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Original Article

Effect of Nursing Guidelines on Orthopedic Nurses Knowledge regarding Safe Patient Handling and Movement

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1.ABSTRACT

Background: Safe patient handling and movement is very important part of the organizational culture. It is basic element and guide to improve nurse knowledge. **Aim of the study**: Evaluate the effect of nursing guidelines on orthopedic nurses' knowledge regarding safe patient handling and movement. **Design:** Quasi-experimental research design was utilized in this study. Setting: This study was conducted in orthopedic departments at Mansoura University Hospital. **Subject**: All available number of nurses (50) working in orthopedic department. **Tools**: One tool structure questionnaire sheet was used in this study. **Results**: The present study revealed that more than half of studied nurses' had fair knowledge pre intervention compared to above two third had good knowledge post intervention. **Conclusion**: It can be concluded that there was a positive effect of nursing guidelines on improving nurses' knowledge regarding safe patient handling and movement. **Recommendations**: This study recommended the availability of written guidelines regarding safe patient handling and movement in orthopedic department.

Key words: Nursing Care Guidelines, Orthopedic disorders, Safe Handling and Movement.

2.Introduction:

Safe patient handling and movement is broadly described the transporting or assisting of an affected person by using hand. (Satusky, 2021). The nurse had an important role in handling and movement the patients with orthopedic disorders such as fracture, traction and external fixation to improve patient's outcomes and nurses' knowledge (Link, 2018).

The orthopedic nurse is the first line of contact with patients' for applying safe handling and movement guidelines. The implementation of these principles necessitates many aspects of care, such as evaluation, infection control, and body mechanics, apply principle of handling and steps of how to move (Kurowski & Punnett, 2016).

False handling and movement lead too many complications for nurses' that may reflect in varying degrees of functional disability and decrease competence level of care (Boocock et al., 2018).

Significance of the study

Handling and movement is the main procedure for all patient in any hospital. Training and education considered to be the key point to improve nurses' competencies. Lake of availability of written guidelines regarding handling and movement in the orthopedic departments of the hospital, and clear policy regarding this issue, all of these factors may affect nurses' knowledge in workplace.

Aim of the study

The aim of this study is to evaluate the effect of nursing guidelines on orthopedic nurses' knowledge regarding safe patient handling and movement.

Research Hypothesis:

H1: Nurses' Knowledge improved after implementation of nursing guidelines.

3.Methods:

3.1.Research Design: Quasi-experimental research design was utilized in this study.

3.2Settings: This study was carried out in the four general orthopedic departments (2, 13, 16, and 19) at Mansoura university hospitals. The departments (2 and 19) are located on the ground floor and the departments (13, 16) are located on the fourth floor.

3.3Subject: A convenient sample of all available number of nurses' (50) affiliated to the previously mentioned setting over a period of 6 months that started from July 2019 to December 2019 using pre and posttest.

3.4.Tools:

Tool 1: Structure questionnaire sheet

This tool was developed by the researchers after reviewing recent related literatures to collect

baseline data and assesse nurses' knowledge. It was divided into two parts:

Part 1: Demographic characteristic:

This part was designed to collect the personal data such as age, education level, years of experience, and training or workshop about handling and movement.

Part 2: Nurses' knowledge regarding safe patient handling and movement:

This part was used to assess nurses' knowledge through educational instruction regarding safe patient handling and movement such as definition, purpose, benefits, principal devices needed for patient transfer, how to move patients with orthopedic disorders such as fracture, traction and external fixation, and complication related to malpractice by using pre and posttest. It was calculated as each question had one answer point, each correct answer was given one degree, while wrong or missed answer was given zero. The total knowledge score was 20 degrees then were adjusted out of (0%- 100%) and graded as follow:

Scoring system:

Knowledge level		
Knowledge Scale	**Knowledge Score**	**%**
Good	>15	>75.0
Fair	10- <15	50.0- <75.0

Sadoughi, Hemmat, Valinejadi, Mohammadi and Majdabadi, 2017).

3.5.Ethical consideration and human's rights:

In order to undertake this study, the proposal was submitted for acceptance from Research Ethical Committee, Faculty of nursing, Mansoura University and the authorities or directors at Mansoura university hospitals. An informed consent was obtained from nurses who accept to participate in the study after explaining the aims, benefits, and the nature of the study. The participants were informed that their participation being voluntary.

3.6.Validity and Reliability:

The developed tool was tested for content related validity by 5 experts from the faculty of nursing who reviewed the tool for clarity, relevance, understanding and applicability for implementation. Reliability was used to evaluates the internal consistency of the tool using Cranach Alfa = 0.818. The necessary modification was done.

3.7.Pilot study:

It was carried out on 10% (5) of available nurses before starting data collection and they were excluded from the total studied sample.

3.8.Data collection:

1. The data were collected through personnel interview individually for nurses in orthopedic unit.
2. Demographic data was collected by using tool 1 part 1, questions related to their knowledge was answered using tool I part 2 as pretest.
3. Educational instruction regarding guidelines of safe patient handling and movement for patients with orthopedic disorders was carried out using colored booklet in form of two sessions:

- First session: definition, importance, and preparations that nurses must be carried before handling and movement.
- Second sessions: guidelines regarding how to hand and move patient with orthopedic disorders such as fracture, external fixation and traction.

4. Interview the nurses' as a group and the time consumed for educational sessions was 30-40 minutes by using color booklet and discussion.
5. Posttest was taken to evaluate effect of educational instruction using tool I.

3.9.Statistical analysis:

Data were analyzed with SPSS (statistical package for social science) version 22.0. The quantitative data were viewed as number (N) and percent (%). T-test was used to check the difference and the p value of less than or equal 0.05 indicates a significant result while p-value of more than 0.05 suggested a non-significant result. Cranach alpha was used to measure internal consistency.

4. Results

Table (1) presented that the majority of studied sample were female (94.4%). Concerning level of education more than half of the nurses were technical institute (52.0%). As regarding years of experience more than half of the studied nurses' (54%) had experience more than 10 years. Moreover, it was found that more than two thirds of the studied sample (70.0%) had general workshop compared to 5.4% had special workshop on handling and movement.

Table (2) exposed that the average score of total knowledge of studied nurses' about safe patient handling and movement pre intervention was (12.18 ± 2.83) and post intervention it increased to be (19.20 ± 2.06) with highly significant difference P<0.001).

Figure (1) illustrated that more than half (56, 0%) of studied nurses' had fair knowledge pre intervention compared to above two third (78, 0%) had good knowledge post intervention with highly statistically significant (P<0.001)

Table (1) Demographic characteristics of the studied nurses N (50).

Characters	No	%
Gender		
• **Females**	3	6.0
• **Males**	47	94.0
Education		
• **Secondary diploma**	24	48.0
• **Technical institute**	26	52.0
Years of experience		
• **< 5 years**	15	30.0
• **5-10 years**	8	16.0
• **>10 years**	27	54.0
Attending training		
• **Yes**	22	44.0
• **No**	28	56.0
Number of workshops		
• **1**	35	70.0
• **2**	2	4.0
• **None**	13	26.0
Type of workshop N (37)		
• **Special workshop on handling and movement**	2	5.4
• **General workshop on nursing**	35	94.6
Last workshop		
• **< 5 years**	16	43.4
• **5-10 years**	20	54.0
• **>10 years**	1	2.6

Table (2): Total knowledge average score of studied nurses' pre and post intervention N=50.

Total knowledge	Pre intervention	Post intervention	Paired t test	P Value
Min – Max	7.0 – 18.0	7.0 – 20.0	t = 18.175	P <0.001
Mean ± SD	12.18 ± 2.83	15.36 ± 2.24		

Figure (1) Levels of total knowledge score of studied nurses' pre and post intervention N (50).

5.Discussion

Safe patients handling and movement is very important policy in any hospital to protect nurses and patients (Olinski & Norton, 2017). Creating a culture of safe manual patient handling and movement thought to have a positive impact on nurses' knowledge and practice and reduce the risk of complications. (Humrickhouse & Knibbe, 2016, Garg & Kapellusch, 2012).

Regarding demographic characteristics, the majority of studied nurses' were female. This result in the same line with Weaver and Lindgren, (2017), Samaei, Mostafaee, Jafarpoor & Hosseinabadi, (2017) who stated that the majority of studied nurses were female. On other hand, this result disagrees with Akbari et al., (2017) who state that more than half of the study was male. This difference may be due to variation in the study sitting.

Concerning education, more than half of the studied nurses were technical institute, this finding in accordance Noble and Sweeney, (2018) who reported that mostly of studied nurses were technical institute. This result disagrees with Akbari et al., (2017) who showed that more than half of studied sample were school degree and diploma. These differences may be due to one baccalaureate degree in each of orthopedic department responsible for administration as a head nurse.

In relation to years of experience, the result of this study represented that more than half of the studied nurse had experience more than ten years. This result interferes with Atay, Vurur and Erdugan, (2016) who stated that the majority of experience years of studied nurses' less than three years. This differences may be related to distribution of old nurses in general departments, while the newly recruited nurses' are distributed in vital and sensitive places such as intensive care unit and operating room.

In relation to training, it was found that more than two thirds of the studied nurses' had workshop on general nursing. This finding disagrees with Lee and Gershon, (2015) who stated that the majority of studied sample received training related to handling and movement. This may be attributed to mostly of training program carried out on basic nursing care not according to assessment the needs in each department.

Regarding to total knowledge, the result of this study presented that highly significant difference post intervention of average score of total knowledge and the majority of the studied nurses' had good knowledge post intervention with a highly statistically significant this consistent with Antony, Ir, Mohanan and Pushkaran, (2019) who stated that more than half of studied nurses' had good knowledge. The result of present study disagrees with White Heisel, Canfield and Young Hughes, (2016) who showed that low significance difference of knowledge pre and post intervention. It may be attributed to the use of multiple teaching methods, development of nursing intervention based on nurses' assessment needs, the clarity and simplicity of the instruction and using attractive audiovisual aids.

6.Conclusion

Based on the findings of the current study, it was concluded that:

- Improvement of level of total knowledge regarding safe patient handling and movement post intervention.

7.Recommendation

In the light of the current study, it is recommended that:

- Continuous nursing education and service training programs for newly employed nurses' to empower them with knowledge for safe handling and movement.
- Availability of written guidelines regarding safe patient handling and movement in orthopedic department.

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