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Impact of restraint responsibility educational program on critical care unit nurses knowledge in AL-Hillah teaching hospitals

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***Abstract*---**Background: Nurses are closely involved in caring for restrained patients. Major attention must be focused on nurse's knowledge and performance regarding patient restraint because nurses have the major responsibility for providing patients safety without causing complications. Objective: To evaluate the impact of restraint responsibility educational program on critical care nurse's knowledge in AL-Hillah teaching hospitals. Methodology: A quasi-experimental study design selects to achieve the study objectives from the period between (19. Oct.2021 to 30. May.2022). Non- probability (purposive) sample of (64) male and female nurses was selected, the original sample was divided to two groups, the first group contain (32) nurses act - as a control group who did not receive the content of restraint responsibility educational program and the second group includes (32) nurses selected to play as an experimental group who exposed to a planned session of restraint responsibility educational program, special questionnaire prepared to collect the data. Correlation coefficient used as a statistical method to achieve the reliability which recorded (r-0.91). Result: The results shows that the higher percentage 18(56.3%), 19(59.4%) of both groups were between (24-27) age group, 18(56.3%) in the experimental group were male, while 18(56.3%) of control group were female. Most of the participants in both group 22(68.8%) and 16(50.0%) were married. Most of the response (pre and posttest) among control group were indicated poor knowledge related to restraint responsibilities. Conclusion: All the responses in post- test among experimental group who attending restraint responsibility educational program in the critical care unit during the session recorded improve of knowledge, the educational program act positively upon the nurse's knowledge regarding restraint responsibility.

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Introduction

The primary nursing responsibilities for temporally disabled patients are preventing and protecting them from harm, (80) percent of intensive care (ICU) patients may develop agitation throughout their stay, according to Jacobi et al., 2018. Use of physical or chemical restraint may be viewed like a simple solution to this issue; however, use of chemical restraint has been associated with a risk of sedation-related psychotic symptoms (Nirmalan et al., 2004), in this setting, physical restraint (PR) has been usually viewed as a means of protection and to prevent treatment interference (Happ, 2000). Protecting the patients is the most commonly cited reason for utilizing physical restrain. In other words, "patient-oriented reasoning" consist of trying to prevent harm to patients or others in the incidence of violent behavior. Occasionally, to manage patient behavior in cases of changed mental status and disorientation, and also to prevent patients avoid wandering, restraints are used (Sadock, 2015).

Approximately (80) percent of the critically ill patients referred to different types of icu may need physical restraints due to fluctuating levels of consciousness during the length of their ICU stay. (Phillips.2013). Nurses are directly involved in both the decisions to restrain and the actual restraint. At the same time, nurses have a duty and obligation doing no harm (nonmaleficence) and also to reinforce good (beneficence). This indicates that health care personnel must ensuring that they have fulfilled with all legal and ethical requirements; otherwise, they may be facing assault claims (Hine,2007).

Nurses are primarily responsible of adjusting the care plan according to hourly assessments of patient's responses to therapy in order to eliminate the patient from restraints. In addition to examining the patients about potential physical and/or psychological impacts of restraint, their responsibilities also include frequent position changes and help with activities of daily living. In addition, they must look for additional reasons of agitation and treated them accordingly, notify relatives about the need for restraints, and reassess orders every four hours (Maccioli et al.,2003).

Objectives

1. To assess critical care nurse's knowledge regarding their responsibility toward restraint.
2. To evaluate the impact of educational program on nurse's knowledge.

Methodology

A quasi-experimental study design selects from the period between (19. Oct.2021 to 30. May.2022). This study was conducted in the critical care units in Al- Hilla teaching hospitals, which includes Imam Al Sadeq teaching hospital and Al – Hilla surgical teaching hospital.

A convenient sample of (64) male and female nurses with varies educational level was selected from (134) nurses who representing approximately all nurses who involved in the direct care of patients who admitted to the critical care units in Al-Hilla teaching hospitals, non- probability (purposive) sample were assigned to achieve the objectives of the study. The original sample was divided to two groups, the first group contain (32) nurses act - as a control group who did not receive the content of patient restraining program and the second group includes (32) nurses selected to play as an experimental group who exposed to a planned session of patient restraining program, (25) nurses selected to participated on the need assessment and the pilot study, while the remain number distributive as (12) didn't involve in the directly patient care and (33) of nurses how distributed between morning and evening shift were refuse to participate in the study. In order to achieve the objectives of the study special questionnaire with Arabic and English language were prepared after a comprehensive review of related literature in the field of interested phenomena content of (11) multiple choice question, special educational session prepared by using power point presentation.

Data Collection

The related data which collected from nurse's by self-report method, each nurse need about 10-40) minutes to complete the questionnaire items, overall (64) nurses selected to participate in the study, divided in to two group, the control group were (32) nurses who provide direct care for critical care units' patients. Second group assigned as experimental group (32) nurses, the pre-test questionnaire distributed among them at the same period according to their availability in the critical care unit. The post-test for the control group collected after two weeks from their pre-test, while the experimental group started to attend the educational session which prepared to present the content of the patient restraining educational program, small group session method perform were as suitable teaching strategy depending upon nurses duty according to shift schedule, the session takes about (40-60)min. The post-test collected two weeks later after the program session finished. The data collection consumed nearly about (40) days, started from 15. Feb to 26. Mar.2022.

Ethical consideration

A humanity face or respect of nurses personality as human is considered in the current study as issue of ethical consideration. The researcher follows certain steps in order to achieve the ethical consideration and obtain permission from the nurse him/her-self:

1. Nurses who participate in the study has given a written informed consent.
2. After explaining the purpose of the study, and explaining that all the information will kept secured used only of the study purposes.
3. Each participant reviews the informed consent that invite him/her to participate in study voluntary.

Results

Table (1) Distribution of the study sample (experimental and control group) related to their demographical characteristics

Demographic Data	Rating and intervals	Experimental group		Control group	
		Frequency	Percent	Frequency	Percent
Age / Years	Less than 24	6	18.8	9	28.1
	24 – 27	20	62.5	19	59.4
	More than 27	6	18.8	4	12.5
	Total	32	100.0	32	100.0
Gender	Male	18	56.3	14	43.8
	Female	14	43.8	18	56.3
	Total	32	100.0	32	100.0
Marital Status	Single	10	31.3	16	50.0
	Married	22	68.8	16	50.0
	Separated	0	0	0	0
	Divorced	0	0	0	0
	Widow	0	0	0	0
	Total	32	100.0	32	100.0
Education Status	Secondary school nursing	3	9.4	3	9.4
	Diploma	13	40.6	11	34.4
	Bachelor	16	50.0	18	56.3
	Post-graduate	0	0	0	0
	Total	32	100.0	32	100.0
Residency	Rural area	14	43.8	16	50.0
	Urban area	18	56.3	16	50.0
	Total	32	100.0	32	100.0

Table (2) Distribution of the study sample (experimental control group) related to employee characteristics.

Items	Rating and Intervals	Experimental group		Control group	
		Frequency	Percent	Frequency	Percent
Working shift	Morning	0	0	22	68.8
	Evening	32	100	10	31.3
	Total	32	100.0	32	100.0
A tendency of special courses related to restraints	No	24	75.0	25	78.1
	Yes	8	25.0	7	21.9
	Total	32	100.0	32	100.0
Number of courses	1	8	100	4	57.1
	2	0	0	2	28.6
	4	0	0	1	14.3
	Total	8	100	7	100.0

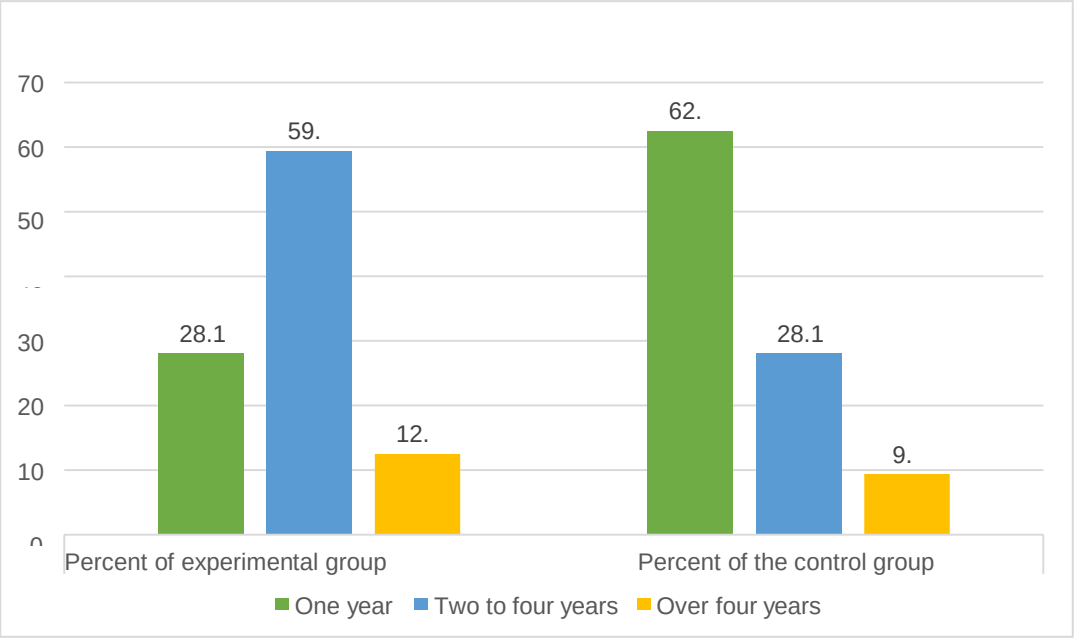

Figure (1): Nurses years of experience

Table (3) Responses of the study sample (experimental and control group) in their pre and post-test related to the nurses knowledge about responsibility of restrain.

N	Items	Experimental group		Control group	
		Pre-test Mean ± SD	Post-test Mean ± SD	Pre-test Mean ± SD	Post-test Mean ± SD
1.	Restraint's should be removed and patient repositioned every:	1.47 .507	1.88 .336	1.41 .499	1.69 .471
2.	Nurses can apply restraints when they think they are needed.	1.00 0.00	1.59 .499	1.25 .440	1.13 .336
3.	Restraint is ordered by the physician.	1.38 .492	2.00 0.00	1.56 .504	1.44 .504
4.	A nurse in a long-term care institution decides that patient need vest restraints. The patient refuses to the vest restraints being applied. What nursing intervention should be carried out?	1.16 .369	1.94 .246	1.25 .440	1.19 .397
5.	A nurse is known that most long-term care facility patients reject to use the hip protective gear. Why does the patient refuse to utilize this protective garment?	1.56 .504	1.81 .397	1.31 .471	1.66 .483

6.	A nurse is attempting to prevent a disoriented patient from disconnecting a feeding tube in accordance with the rule of "least restrictive" What should the wrist restraint be replaced with?	1.13 .336	1.97 .177	1.25 .440	1.22 .420
7.	The nurse assesses that the client may need a restraint and recognizes that:	1.34 .483	1.59 .499	1.19 .397	1.44 .504
8.	The joint commission issues a guidelines regarding the use of restraint. In which case is a restraint properly used?	1.25 .440	1.88 .336	1.31 .471	1.28 .457
9.	When implementing the use of restraints on a hospitalized client, the nurse should:	1.03 .177	1.75 .440	1.25 .440	1.06 .246
10	The nurse works in intensive care unit and understands that the use of restraints may be useful for ensuring patient safety. Which patients would need a temporary restraint? Select all that apply.	1.41 .499	1.91 .296	1.50 .508	1.41 .499
11	The nurse must place a wrist restraint on a client. The client tells the nurse that he does not want to wear the restraint. Which is the best nursing action to implement at this time?	1.16 .369	1.38 .492	1.09 .296	1.09 .296
	General mean and SD	1.26 .183	1.79 .194	1.31 .123	1.33 .216
	Assessment	poor	good	poor	poor
N		32	32	32	32

M.S. (mean of scores = 2), cut off point (0.5), (poor knowledge) (M.S. 1-1.49), (good knowledge) (M.S. 1.50-2)

Discussion

The result in table (1) which presented the demographical characteristics shows that the higher percentage of the study sample (experimental and control) 20(62.5%), 19(59%) were between the age (24-27), 18(56%) of experimental study group were male, where 18(56%) of control study group was female, the most of the experimental group 18(68.8%) was married, where half of the control study group 16(50%) was married. higher percentage of educational levels shows that most of the nurse in the both groups (experimental and control) were bachelor's degree holder, most of the experimental group 18(56%) were urban area resident while half of the control group 16(50%) were urban area and the other half were rural area resident.

This results agree with the a study conducted by Nagla H , 2017, which find out the critical care unit nurses who participate in the study were between age group (22-28) years , married , (97 %) bachelor degree holder, they are between (1-5) years of experience in the critical care unit , while their gender were female .The male nurses is the most participate in this study because the workload of the critical unit and the policy of the hospitals prefer male nurses in all shifts morning and evening.

The table (2) shows that most of the nurses who participate in the experimental group 19(59%) were with two to four years' experience in nursing and 16(46.9%) with two to four years of experience in critical care units, while the control group 20(62.5%) were with one years' experience in nursing and 2(65.6%) were have one years' experience in the critical care unit.

The table also show that the all the member of the experimental group 32(100%) were working night shift, while the highest percentage of the control group were working in morning shift. Because the stressful and complex of the critical care unit environment with complicated cases who need urgent intervention for this reason the morning shift nurses cannot involve in two educational program session because of the work load related to admission and discharge, while evening shift nurses have along work time (18hr) which let them to involve in the educational sessions which tack (40-60) min for each session. The most percent of the nurses in both group (experimental and control) didn't attend any courses related to restraint.

The findings of this study were similar with those of Cannon et al. (2001) and Hafez (2011), who found that the majority of nurses had not received any specialized education or training toward the usage of physical restraint application. A current study's findings probably regarding the absence of specific protocols governing the usage of physical restraints in critical care units and other critical area.

Following the adaptation of two-hour in-service educational programs, the current study reveals a positive and significantly positive influence on the improvement of nurses' existing knowledge. There was a statistically significant difference between the groups' pre-test and their post-test knowledge levels after the education program was implemented. This result was consistent with the majority of the results that educational programs in this field have obtained.

A study of 40 nurses found that 57percent of them had not attended in any specific practical training programs and that more than half of nurses had no idea whether their hospital had a policy requiring it to be included in PR training programs. According to this study, the most of nurses didn't receive any specific PR education or in-service training, which had a negative impact on nursing practices (Cannon et al.,2001).

A deficiency of information would negatively affect the nursing care these patients receive. Furthermore, it may result in complications between patients, which may result in legal issues for the nurse giving care. This results go within a study

carried out by Mamun and Lim,2005, in order to assess nurses' knowledge about physical restraints in Singapore, which found that most of the participants have insufficient knowledge regarding restraint.

A study carried out by Huang et al.,2009, in order assess the effectiveness of education program of physical restraint on nurse's knowledge, attitude, and practice in Taiwan, they performed a 90-minute in-service instruction program. Following 2 weeks, participants demonstrated a significant development in their knowledge of the factors that contribute to limitation the usage of physical restraints. Likewise, Choi and Kim (2009) examined the development in nurses' knowledge 6 weeks following the educational session and reported a significant improvement.

Table (4) shows that the nurses knowledge for both groups (experimental and control) about nurse's responsibility regarding patient restraint were low for the most of the pre-test, their post-test results show high level in mean for the experimental group (1.79), while the control group results shows a constant mean (1.33). the value of the nurse's knowledge about nurse's responsibility regarding patient restraint increase for experimental group by time as a compared with the control group, after the educational program sessions. Higher score means better knowledge. According to the findings, nurses need physician orders to use physical restraints, and this order should be updated at different frequencies depending on the type of restraints; for example, every 24 hours with the time and date mentioned (Maccioli et al., 2003).

In addition, one-third of nurses agreed that the nursing staff should be in control of determining when to initiate PR (Azab & Negm, 2013). This may be due to the fact that nurses consider themselves to be accountable for patient restraint because they spending more time than doctors at the bedside (Cho et al., 2006). Additionally, it was discovered that PR is also utilized to restrain the mobility of confused and angry patients, particularly if there is a shortage among nursing staff (Perez et al., 2019). Similarly, according to De Jonghe et al. (2013), reported that physical restraints were typically initiated and discontinued with absence of formal physician orders and well specified guidelines.

Furthermore, Choi and Song (2003) showed that 94 percent of restraints utilization were initiated by nursing staff rather than from physicians. This demonstrates that the nurses routinely initiate and discontinue physical restraints depending on their own initiative and clinical decision, which might place nursing staff in a problematic situation during inappropriately initiate and discontinue physical restraints.

Physical restraint shouldn't be used without a doctor's formal permission and without maintaining a record of the situation (Hakverdiog˘lu et al.,2006). A study conducted by Akansel,2007, demonstrate that 84.1percent of the nurses utilized physical restraints on patients without the order of the physicians. In the study conducted by Zencirci in 2007, 53.5percent of the nurses believed that a doctor's order not been required for apply physical restraint, while 98.4% of respondents said that the physical restrain have been used without a doctor's orders in their clinics. According to Es er et al.,2007, shows the majority of decisions about the

usage of physical restrain found to be made by nurses. The findings of this study are surprising in that they show that in our country, physical restraint are used without a physician's order.

Furthermore, considering our findings, it is possible to recommend that in circumstances where a patient's safety is endangered, Alternative measures should be attempted first, and if they don't function, physical restraints should only be utilized after the team has considered the requirement and hazards of using them. In a study conducted by Hakverdiog lu et al.,2006 in order to assess critical care nurses' knowledge regarding physical restraints, it was revealed that nurses were unaware of other measures that should be used before using physical restraints.

Environmental, physical, psychological, and physiological treatments, in addition to nursing care methods, have been categorized as the alternatives for restraints (Sze, 2012). Numerous alternatives for PR were proposed in the medical field, including maintaining company and supervising, obtaining physical and distracting activity, and playing quiet music in the background, environmental modifications, monitoring the effects of medications that may be causing an agitated state in a patient and applying care for providing the specific needs of each patient (Suen et al., 2006).

However, in study performed by Zencirci,2007 It was found that 90.6percent of nurses did not maintain documents of physical restraint uses, and that 53.3percent of those nurses did not maintain records because they did not think it was essential as well as the fact that there was no area on the registration form related to this specific subject. According to the findings of another study that was carried out by Akansel.,2007, it was found that 93.7percent of nurses did not maintain records on the usage of physical restraints.

This indicated that physical restraints were initiated and discontinued based on the personal clinical assessment of the nurses. Similar to some other study conducted by Suen et al. 2006, which found that the participants showed a deficiency of knowledge about alternatives for physical restraints. The previous study may be capable of explain the decrease with in incidence of complications among patients who were restrained to improvements in nursing practice that became appropriate and were based on knowledge that was obtained to a satisfactory level after the program. Therefore, the enhancements of vital signs, as well as the decreases in the frequency of tissue laceration and infectious were most surely due to the learned practice of removing the restraint at intervals every two hours, in addition to the nurse performing massages and range-of-motion exercises on the joints that were being restrained. The results are similar to results of Lewis et al., who revealed that such nursing care practices contributed to significant advancements in physically restrained patients (Lewis,2007). A study carried out by Suliman et al.,2017, which show that only 17.3% self-report checking the site of restraint every 2 h; and 22%, inspecting the skin of the patient with PR.

Conclusion

The prepared educational program has affirmative effect on the critical care nurse's knowledge.

Recommendations

Un educational sessions may be planned to improve the nurse's knowledge regarding to the legal and ethical principles which should be followed by the nurses who involve in the direct care of the critical patients during restraints procedures.

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