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Assessment of Nurses' Performance Regarding Physical Restraining in Intensive Care Units

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ABSTRACT

Background: Physical restraint is used to prevent therapy discontinuation, patients' falls or injuries, and to protect patients from removing tubes, drains, or any other medical equipment connected to their body.

Aim: The aim of this study was to assess nurses' performance regarding physical restraining in intensive care units.

Design: A descriptive exploratory design was utilized in this study.

Subject: A convenient subjects of all available nurses (N=60).

Setting: The study was carried out at general intensive care unit in Al-sheikh Zayed general and specialized hospital, at 6 October City in Giza Governorate.

Data collection tools: Three tools were used for data collection: (I) Self-administrated interview questionnaire related to physical restraining which included (a) Nurses' personal characteristics; (b) Nurses' knowledge and feedback related to physical restraining. (II) Physical restraint observational checklist. (III) Factors affecting nurses' performance regarding use of physical restraint.

Results: The study showed, two-thirds (60%) of the studied nurses had a poor level of knowledge, nearly three quarters (73.3%) of the studied nurses had a poor level of practice regarding physical restraint; and there was a highly statistically positive correlation between total of physical restraints knowledge and practice among the studied nurses.

Conclusion: The present study concluded that two-thirds of the studied nurses had an unsatisfactory level of general knowledge regarding physical restraint. Nearly three quarters of the studied nurses had a poor level of practice regarding physical restraint. Recommendations: In-service training programs are based on best practice guidelines for nurses working in ICU and integrating the physical restraint protocol into the plan of care to replace the traditional nursing care plan.

Keywords: *Intensive Care Units, Nurses' performance, Physical Restraining*

INTRODUCTION

Restraint is the direct application of physical force to restrict patient's freedom of movement. Physical force can be human, mechanical devices, or a combination. It should be used only when essential to prevent the patient from harming himself, staff, or other patients (JCAHO, 2019). Restraining implies "limiting, restricting, or keeping under control," and restraint is the act of preventing from doing, showing, or expressing anything. Three distinct forms of restraining methods are referred to as restraints in the human services. Seclusion is a kind of constraint and is not a part of the "time-out" continuum (Philips, 2020).

Up to 75% of the mechanically ventilated patients admitted in an intensive care unit, are restrained to control the patient.

Clinical justification to use PR in intensive care units is to support ongoing treatment such as accessing invasive medical devices and to avoid unplanned treatment intrusion (Duwadi, et al., 2019).

Delirium and agitation are the common predictors for using physical restraints in hospitalized patients (Balci & Arslan, 2019). Patients with these alterations become easily confused about their surroundings, trying to get out of the bed, remove the connection lines, intravenous cannula, oxygen lines, and urinary catheters. These actions caused unintended extubating, the removal of supportive equipment, and ultimately, a longer stay. This could explain why this population uses restraints more frequently to prevent falls and self-injury. (Cui, et al., 2021).

In critical care units, physical limitations are utilized to support ongoing therapy, like access to invasive medical equipment, to avoid treatment interruptions that weren't planned for and potential life-threatening consequences while ensuring safety and the desired prognosis. Without a doubt, the use of restraint techniques in ICUs is for the protection of the patients, reducing the possibility of intentional as well as unintentional removal of medical equipment. Help the patient who refuses to cooperate with bedside procedures as well (Duwadi, et al., 2019).

Application of physical restraint must adhere to a methodical process of decision-making that is divided into three sub phases: evaluating the patient's condition and anticipating its progression; identifying the defining moments; and continuous monitoring the situation while evaluating the initial decision (Guenna, et al., 2021). It's becoming difficult to decide whether to use physical restraints. Thus, regulations and protocols should include restraint of any kind and apply it effectively to prevent biases and errors that may develop (Balci & Arslan, 2019).

Nurses in critical care are the lifeblood of any intensive care unit, having an adequate staff is essential to a patient's rehabilitation. Also, findings showed that there was a greater use of physical restraints when there was a lower nurse-to-patient ratio for critical care and no protocol in place to direct decision-making. This shows that the decision to use physical restraints is dependent on considerations other than safety concerns, such as the ability to care for several difficult patients (Freeman, et al., 2019).

Aim of the study

This study aimed to assess nurses' performance regarding physical restraining in intensive care units through the following objective:

Assess nurses' performance regarding physical restraining in intensive care units.

Research questions

This study was conducted for answering the following questions:

What is the level of nurses' knowledge regarding physical restraining?

What is the level of nurses' practice regarding use of physical restraining?

What are the factors affecting nurses' performance regarding use of physical restraining?

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Subject and Methods

The technical design includes setting, subjects and tools for data collection.

Research Design

This study used a descriptive exploratory design. To accomplish the study's objectives and respond to the research questions, an exploratory descriptive method was used. The investigator will benefit from describing and recording a situation's elements as they happen. Also, this approach aids in creating a database for future studies. (Rahi, 2020).

Setting

This study was conducted in the general intensive care unit in Al-sheikh Zayed general hospital and the general intensive care unit in Al-sheikh Zayed specialized hospital.

Subjects

A convenient sample of all available nurses about (60) staff nurses are working at the previous mentioned units.

Tools of Data Collection

The data collected through using the following tools:

Tool (I): Self-administered interview questionnaire related to physical restraining: It was developed by the investigator based on related literature to assess demographic data and nurses' knowledge regarding physical restraining.

Part 1: Nurses' personal characteristics: It was contained (6) items about (Age, gender, education level, years of work experience, years of experience in ICU, and attending training courses).

Part 2: Nurses' knowledge and feedback related to physical restraining: It was contained (37) items as (definition of physical restraint, who made it, reasons for using, types, other alternatives of it, contraindication, complications and precautions). Feedback contained (6) items about (Having enough information about physical restraint, supporting the necessity of regulations for the physical restraint of the patient, presence of regulations for the physical restraint of the patient to the unit, presence of regulations for the physical restraint in the hospital, the necessity of regulations specifying the method of physical restraint and knowing source of information).

Scoring system for Tool (I)

This tool consisted of (37 items) with a total grade (37).one grade was given for each correct answer, zero grade given for incorrect answer. Subject responses were calculated in the scoring system as following:

Poor level: if the total score was less than 50%, it means less than (≤ 18 points).

Fair level: if the total score was equal or more than 50 %, to less than 75%, it means less than (≥ 19 < 28 points).

Good level: if the total score was equal or more than 75%, it means more than (≥ 28points).

Questionnaire of physical restrain knowledge	
No of items	Alpha Cronbach test
37	0.677

Tool (II): Physical restraint observational checklist

It was adapted from (AlKhaled, et al., 2011; Nettina & Msn, 2013 and Taha & Ali, 2013), and was modified by the investigator based on related literature to assess level of practice of nurses regarding use of physical restraint. It was contained (definition of the infusion pumps, preparing and setting up an intravenous infusion and infusion calculations). This tool consisted of (43 items): nurses' assessment for patient (11 items), preparation phase (8 items),

implementation phase (procedure) (5 items), post care phase (10 items) and documentation phase (9 items).

Scoring system for Tool (II)

This tool consisted of (43 items) with a total grade (43). One grade was given for each correct answer, and zero grade was given for incorrect answer. Subject responses were calculated in the scoring system as following:

Poor level: if the total score was less than 50%, it means less than (≤ 21 points).

Fair level: if the total score was equal or more than 50 %, to less than 75%, it means less than (≥ 22 < 33 points).

Good level: if the total score was equal or more than 75%, it means more than (≥33points).

Questionnaire of physical restrain practice	
No of items	Alpha Cronbach test
43	0.151

Tool (III): Factors affecting nurses' performance regarding use of physical restraining

It was adapted from (Al-Khaled, et al., 2011; Nettina & Msn, 2013 and Taha & Ali, 2013). And was modified by the investigator based on related literature to assess the factors affecting nurses' performance regarding use of physical restraining; it's contained personal factors (6 items), and organizational factors (13 items).

Validity

By utilizing face and content validity, the proposed tools are put to the test. Face validity is the assess the items to determine whether the tools are measuring what they are intended for. A test for content validity was done to verify that the tool's content addressed the study's objectives. A jury of five specialists, including two lecturers in medical surgical nursing at the Helwan University Faculty of Nursing and three assistant professors, evaluated it. The tool was examined by experts for language clarity, relevance, accuracy, thoroughness, simplicity, and applicability; minor modifications were made. The final forms were created in the end.

Reliability

Numerical data were presented as mean, median, standard deviation (SD) and range values. Qualitative data were presented as frequencies (n) and percentages (%). The reliability of the questionnaire was assessed using the reliability coefficient of Cronbach's alpha. To assess the tool's internal reliability, Cronbach's Alpha was employed. Cronbach's alpha reliability coefficient normally ranges between 0 and 1. Cronbach's alpha reliability coefficient for this tool was 0.78. Spearman's correlation coefficient was used to determine correlations between different variables. The significance level was set at $P \leq 0.05$. Statistical analysis was performed with IBM® SPSS® Statistics Version 24 for Windows.

Ethical considerations

The scientific research ethics committee granted official approval for the proposed study's conduct. Before giving their informed consent, individuals were fully told about the study and their part in it. Participation in the study was optional. The ethical considerations included disclosing the goal and methodology of the study, making clear that participants might opt out at any moment, and maintaining the confidentiality of the data so that no one else could access it without the participants' consent. Respect will be shown for morals, values, culture, and beliefs.

Operational Item

Preparatory phase

It was included reviewing of past, current, national and international related literature and theoretical knowledge of various aspects of the

study using books, articles, internet, periodicals and magazines to develop tools for data collection.

Pilot study

The pilot study will be done on 10% of the sample to assess the study tools' time requirements and question clarity. Using tool adjustments were made, after which the final shape was created.

Field work

The fieldwork included the following:

An approval was obtained from the ethical committee of Faculty of Nursing at Helwan University using a written or oral informed consent obtained from each participant prior to data collection.

An approval was obtained from the director of Al-sheikh Zayed general hospital and Al-sheikh Zayed specialized hospital.

RESULTS

TABLE 1: Frequency and Percentage distribution of personal characteristics among the studied nurses (n= 60)

Items		N	%
Age (year)	< 20	4	6.7
	20 < 30	32	53.3
	30 < 40	18	30.0
	40 < 50	6	10.0
	Mean ± SD	29.98 ± 6.91	
Gender	Male	22	36.7
	Female	38	63.3
	Ratio	1.7:1	
Educational level	Diploma	3	5.0
	Technical	16	26.7
	Bachelor	32	53.3
	Postgraduate	9	15.0
Years of experience (In general nursing)	< 1 year	7	11.7
	1 < 5 years	20	33.3
	5 < 10 years	27	45.0
	≥ 10 years	6	10.0
	Mean ± SD	6.15 ± 4.10	
Years of experience (In ICU)	≤ 1 year	7	11.7
	1 < 5 years	17	28.3
	5 < 10 years	27	45.0
	≥ 10 years	9	15.0
	Mean ± SD	5.33± 3.40	
Attended training courses on physical restraint	Yes	27	45.0
	No	33	55.0

Table (1): Shows that the personal characteristics of the studied nurses, it illustrates that (53.3%) of the age of the studied nurses were between 20 < 30 years old with a mean age of 29.98 ± 6.91. Also, more than two- thirds (63.3%) of the studied nurses were female with a female to male ratio = 1.7:1. In relation to education level, more than half (53.3%) of the studied nurses had a

bachelor's degree. Moreover, regarding years of experience, (45 %) of them had experience lasting from 5 < 10 years in both general nursing and in ICU. Additionally, (55%) of the studied nurses had not attended training courses on physical restraint.

TABLE 2: Feedback of the nursing staff about the physical restraint (n=60)

Items		Yes		No	
		N	%	N	%
1	Having enough information about the patient's physical restraint	25	41.7	35	58.3
2	Supporting the necessity of physical restraint of the patient.	32	53.3	28	46.7
3	Presence of regulations for the physical restriction of the patient in the unit	22	36.7	38	63.3
4	Presence of regulations for the physical restriction in the hospital	26	43.3	34	56.7
5	There was a specifying the method of physical restraint of the patient	24	40	36	60
6	Source of the information	N		%	
	Training courses on the job	12		20.0	
	Reading	21		35.0	
	Practice only	27		45.0	

Table (2): Clarifies feedback of the nursing staff about the physical restraint. It denotes that (53.3%) of the studied nurses supported the necessity of physical restraint of the patient while only more than one third (36.7%) of them reported that there were regulations for the physical restriction of the patient to the unit. While (43.3%) reported that there were regulations for the physical restriction in the hospital. Moreover, as regard to the source of information, more than two fifths (45%) of the studied nurses reported that the information source was acquired from practice only while the minority of them documented that the information source was from training courses.

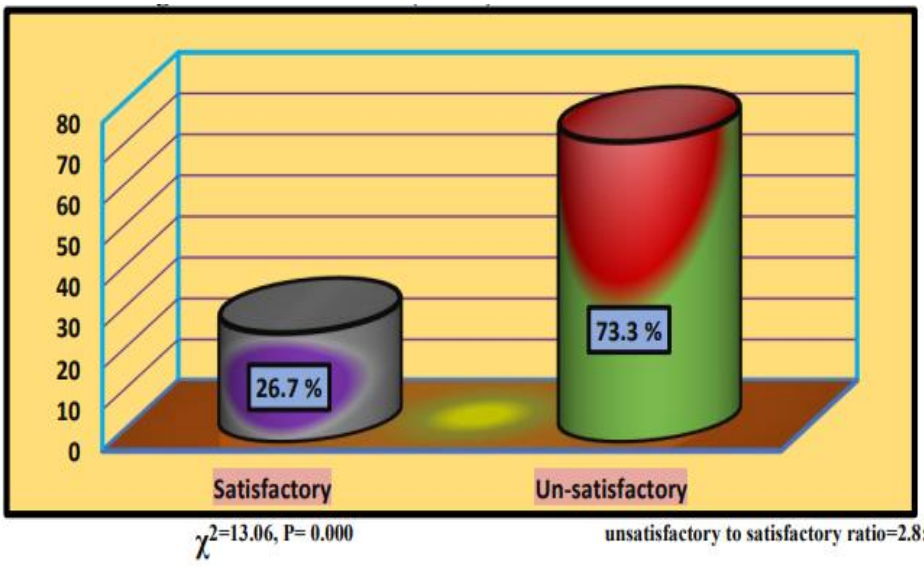

FIGURE 1: Percentage distribution of knowledge level regarding total physical restraint precautions among the studied nurses (n= 60)

Figure 1: Represents the knowledge level regarding physical restraint precautions among the studied nurses. It clarifies that nearly three-quarters (73.3%) of the studied nurses had an unsatisfactory level of knowledge regarding physical restraint precautions among the studied nurses. In addition to the presence of a difference between observed and expected values with a highly statistically significant difference at P = 0.000. Moreover, the unsatisfactory to satisfactory ratio is 2.8:1.

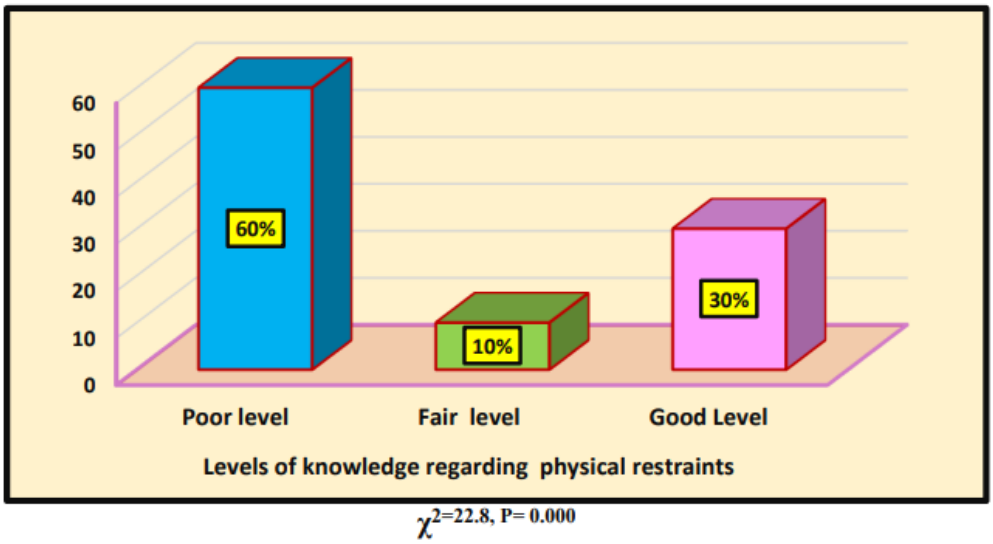

FIGURE 2: Percentage distribution of the total knowledge level regarding physical restraints among the studied nurses (n= 60)

Figure (2): Represents the total knowledge level regarding physical restraints among the studied nurses. It clarifies that two-thirds (60%) of the studied nurses had a poor level of knowledge regarding physical restraint among the studied nurses. In addition to the presence of a highly statistically significant difference at P = 0.000.

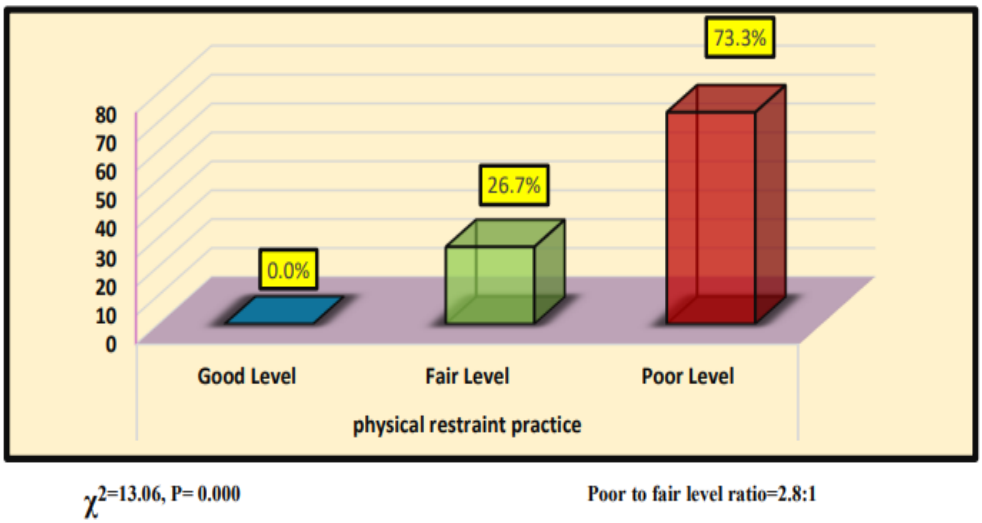

FIGURE 3: Percentage distribution of total physical restraint practice among the studied nurses (n= 60)

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Figure 3: Represents that the total levels of practice regarding physical restraint among the studied nurses. It demonstrates that nearly three quarter (73.3%) of the studied nurses had a poor level of practice regarding physical restraint, followed by more than two-fifths (26.7%) with a fair level of practice. In addition to the presence of a difference between observed and expected values, with a highly statistically significant difference at P = 0.000. Moreover, the poor to fair level ratio=2.8:1.

TABLE 3: Relation between physical restraint knowledge and personal characteristics among the studied nurses (n= 60)

Items		N	Physical restraints knowledge						χ2	P-Value
			Good		Fair		Poor			
			18	30.0	6	10.0	36	60.0		
			N	%	N	%	N	%		
Age (year)	< 20	4	4	6.7	0	0.0	0	0.0	50.9	0.000**
	20 < 30	32	1	1.7	0	0.0	31	51.7		
	30 < 40	18	8	13.3	6	10.0	4	6.7		
	40 < 50	6	5	8.3	0	0.0	1	1.7		
Gender	Male	22	8	13.3	0	0.0	14	23.3	4.01	0.134
	Female	38	10	16.7	6	10.0	22	36.7		
Education level	Diploma	3	3	5.0	0	0.0	0	0.0	42.5	0.000
	Technical	16	0	0.0	0	0.0	16	26.7		
	Bachelor	32	6	10.0	6	10.0	20	33.3		
	Postgraduate	9	9	15.0	0	0.0	0	0.0		
Years of experience (In general nursing)	< 1 year	7	4	6.7	0	0.0	3	5.0	19.09	0.004**
	1 < 5 years	20	2	3.3	0	0.0	18	30.0		
	5 < 10 years	27	8	13.3	6	10.0	13	21.7		
	≥ 10 years	6	4	6.7	0	0.0	2	3.3		
Years of experience (ICU)	< 1 year	7	3	5.0	0	0.0	4	6.7	15.7	0.015**
	1 < 5 years	17	3	5.0	0	0.0	14	23.3		
	5 < 10 years	27	6	10.0	6	10.0	15	25.0		
	≥ 10 years	9	6	10.0	0	0.0	3	5.0		
Attended training courses.	No	33	10	16.7	0	0.0	23	38.3	8.48	0.014**
	Yes	27	8	13.3	6	10.0	13	21.7		

*Significant p < 0.05 **Highly significant p < 0.01

Table 3: Show that there is a highly statistically significant relation between physical restraint knowledge and personal characteristics (age, educational level, years of experience in general nursing and in ICU and attended training courses) among the studied nurses at P ≤ 0.05.

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TABLE 4: Relation between physical restraint practice and personal characteristics among the studied nurses (n= 60)

Items		N	physical restraints practice					
			Fair		Poor		$\chi 2$	P-Value
			16	26.7	44	73.3		
			N	%	N	%		
Age (year)	< 20	4	4	6.7	0	0.0	30.0	0.000**
	20 < 30	32	1	1.7	31	51.7		
	30 < 40	18	6	10.0	12	20.0		
	40 < 50	6	5	8.3	1	1.7		
Gender	Male	22	8	13.3	14	23.3	1.67	0.196
	Female	38	8	13.3	30	50.0		
Education level	Diploma	3	3	5.0	0	0.0	42.1	0.000
	Technical	16	0	0.0	16	26.7		
	Bachelor	32	4	6.7	28	46.7		
	Postgraduate	9	9	15.0	0	0.0		
Years of experience (In general nursing)	< 1 year	7	4	6.7	3	5.0	11.3	0.010**
	1 < 5 years	20	2	3.3	18	30.0		
	5 < 10 years	27	6	10.0	21	35.0		
	≥ 10 years	6	4	6.7	2	3.3		
Years of experience (ICU)	< 1 year	7	3	5.0	4	6.7	10.9	0.012**
	1 < 5 years	17	3	5.0	14	23.3		
	5 < 10 years	27	4	6.7	23	38.3		
	≥ 10 years	9	6	10.0	3	5.0		
Attended training courses on physical restraint	No	33	10	16.7	23	38.3	0.49	0.481
	Yes	27	6	10.0	21	35.0		

*Significant $p < 0.05$ **Highly significant $p < 0.01$

Table 4: Shows that there is a highly statistically significant relation between physical restraint practice and personal characteristics (age, education level, and years of experience in general nursing and in ICU) among the studied nurses at $P \leq 0.05$.

TABLE 5: Correlation between total physical restraint knowledge and practice among the studied nurses (n= 60)

Total physical restraint practice		Total physical restraint knowledge	
		General knowledge	precaution
Assessment	R	0.821	0.921
	P	0.000**	0.000**
Preparation	R	0.775	0.896
	P	0.000**	0.000**
Procedure	R	0.834	0.918
	P	0.000**	0.000**
Post care	R	0.865	0.937
	P	0.000**	0.000**

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Documentation	R	0.836	0.911
	P	0.000**	0.000**
Total	R	0.919	
	P	0.000**	

*Significant p < 0.05 **Highly significant p < 0.01

Table 5: Illustrates that the correlation between the total of physical restraint knowledge and practice among the studied nurses. It clarifies that there is a highly statistically positive correlation between total & all dimensions of physical restraint knowledge (general knowledge and precaution) and physical restraint practice (assessment, preparation, procedure, post care and documentation) among the studied nurses at p= 0.000).

DISCUSSION

The current study involved a sample of sixty nurses. According to the current study's findings about the personal characteristics of the nurses who were the subject of the study, more than half of them were between the ages of 20 and 30 years old, showing that they were primarily junior nurses. Nurses between the ages of 40 and 50 years old made up the lowest percentage of the study's participants due to age-related differences in job ability and occupational burnout. This finding goes in the same line with Ali, et al., (2020), who conducted a study entitled " Assessment of nurses management skills for critically ill patients" and found that the investigated sample's average age was between 20 and 30 years old.

Regarding the gender of the studied nurses; the present study revealed that, about more than two thirds of the studied nurses were females, this finding supported with Mohamed and Ali, (2020), who conducted a study entitled " Nurses Practice to Physical Restraint Practices in ICU Units at Three Teaching Hospitals in Baghdad" They found that more than 75% of participants in the study were females, Also Younis and Ahmed, (2019), who conducted a study entitled "Physical Restraint and Maintenance of Critically Ill Patient's Safety in Intensive Care Unit" revealed that, more than three quarters of study subjects were females. This result was conflicting with Almomani, et al., (2021), who conducted a study entitled " Assessment of nurses management skills for critically ill patients" because it showed that more than two thirds of the study participants were men.

Concerning nurses ' educational level; More than half of the nurses in the current study held a bachelor's degree, it was found. This can be the result of recent nursing graduates being appointed to intensive care units. This finding is in agreement with Ali, et al., (2020), who conducted a study, entitled " Assessment of nurses management skills for critically ill patients". He demonstrated that, more than half of study sample had a bachelor degree in nursing. In addition, Mohamed and Ali, (2020), who conducted a study entitled " Nurses Practice to Physical Restraint Practices in ICU Units at Three Teaching Hospitals in Baghdad" revealed that, more than one third of their study subjects graduated from Nursing Technical Institute.

Because knowledge is crucial for attitude or behavioral consistency, nursing knowledge assessment is vital. More than two thirds of the nurses in the survey had an unacceptable level of general understanding of physical restraint, according to the current study. This result is consistent with Nasrate, et al., (2019), who conducted a study, entitled " Improving ICU Nurses' Practices of Physical Restraints in Jordan: Effect of an Educational Program Health". He indicated that more than 50% of the studied group had insufficient knowledge of physical restraint. This can be because there aren't any in-service training seminars or because PR isn't included in the nursing curriculum.

In terms of supporting the need for physical restraint, it appears that more than half of the nurses that participated in the study use it. This finding is congruous with a study was done by Evans et al., (2020), who entitled "Physical restraint in acute and residential care". He

reported that, two-thirds of the critical nurses stated that it was necessary to hold a patient physically to keep them safe, control their behavior, and prevent them from dislodging any medical equipment. The fact that the nurses' knowledge was different could account for this finding.

according to rules governing the physical restraint of patients to units or hospitals, the results of the current study showed that more than two thirds of respondents indicated that there were none in their units, and more than half indicated that there were none in their hospitals. This current study finding is consistent with a study that was done by Schieb, et al., (2021), which, entitled "Special feature implications of physical restraint and restraint education of older persons". He revealed that more than 75% of nurses said their hospital had no restraint policies. The majority of the nurses, however, underlined the importance of the hospital having clear policies and procedures. According to the nurses, they had to decide whether to use restraints in accordance with the precise instructions given by the hospital; otherwise, the intervention would be against the law or unethical.

In terms to nursing care, the present study clarified that, more than three quarters of the nurses in the survey provided false information on their degree of competence in nursing care. This conclusion might be indicative of most nurses, who fail to check on patients every 15 minutes, undo ties, adjust positions, or give range-of-motion exercises. However, most of them neither grant access to call bells nor even consider whether the gadget is still necessary. No one among them makes documentation for restraints that reevaluates the need for the restraint, the condition of the skin, the vital signs (temperature, pulse, blood pressure, and respiration), as well as the period between releasing the restraint and applying it again. Most of them failed to tie the patient in the proper spot on the bed. Conversely Brown, et al., (2019); who conducted a study entitled "Clinical practice guidelines for the maintenance of patient physical safety in the intensive care unit". He stated that the majority of nurses assess the patient while they are restrained for hygiene, hydration, circulation, and range of motion (ROM) activity. They also instruct the patient on what to do, describe the restraint, and practice hand washing for both them and the patient (especially when using mitt restraints). They also stated that the responsible nurse must have padded the bony conspicuous places and failed to secure the restraint in the movable part of the bed because each nurse was able to fit one to two fingers between the restraint device and the patient's part.

The current study demonstrated that more than the majority of the examined nurses showed incompetency in the use of physical restraint in connection to patient assessment before restraining. These findings are in agreement with the findings of the study by Younis and Ahmed, (2019); who conducted a study entitled "Physical Restraint and Maintenance of Critically Ill Patient's Safety in Intensive Care Unit". He reported that, two thirds of the participants didn't identify the patient by his full name, didn't introduce themselves, assess the level of consciousness or explain the procedure to the patients. They didn't check the doctor order for restraint application or perform hand washing or review policies regarding restraining before application of physical restraints.

According to patient preparation before restraining, the current study clarified that most of the nurses who participated in it lacked competence in the use of physical restraint in connection to patient preparation before restraining. These findings are in agreement with findings of the study by Sze, (2019); who conducted a study entitled "Nurses' knowledge, attitude and clinical practice of physical restraint use with introduction of an in-service education program in an acute geriatric setting". He emphasized the fact that before using physical restraints, two thirds of the nurses in the study failed to prepare the patient and the necessary tools. In all areas of preparation, the current study found a statistically significant decline. The following observations were noted as not being made by all CCNs: hospital policy, physician order, justification for utilizing PR to the patient or his family, and patient informed consent prior to protocol execution. The investigator hypothesized that this result was caused by

nurses' inadequate in-service PR training, which had a detrimental effect on their practices.

Regarding the procedure of restraining, It is clarified that more than four fifths of the nurses who participated in the study were unskilled when it came to using physical restraint in relation to procedure. These findings are in agreement with findings of the study by Janelli, et al., (2019); which is titled "Acute-critical care nurses' knowledge of physical restraints". He claimed that most nurses failed to secure the patient in the proper position on the bed, failed to give the patient privacy, failed to advance the patient's comfort, failed to install bed rails, failed to pad pony areas, failed to secure the restrain by leaving one to two fingers under the restraint, and failed to secure the restraint with a quick release tie.

Regarding post care of restraining, It is clearly stated that when it comes to physical restraint practice, more than the majority of the studied nurses were incompetent. These findings are in agreement with Lewis, et al., (2019); who conducted a study entitled "Assessment and Management of clinical programs". He emphasized that only half of the nurses in the study remembered to release constraint every two hours, remove the physical restriction so that the restrained joints could be massaged and given range-of-motion exercises, and record observations of the restricted. Conversely, Chien, et al., (2019); who conducted a study entitled "Psychiatric inpatients' perceptions of positive/ negative aspects of physical restraint". He stated that almost half of their nurses disagreed with the idea that restraints should be released every two hours if the patient was conscious and thought they should be put snugly.

Conversely, Brown, et al., (2019), who conducted a study entitled "Clinical practice guidelines for the maintenance of patient physical safety in the intensive care unit". He reported that the staff nurse should release the restrain every 2 hours for 30 minutes and perform active and passive range of motion exercises, maintain and respect psychological condition for restrained patients, maintain patient hygiene, never restraint patient from four parts if he liable for aspiration but restrain him from one site, restricted place should be intact (no more laceration or wounds) and the staff nurse should watch for signs of impaired peripheral circulation as cool and cyanotic skin.

CONCLUSION

According to the results of the current study, only about two-thirds of the nurses were adequately knowledgeable about physical restraint. Over 75 percent of the nurses who were studied had little to no experience with physical restraint.

RECOMMENDATIONS

To improve nurses' use of physical restraint and emphasise the significance of procedure, on-campus training courses are based on best clinical guidelines for nurses working in ICU.

Replacing the conventional nursing care plan with a physical restrain protocol as part of the plan of care.

More studies on the impact of improved nursing practise and knowledge on patient outcomes related to physical restraint.

For the purpose of generalizing the findings and identifying the key elements of the nurses' performance with regard to physical restraint, the study should be repeated on a large sample in various hospital settings throughout Egypt.

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