No	35(72.9)	13(27.1)	(0.392)	5(10.4)	43(89.6)	(0.091)	10(20.8)	38(79.2)	(0.329)

***Significant (P<0.05)** **χ^2= chi-square test**

DISCUSSION:

The findings of this study demonstrate that female nurses are more common than male nurses in terms f nurse demographics. Less than half of all qualified nurses are between the ages of 30 and 40. However, only about a quarter of the nurses in the study were married. Furthermore, less than half of the nurses in this study had completed nursing school. This study found that two-thirds of registered nurses had more than ten years of experience in the field, and more than one-third of registered nurses have five to ten years of experience. Most newly graduated nurses have little experience or training in the management of orthopaedic patients with distraction or internal fixation.

Nearly three-quarters of registered nurses were unsatisfied with their overall knowledge of nursing orthopaedic patients with traction or internal fixation before the training module was implemented. While the majority of undergraduate nurses obtained a satisfactory level of general knowledge, they were assessed immediately after completing the educational modules. The lack of understanding in applying the pre-school module could be attributed to the nurses' lack of education and training backgrounds, as the majority of them had never received any training in orthopaedic patient care. In

distraction orthopaedics, there are also a lack of standards and recommendations for patient treatment. This is supported by (Mahmoud, Hassanien, Sherif, & Soliman, 2016), who state that a lack of practical competence, manual procedure manuals or basic standardised practise, and fundamental theoretical knowledge in the subject may be regarded entire knowledge. This research supports (Gouda, 2017), which found that more than half of the research nurses had an insufficient level of expertise.

Furthermore, the findings contradict (Gautam & Thapa, 2020), which claims that most graduate nurses are more in traction patient care. To ensure safe patient care, all healthcare personnel should have a good working knowledge. In his study, (Mohammed et al., 2020) stated that nurses in orthopaedic wards should participate in training, educational programs, and seminars in order to motivate them and improve their knowledge of orthopaedic patient care management. Because good knowledge leads to good practice, nurse knowledge is critical for enhancing patient care.

The satisfactory level of knowledge following and during the implementation of the educational module, on the other hand, indicated that theoretical teachings in the educational module had a favourable impact on nurses' knowledge. Also, after implementing educational modules (registered nurses participate in educational modules using a variety of teaching methods such as group discussions, handouts, and powerpoints), developing nursing interventions based on the needs of nurses, and completing the source of information through a booklet, knowledge enhancement may be required. These aid qualified paramedics in updating and refreshing their knowledge, as well as orienting and familiar with the care of orthopaedic patients requiring traction or osteosynthesis.

These findings are supported by (Mohmed, Elsaid, & Fahmy, 2020), who found that the majority of the nurses evaluated had inadequate knowledge levels prior to protocol implementation, which improved quickly after the protocol was implemented. Furthermore, the findings are in line with those of (Saad, Ragab, Ali, & Abo-Elfdl, 2020), who found that the majority of the nurses studied had an unsatisfactory level of knowledge prior to the intervention, but that the majority achieved a satisfactory level of knowledge immediately after the intervention. The level of satisfaction intervention revealed the current state of knowledge regarding the management of fixed orthopaedic patients.

The results of this study revealed that there was no statistically significant correlation between nurses' total knowledge scores and their demographic and job-related data characteristics before and after treatment when considering the relationship between nurses' total knowledge scores and their demographic and job-related data characteristics. Furthermore, the study's findings revealed that there was no statistically significant relationship between total scores of nurses' pre- and post-knowledge knowledge and job-related data characteristics, but there was a statistically significant relationship between total nurses' knowledge scores and job-related data characteristics. Workplace follow-up after the instructional module has been implemented.

This finding is in line with (Thandar, 2018), who mentioned the impact of educational programs on nurse performance in skeletal traction patients at Mandalay Hospital in their study, which did not look into the effect of nurses' age, education, or experience on nursing knowledge. The importance of bone health. This finding is also in line with (Mohammed & Weheida, 2015) (Khudhayer & Atiyah, 2019), who found no statistically significant association between nurses' knowledge and their professional qualifications, age, or years of experience. This finding, on the other hand, contradicts (Mohmed, Elsaid, & Fahmy, 2020), which claims that nurses' knowledge is statistically significant in relation to age, education, and experience among the nurses analyzed. Differences in the application of the follow-up protocol are indicated in the post and post over the years.

CONCLUSION:

Nearly three-quarters of the nurses interviewed were dissatisfied with their general knowledge of the care of orthopaedic patients with traction or internal fixation, according to the findings of the current study. Simultaneously, the majority of the nurses tested saw a statistically significant improvement in their knowledge after implementing the educational module.

RECOMMENDATION:

1. Providing continuous inservice education for nurses to update their knowledge related to nursing care of orthopedic patients with traction or internal fixation.
2. Nurses should be encouraged to attend national and international conferences, workshops and training courses related to nursing care of orthopedic patients with traction or internal fixation.

3. Replication of the current study on a large probability sample from different geographical areas of Egypt to raise the efficiency of nurses' performance in caring for orthopedic patients with traction or internal fixation and to achieve more generalized results.

4. Educational Module should be continued to perform for all ages, working experience and education level.

REFERENCES:

Abd-Alla, K. (1990**).** *Assessment the effect of nurses' knowledge and skills on the care given to the*

Orthopedic patient with traction and internal fixation, unpublished Master thesis. Ain Shams University. Faculty of Nursing

Babhulkar, S. &Goel, C. (2020). *Orthopedics for medical graduates-e- book*,1 st ed. India: Elsevier Health Science.

Cheever, H. & Hinkle, L. (2018). *Brunner and Suddarth's textbook of medical surgical nursing*,14th ed. India: Wolters Kluwer Health

Gautam, S. &Thapa, K. (2020). Knowledge and Practice among Nurses of Traction in patients :In A Tertiary Care Center. *Eastern Green Neurosurgery, 2*(1), 47-51.

Giddens, F. &Wilson, F.(2020). *Health assessment of nursing practice* ,7th ed. India: Elsevier Health Science.

Gouda, A. (2017). Nurses' Performance for orthopedic patients with traction or internal fixation. *Port- Said scientific journal, 4*(2),193-218.

Hababbeh, A. & Alkhalialeh,A. (2020). Effect of an educational programe on the attitudes towards
patient safety of operation room nurses. *British Journal of Nursing*,*29*(4).222-228.

Hajbaghery, M. & Moradi,T. (2013). Quality of care for patients with traction in shahid Beheshti. *Archives of trauma Researc*h,*2*(2),85-90.

Khudhayer, F. & Atiyah, H. (2019). Effectiveness of education program on nurses' performance at

Orthopedic Wards in Ghazi Al-Hariri Martyr Hospital for Surgical Specialties. *Research Journal of Pharmacology and Technology*,*12*(4),1865-1870.

Kotwal, P. & Mittal, K. (2020). *Joshi and kotwal's essentials of orthopedics & applied physiotherapy* ,4thed . India: Elsevier Health Science.

Lynn, P. (2018). *Taylor's clinical nursing skills*, 5th ed. USA: Wolters Kluwer Publishers.

Mohammed, E., Elsaid, S., & Fahmy. (2020). Effect of educational protocol on improving nurses'

knowledge and practice regarding skin traction. *Indian Journal of Public Health Research and Development,11*(2),2560-2565.

Mohammed, M., Taha,M., & Moghazy, A. (2020). Nurses performance regarding orthopedic patients with

external fixation at Zagazig University Hospitals. *Egyptian Journal of Health Care*, *11*(1),115-126.

Mohammed,S. &Weheida,S. (2015).Effects of implementing educational program about pressure ulcer control on nurses' knowledge and safety of immobilized patients. *Journal of Nursing Education and Practice,5*(3),1-12.

Mostafa, A., Mehany,M., & Ahmed, M.(2019). Effect of educational program on nurses' knowledge and practice about oxygen therapy. *Assiut Scientific Nursing Journal,7*(18),95-104.

Saad,S., Ragab, M., Ali, A. , & AboEL-fadl, M.(2020). *Effect of implementing guidelines for nurses caring for immobilized orthopedic patients on their performance*, unpublished doctorate thesis. Benha University. Faculty of Nursing

Smith,G., Recio, A., & Griffiths, P. (2017).The measurement frequency and completeness of vital signs in general hospital wards: An evidence free zone, *International journal of nursing studies,74*(14),1-4.

Thandar, M. (2018). *Impact of educational program on nurses'performnce towards patients with*

skeletal traction, unpublished doctorate thesis. Mandalay Nursing University.

Townsend, M. (2021). *The biological basis of modern surgicalpractice*, 21sted. Canada: Elsevier Health Science.

تطبيق نموذج تعليمى لتعزيز معلومات الممرضين تجاه مرضى العظام المعالجين بالشد او بالتثبيت الداخلى

رانيا عبدالخالق جوده، محمد مرسى وهبه،أمل بكر أبوالعطا،شيرين إبراهيم الطاهرى

مدرس مساعد بقسم تمريض باطنى وجراحى –جامعة بورسعيد،أستاذ جراحه العظام كلية الطب -جامعة المنصورة، أستاذ التمريض الباطني و الجراحي – جامعة بورسعيد ،مدرس التمريض الباطني و الجراحي – جامعة بورسعيد

الخلاصة

يعتبر كلا من الشد أو التثبيت الداخلي من أكثر الأوضاع إجهادا بالنسبة لمرضى الكسور.ولذلك فإنه يتطلب ممرضه ذو كفاءة لتلبيه احتياجات هذا المريض ومنع حدوث مضاعفات الناتجة من استخدامهم. ونظرا لهذا الدور الحيوي والمعقد لممرضين العظام فقد أجريت هذه الدراسة الشبه تجريبية بهدف تطبيق نموذج تعليمى لتعزيز معلومات الممرضين تجاه مرضى العظام المعالجين بالشد أو بالتثبيت الداخلي.وقد أجريت هذه الدراسة بأقسام العظام الموجودة بالمنصورة وتشمل مستشفيتين وهم (مستشفى المنصورة الجامعي ومستشفى الطوارئ بالمنصورة) وقد شارك في هذه الدراسة عدد 50 ممرض من الذكور والإناث والمتاحين خلال تسعة أشهر من الأماكن السابق ذكرها. وقد تم استخدام أداة لجمع البيانات وهى استمارة استبيان لتقييم معرفة ومعلومات الممرضين تجاه مرضى العظام المعالجين بالشد أو بالتثبيت الداخلى. ولقد كشفت النتائج أن معظم الممرضين لديهم مستوى مرضى من المعلومات تجاه مرضى العظام المعالجين بالشد أو بالتثبيت الداخلى فور تطبيق النموذج التعليمى. وأوصت هذه الدراسة بضرورة توفير خدمات التعليم والتدريب المستمر لزيادة وتحديث معلومات ممرضى العظام تجاه الرعاية التمريضية للمرضى المعالجين بالشد أو بالتثبيت الداخلي.

الكلمات المرشدة:نموذج تعليمى، معلومات الممرضين، مرضى العظام، الشد، التثبيت الداخلي.