

Nurses Knowledge about Comminuted Fracture in Baghdad Teaching Hospitals

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الخلاصة:

خلفية البحث: السيطرة على العدوى للمرضى الذين يعانون من الكسر المهشم هي واحدة من أكثر أنواع العدوى المرتبطة بالرعاية الصحية شيوعًا. يمكن أن تساعد السيطرة على العدوى في الحد من نسبة انتشار المرض بعد الجراحة، والتعافي لفترات طويلة، وتأخر في خروج المرضى، وزيادة التكلفة. تعد معرفة الممرضين بالتوصيات القائمة على الأدلة ضرورية لتقديم رعاية تمريضية عالية الجودة.

الهدف: تهدف الدراسة إلى تقييم معرفة الممرضين بالكسور المهشمة في مستشفيات بغداد التعليمية، وتحديد العلاقة بين معرفة الممرضين وبياناتهم الديموغرافية.

المنهجية: أجريت دراسة وصفية باستخدام منهجية التقييم مع عناصر الاستبيان لاستكشاف معارف الممرضين من خلال عينة عشوائية غرضية مكونة من (100) (ممرض/ة) تم اختيارهم من خلال استخدام نهج أخذ العينات الغير احتمالي، جمعت البيانات من خلال استخدام الاستبيان والتدوين الذاتي للممرضين و حللت من خلال تطبيق طرق الإحصاء الوصفي.

النتائج: بينت النتائج أن (59٪) تتراوح أعمارهم ما بين 20- 29 سنة بمتوسط + انحراف معياري = 29.47 + 7.269 ، (54٪) من الممرضين ذكور، (69٪) متزوجون، (45٪) تخرجوا من المعهد، (52٪) لديهم 1- 3 سنوات من الخبرة دون حضور الدورات التدريبية. وفقًا لمتوسط التحليل، تشير النتائج إلى أن غالبية (66٪) من الممرضين كانت معارفهم غير مرضية بالكسر المهشم عند مستوى منخفض من المتوسط + انحراف معياري = 1.38 + 0.565. كان هناك تعليم للممرضين، سنوات العمل، والمشاركة في الدورات التدريبية قد ارتبطت بشكل كبير مع معارفهم باحتمالية ≥ 0.05 .

الاستنتاجات: تم استنتاج ان المعارف حول الكسر المهشم كانت منخفضة لدى الممرضين وكانوا قليلي المعرفة بسبب انخفاض مستوى التعليم وعدم وجود دورات تدريبية كافية. **التوصيات:** زيادة من سنوات الخبرة وتدريب الملاكات على أجنحة تقويم العظام من قبل المسؤولين في الردهات يساعد في زيادة معرفة واحتراف الممرضين، توفير الموارد الصحية واستغلال الطاقات الشابة للممرضين مما يساعد بالفعل على تنمية معارفهم وممارستهم.

الكلمات المفتاحية: معارف، الكسر.

ABSTRACT

Background: Infection control for patients with comminuted fracture is one of the most common healthcare-associated infections. The infection control can help reduce to post-operative morbidity, prolonged recovery, delayed discharge and increasing cost. Nurses' knowledge of the evidence-based

recommendations is necessary to provide high-quality nursing care.

Objective: The study aims at assess nurses' knowledge towards comminuted fracture in Bagdad Teaching Hospitals; and determine the relationship between nurses' knowledge and their demographic data.

Methodology: A descriptive study used assessment approach with questionnaire items is conducted to explore nurses' knowledge. By a purposive sample of (100) nurses is selected throughout the use of non-probability sampling approach. Data was collection through the use of a questionnaire and analyzed through application the descriptive and inferential statistic.

Results: Findings illustrated that (59.0%) aged 20-29 years, (54.0%) male nurses, (69.0%) married, (45.0%) institute graduated, (52.0% have 1-3 years of experience without attend training sessions. According to the analysis mean of score, the findings indicate that the majority (66%) of nurses were unsatisfactory knowledge regarding comminuted fracture at low level of mean +S. d. = 1.38+ 0.565.

INTRODUCTION

A comminuted fracture occurs when a bone breaks or splinters into more than two fragments. Fractures of this magnitude occurred following high-impact injuries, such as in car accidents, and it takes a lot of force and energy to break a bone ⁽¹⁾.

A fracture is a total or partial disruption of bone structure that is classified by its form and duration. Fractures happen when the bone is placed under more tension than it can handle. Direct blows, crushing forces, rapid bending movements, and intense muscle contractions can all cause fractures ⁽²⁾. When a bone is fractured, it causes soft tissue edema, hemorrhage through the muscles and joints, joint dislocations, ruptured tendons, torn nerves, and weakened blood vessels, among other things. The force that caused the fracture, or fracture fragments, can damage body organs ^(3,4).

Fracture risk is complicated by a variety of variables, including the patient's age, sex, comorbidities, lifestyle, physiological status, and occupation. Each year, 5.6 million fractures occur in the United States, leading to a 2% incidence rate ⁽⁵⁾. Almost 6000 fractures were treated in an orthopedic

There were nurses' education; years of employment and participation in training sessions have been significantly associated with their knowledge at probability ≤ 0.05 .

Conclusion: It was concluded that the knowledge about comminuted fracture was low among nurses and they were poor knowledge due to low level of education and lack of adequate training sessions.

Recommendation: More years of experience and training the staff on orthopedic wards by local officials help raising professionals' nurses' knowledge. Provide the health resources and exploiting young energies of nurses which indeed helps to develop their knowledge and practice.

Keyword: Knowledge, Comminuted Fracture.

trauma unit in Edinburgh, Scotland, in one year ⁽⁶⁾. In the Scottish case sequence, the average fracture rate was 1.13 percent in men and 1.16 percent in women. In males, there was an interesting bimodal distribution of fractures, with a high incidence in young men and a second increase in men beginning at the age of 60. There was a distribution of fractures in women, with a peak around menopause. Nursing management is a service focused on scientific expertise and abilities, as well as confidence that the nurse will do what is necessary and beneficial to the patient's well-being ⁽⁷⁾.

All types of fractures are associated with substantial morbidity, but hip and spine fractures are particularly dangerous, with a mortality rate of about 24% in the first year following a hip fracture. Furthermore, these fractures trigger major economic resource problems ⁽⁸⁾.

AIMS OF THE STUDY

The study aims at assess nurses knowledge towards comminuted fracture in Baghdad Teaching

Hospitals; and determine the relationship between nurses knowledge and their demographic data.

METHODOLOGY

A quantitative descriptive study was used to test the method with questionnaire items to analyze nurse knowledge related to comminuted fracture in orthopedic wards. A purposive sample of (100) nurses is selected for the non-probability sampling process. The study was spread through three hospitals. These hospitals are hospitals distributed

throughout three places, are AL-Yarmouk Teaching Hospital, Martyr Ghazi AL-Hariri Hospital for Specialized Surgery and Kadhimiya Teaching Hospital. A constructed questionnaire includes (socio-demographic data and knowledge questionnaire items), data was collection through the use of a questionnaire and self-report nurses, through the application the descriptive and inferential statistic.

RESULTS

Table (1): Descriptive Statistic Nurses Demographic Variables

Variables	Rating	F	%
Age/years (Mean+ S.d= 29.47+7.269)	21-30years old	59	59.0
	31-40years old	22	22.0
	41-50years old	12	12.0
	51and older	7	7.0
Gender	Male	54	54.0
	Female	46	46.0
Marital status	Single	22	22.0
	Married	69	69.0
	Widower	9	9.0
Education	Secondary school Nursing	29	29.0
	Nursing institute	45	45.0
	College of nursing	26	26.0
Years of experience	1-3years	52	52.0
	4-6years	28	28.0
	>6years	20	20.0
Training sessions	No trained	38	38.0
	1 session	38	38.0
	2 sessions	9	9.0
	>2 sessions	15	15.0

F=frequency, %= Percentage

Table 1 shows that out of (100) subjects participated in our study aged range from (21-30) years of age and constituted (59 %) of the study sample, due to the work nature of the orthopedic wards need to be young to cover all duties in this units. Gender-related results indicate that male nurses were more than half of study findings and represented that (54 %) out total number. In terms of marital status, the married nurses were predominated, it constituted (69 %), also most of nurses were nursing institute graduated with less years of experience and without trained only one sessions, it composed (45, 52 and 38 %) respectively. It is also showed that most of nurses were did not attend any training session and or with one trained session.

Table (2): Knowledge related to Comminuted Fracture

L.	Comminuted Fracture items	Rating	F	%	M.s.	S.d.	Assessment
1	Broken fracture: It is the breaking of the bone into three or more pieces that occurs as a result of direct external distress and is Difficult to heal due to...	Don't know	67	67.0	1.48	0.745	Poor
		Uncertain	18	18.0			
		know	15	15.0			
		Total	100	100.0			
2	Osteoporosis patients are more likely to have a shattered fracture	Don't know	69	69.0	1.41	0.668	Poor
		Uncertain	21	21.0			
		know	10	10.0			
		Total	100	100.0			
3	The causes of the shattered fracture include: (car accidents, falling from a high place, gunshot, IED issues in battlefields, infection of bones with...	Don't know	60	60.0	1.55	0.744	Poor
		Uncertain	25	25.0			
		know	15	15.0			
		Total	100	100.0			
4	Fractured fractures are considered one of the types of fractures prone to infection and inflammation, as the bone turns into...	Don't know	68	68.0	1.53	0.822	Poor
		Uncertain	11	11.0			
		know	21	21.0			
		Total	100	100.0			
5	Signs and symptoms of a crushed fracture: (sudden severe pain that increases when Moving and when pressing, swelling with a change in the...	Don't know	76	76.0	1.37	0.706	Poor
		Uncertain	11	11.0			
		know	13	13.0			
		Total	100	100.0			
6	Older people are more likely to have a shattered fracture	Don't know	68	68.0	1.50	0.785	Poor
		Uncertain	14	14.0			
		know	18	18.0			
		Total	100	100.0			
7	Complications of fracture fractures include: (abscess, septicemia and bacteremia, suppression of wound healing).	Don't know	65	65.0	1.62	0.885	Poor
		Uncertain	8	8.0			
		know	27	27.0			
		Total	100	100.0			
8	A patient with a fractured fracture is usually treated surgically with external fixation, internal fixation, and the use of a splint to prevent bone movement.	Don't know	66	66.0	1.60	0.876	Poor
		Uncertain	8	8.0			
		know	26	26.0			
		Total	100	100.0			

"F=Frequency, %= Percentage, M. S. = Mean of score, Cut off point (0.66), poor (mean of score 1-1.66), moderate (mean of score 1.67-2.33), good (mean of score \geq 2.34), S. D = Stander deviation"

In light of statistical cut-off point, this table demonstrated the nurses responses were poor knowledge towards comminuted fracture.

Figure (1): Overall knowledge related to comminuted fracture

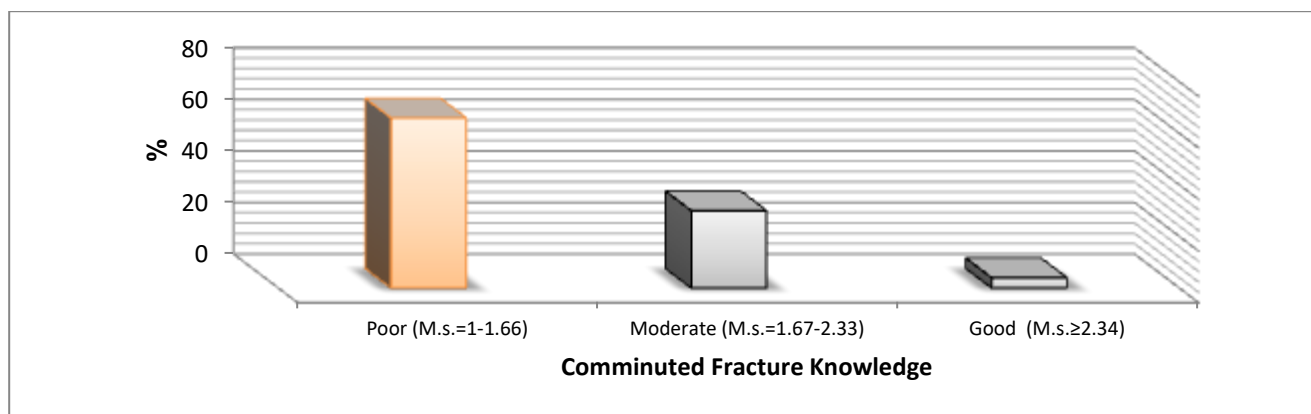


Figure 1 shows overall, according to the analysis mean of score, the findings indicate that the majority (66%) of nurses were poor knowledge regarding comminuted fracture at low level of mean +S. D= 1.38+ 0.565.

Table (3): Relationship between Nurses knowledge and their Demographic Characteristics

Variables	Rating	Knowledge			Total	d.f	Sig.	
		Poor	Moderate	Good				
Age	21-30years old	13	45	1	59	6	χ^2 obs.= 7.075 χ^2 crit.= 12.592 P-value=0.314	NS
	31-40years old	1	19	2	22			
	41-50years old	3	8	1	12			
	51and older	1	5	1	7			
	Total	18	77	5	100			
Gender	Male	8	43	3	54	2	χ^2 obs.=0.840 χ^2 crit.= 5.991 P-value=0.657	NS
	Female	10	34	2	46			
	Total	18	77	5	100			
Marital status	Single	5	17	0	22	4	χ^2 obs.= 02.960 χ^2 crit.= 9.488 P-value=0.564	NS
	Married	12	52	5	69			
	Widower	1	8	0	9			
	Total	18	77	5	100			
Education	School Nursing	9	20	0	29	4	χ^2 obs.= 12.576 χ^2 crit.= 9.488 P-value=0.014	S
	Nursing institute	7	37	1	45			
	College and above	2	20	4	26			
	Total	18	77	5	100			
Years of experience	1-3years	6	45	1	52	4	χ^2 obs.= 17.095 χ^2 crit.= 9.488 P-value=0.002	S
	4-6years	9	19	0	28			
	>6years	3	13	4	20			
	Total	6	45	1	52			
Training sessions	No trained	13	24	1	38	6	χ^2 obs.= 14.178 χ^2 crit.= 12.592 P-value=0.028	S
	1 session	4	32	2	38			
	2 sessions	1	8	0	9			
	>2 sessions	0	13	2	15			
	Total	18	77	5	100			

" χ^2 obs. = Chi-square observed, χ^2 crit. = Chi-square critical, D. f= Degree of freedom, P-value= Probability value, S= significant, NS= non-significant, S= significant, HS= high significant"

This table indicates that nurses' age, gender and marital status have been no significant associated with their knowledge at probability >0.05 . as well as, the nurses' education, years of employment and participation in training sessions have been significantly associated with their knowledge at probability ≤ 0.05 .

DISCUSSION

Knowledge about disease / its risk factor, sign/symptoms and different aspect of prevention and treatment with accurate information help the professional to make informed decision about the health practice and nurses are working in orthopedic wards must have adequate knowledge of basic principles about infection prevention of orthopedic patients to be applied in clinical practice because the nursing care of patients with fracture depends on understanding the scientific principles of this conditions.

Out of (100) subjects participated in our study aged range from (21-30) years of age and constituted (59 %) of the study sample, due to the work nature of the orthopedic wards need to be young to cover all duties in this units. Gender-related results indicate that male nurses were more than half of study findings and represented that (54 %) out total number. These result come because that the majority of the nurses they dealing directly with the patients are from those male because the action with the patients require a high physical activity. In terms of marital status, the married nurses were predominated; it constituted (69 %). This result comes because most of these age groups are the age of marriage, especially after the completion of the study and appointment in the field of nursing.

Most of nurses were nursing institute graduated with less years of experience and without trained only one sessions, it composed (45, 52 and 38 %) respectively. This result come because that the majority of the nurses they dealing directly with the patients are from those with this age group because the action with the patients require a high physical activity and the nurses who are advanced age fail to

dealing with the patients. In addition, the participation in a training session's in-outside of Iraq is diminished due to the political and economic limitation and this is controlled by the policy of the minister of health of Iraq. This result is in agreement with study of Radhi and Tawfiq (2015); in their study found that the majority of the study subjects are technical institute⁽⁹⁾.

It is also obvious among our findings, showed that most of nurses were did not attend any training session and or with one trained session. This result reflects the need of education regarding orthopedic area. Also in El Enein study results 97.5% had no training sessions towards fracture care⁽¹⁰⁾.

Our above findings come in the same line with findings conducted in at orthopedic ward in AL-Najaf AL-Ashraf Hospitals. Their findings showed that the majority of the age group was (23-27) years old (31%). Most of the study samples (61%) were male. Most of them (59%) were married and (52%) were nursing secondary graduate with limited training⁽¹¹⁾.

Comminuted fracture is characterized by the breaking of a bone into several small pieces and is the result of high velocity injuries, such as car accidents, falls from a height, or high-energy injuries with tissue loss caused by fragments from explosive devices on the battlefields. According to the analysis mean of score, the findings indicate that the majority (66%) of nurses were poor knowledge regarding comminuted fracture due to low level of education and limited training. These findings are inconsistent with study conducted in University of Gondar hospital among nurses. Their findings revealed that nurses working at orthopedic areas had good knowledge towards management of patients with comminuted

fracture, due to the nurses were highly qualified and training. As were as, the health resources were available and monitored with orthotics (12).

The reasons for lack of nurses' knowledge regarding comminuted fracture from the researchers' point of view "might be related to lack of continuing educational programs or sessions about comminuted fracture, supervision, continuous evaluation of nurses' practice, and cooperation between multidisciplinary health care team members (nurses-physicians). The researcher point of views is supported with opinion who mentioned that nurses need to improve their knowledge especially nurses' knowledge before, during and health education as responsibility for care of patients lies in the hands of nurses (13), therefore, for nurses to provide high quality care and function effectively, they must have an adequate knowledge that they have actually used in practice" (14).

Findings indicate that nurses age, gender and marital status have been no significant associated with their knowledge at $p\text{-value} > 0.05$. As well as, the nurses' education, years of employment and participation in training sessions have been significant associated with their knowledge at ≤ 0.05 respectively. This results consisting with systematic review and met synthesis of qualitative studies, Depicted findings were lack of information from health care providers regarding fracture management were

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associated with their education and training, as well, the years of employment as an important factors in those wards (15).

The qualification and training program significantly increased fracture knowledge in cohort of nurses. Additionally, nurses indicated they were more likely to pay attention to their own bone health as a result of attending the training (16). The best practices in the management of orthopedic trauma were significant associated with health care their qualifications and training (17). Also, it is found that there were significant relationship between nurses knowledge concerning fractured patients and their training sessions at $p\text{-value} < 0.05$ (18).

CONCLUSION

It was concluded that the knowledge about comminuted fracture was low among nurses and they were poor knowledge due to low level of education and lack of adequate training sessions.

RECOMMENDATIONS

More years of experience and training the staff on orthopedic wards by local officials help raising professionals' nurses' knowledge. Provide the health resources and exploiting young energies of nurses which indeed helps to develop their knowledge and practice.

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