

## Nurses' Knowledge, Attitude and Practice towards Safety Physical Restraints use in intensive care unit

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### **Abstract:**

**Background:** Physical restraints are commonly used in clinical settings to control disruptive behaviour, wandering, maintain treatment plans, and prevent falls. The level of knowledge about restraints and the underlying attitudes of staff toward the use of restraints should be identified because knowledge and attitudes can directly or indirectly affect practice. **Aim:** the study was carried out to identify nurses' knowledge, attitude and practice toward safety physical restraints use in intensive care unit. **Subjects & methods: Research design:** Descriptive research design was utilized. **Setting:** This study was conducted in intensive care units in Menofia University Hospital and Shebien El Koom Teaching Hospital. **Subjects:** A convenience sample of all nurses on intensive care units in selected setting, 60 nurses in Menofia University Hospital and 35 nurses in Shebien El Koom Teaching Hospital and 95 patients with physical restraints were included in this study. **Tools of data collection:** one tool was used for data collection which is structure interview schedule. **Results:** The results revealed that about two thirds of the nurses had poor knowledge and about one third of them had moderate knowledge, most of nurses had negative attitude and moderate practice toward the use of physical restraints. There was no statistical significance positive correlation between nurses' knowledge and practice score while there was statistical significance positive correlation between nurses' knowledge and attitude score. Also there was statistical significance positive correlation between nurses' attitude and practice score. **Conclusions:** The current study concluded that there was inadequate knowledge and practice and negative attitude towards the use of physical restraints in intensive care unit. **Recommendations:** The study recommended that training programs should be organized for the nurses to improve their knowledge regarding physical restraint application, and orientation programs should be utilized for newly jointed nurses to improve their practice and knowledge regarding restraint application.

**Key words:** Nurses' Knowledge; Attitude and Practice; Physical restraints; intensive care unit

### **Introduction:**

Restraint is most commonly used in intensive care units (ICUs) to protect the patient from the risks associated with untimely patient-initiated removal of indwelling devices such as endotracheal tubes. Both chemical and physical restraints are used. Anecdotally, the practice of using physical restraints in intensive care varies widely, with differing views worldwide about the acceptability of physical restraints. <sup>(1, 2)</sup> Physical restraint is any chemical or physical involuntary method restricting an individual's movement, physical activity, or normal access to the body. <sup>(3)</sup> Their use is a common practice in various clinical settings; with 7-17 % of hospital patients having been subjected to physical restraints. <sup>(4)</sup>

Physical restraints and their application are affected by a number

of factors such as; nurses' number, qualification, experience, and knowledge regarding restraint use. <sup>(5)</sup> Up to 80% of patients in ICU may experience some degree of agitation, confusion and delirium during their stay <sup>(6)</sup> caused by pain, underlying illness, sleep deprivation, hypoxia, mechanical ventilation, myocardial ischemia, alcohol and substance withdrawal and altered cell metabolism. <sup>(7, 8)</sup> Compounding the problem is the patients' anxiety due to an inability to communicate, unfamiliar surroundings, loss of self-control, fear of real or imagined danger, noise and irregular sleep patterns. <sup>(9)</sup> Patients may attempt to remove invasive devices <sup>(1)</sup> thus jeopardizing their progress or even resulting in death. Physical and chemical restraints may be used to address the problem;

however, the decision to use physical restraints requires the balancing of risks and benefits as they may increase the likelihood of skin trauma, pressure sores, muscular atrophy, nosocomial infections, constipation, incontinence, limb injury, contractures, depression, and a decline in functional and cognitive states and increasing agitation.<sup>(10)</sup> The food and drug administration (FDA) estimates that at least 100 deaths occur annually in the USA from improper use of restraints.<sup>(1)</sup>

Also, it was reported that use of physical restraint resulted in negative effects on patients and their families, with patients feeling disgraced and embarrassed in remembering the experience.<sup>(4)</sup> This is due to negative feelings towards it, such as feeling of confinement, loss of dignity and identity, aggression, social isolation and anxiety. On the other hand, nursing staff may have feelings of guilt and frustration when they have to restrain patients.<sup>(5)</sup> However, physical restraint is contraindicated in edema and cyanosis, pressure ulcers, aspiration and breathing problems, agitation, contractures, fractures, paralyz and most importantly if the informed consent is not obtained from patients or surrogates.<sup>(11)</sup>

Ethical concerns are related to patients' right to autonomy and dignity, whereas the right to a safe working environment has been raised as an ethical justification for restraining disoriented and aggressive patients.<sup>(2)</sup> Nurses are most intimately involved in the decision to restrain and in its implementation. At the same time, the nurses have a moral obligation to do no harm (non-maleficence) and to promote good (beneficence). This implies that health care professionals must ensure that they have satisfied all the legal and ethical implications; otherwise they may face allegations of assault.<sup>(12)</sup>

Nurses are closely involved in caring for restrained patients. The common absence of medical orders

for starting or removing physical restraints indicates that these decisions are mostly made by the nurses. Their roles start with the selection of the least restricting arm restraint device available. Then, they are the ones responsible for modifying the care plan based on hourly assessment of patient's response, and removing the restraints every two hours. Their roles also include frequent change of patient's position, with assistance in activities of daily living, in addition to assessing the patient for any physical and/or psychological effects of restraining. Moreover, they must look for other causes of agitation and treat accordingly, inform relatives of the need for restraint, and review orders every 4 hours.<sup>(13,14)</sup>

In Egypt, physical restraint is a more conventional practice in ICUs. There are no available guidelines or legal regulations concerning physical restraint use.<sup>(15)</sup> Most nursing research in Egypt focuses on educational programs for nurses, and investigates nurses' practice in order to identify areas that need improvement. It is rare to find a study that investigates nurses' attitude towards the use of physical restraint. Hence, the aim of this study was to identify nurses' knowledge, attitude and practice toward safety physical restraints in intensive care unit in menofia, Egypt.

### Significance of the study:

The prevalence rates of physical restraints practice in healthcare are ranging between 15% and 66% in nursing homes and between 33% and 68% in hospital settings.<sup>(16)</sup> In intensive care units (ICUs), preventing dislodgement of medical equipment is the main reason for physical restraints use. Recent studies carried out in Mansoura ICUs revealed most of the patient was restrained due to the removal of medical device, and developed pressure sore, limb edema, restricted circulation, and skin laceration at restraint site.<sup>(15,17)</sup> The

decisions for starting or removing physical restraints are mostly made by the nurses because of common absence of medical orders and guidelines or legal regulations concerning physical restraint use. Also nurses are closely involved in caring for restrained patients. Since nurses' knowledge, attitude and practice play an important role in care of restraints patients so the aim of this study was to identify nurses' knowledge, attitude and practice toward safety physical restraints in intensive care unit.

**Aim of the study:**

The aim of this study was to identify nurses' knowledge, attitude and practice toward safety physical restraints use in intensive care unit.

**Research question:**

What are nurses' knowledge, attitude and practice toward safety physical restraints use in intensive care unit?

**Subjects and method:**

**Research design:**

Descriptive research design was utilized in this study.

**Setting:**

The study was conducted in intensive care units in Menofia University Hospital and Shebien El Koom Teaching Hospital.

**Subjects:**

A convenience sample of all nurses working in intensive care units; 95 nurses: 60 nurses in Menofia University Hospital and 35 nurses in Shebien El Koom Teaching Hospital and 95 patients with physical restraints in selected setting. The study was conducted over about 8 months period. The researcher visited the hospital 2 days weekly until the sample were completed

**Tools of data collection:**

One tool was utilized for data collection which is:

**Structure interview schedule:**

It consists of 5 parts. Part 3, 4, and 5 developed by Janelli et al., and scherer et al.,<sup>(18,19)</sup> to measure knowledge level, attitudes and practice of the nursing staff towards physical restraints, and was translated, and

tested for reliability (coefficient alpha were 0.75, 0.79 and 0.77 respectively) by Azab and Abu Negm.<sup>(20)</sup> Part 1, and 2, were developed by the researcher after reviewing the related literature<sup>(21,22)</sup> to measure Characteristics of Nursing Staff and characteristics of the restrained patients.

- **Part (1): Characteristics of Nursing Staff.** It compromised information about age of nurse, qualifications, and years of experiences.
- **Part (2): characteristics of the restrained patients.** It included data about patient age, gender, and diagnosis.
- **Part (3): Nurses' knowledge toward the use of restraints:** It consists of 18 items to assess nurses' knowledge regarding use of physical restraints (definition, indications, methods, alternatives, precautions, the need for physician's order before patient restraint, complications, ethical issues, nursing care for restrained patient).

**Scoring system:**

Each item was given a score 1 for correct responses and score 0 for incorrect responses, with undecided answers included in the incorrect category. All scores were summed and the range of score was from 0 to 18. The higher score indicated good knowledge as follow:

- ✓ A score less than 60% (10.8) of total score indicated poor knowledge score.
- ✓ A score between 60 % (10.8) to 80 % (14.4) of total scores indicated moderate knowledge score.
- ✓ A score greater than 80% (14.4) of total scores indicated good knowledge score.<sup>(22)</sup>
- **Part (4): Attitudes of staff toward the use of restraints:** It consists of 12 items. Nurses were asked to respond on a three point likert scale as to whether they strongly agree, agree, and disagree.

**Scoring system:**

Each item was given a score 3 for strongly agree, score 2 for agree, and score 1 for disagree. Item 5 was negative item and its score was reversed. All scores were summed and the range of score was from 12 to 36. The higher scores indicated positive attitude as follow:

- ✓ A score less than 60% (21.6) of total score indicated negative attitude.
  - ✓ A score equal and more than 60% (21.6) of total score indicated positive attitude. <sup>(23)</sup>
- **Part (5): Nursing practice issues:**  
It consists of 14 items to assess nurses' practice regarding use of physical restraints. This section addresses the use of alternative measures before the use of restraints, physician's order before use, report of the indications of restraint to the patient and the relatives and documentation in addition to issues in nursing care for patients immediately before and during restraint (observation every 2 hours, documentation of restraint data, follow up to detect any complications of restraint and to assess if the restraint should be removed). Nurses were asked to respond on a three point likert scale as to whether they always, sometimes, or never used these practices.

**Scoring system:**

Each item was given a score 3 for always, score 2 for sometimes, and score 1 for never adopted such practices. Item 10 was a negative item and needed to be reverse scored. All scores were summed and the range of score was from 14 to 42. The higher score indicated good practice as follow:

- ✓ A score less than 60 % ( 25.2) of total score indicated poor practice score.
- ✓ A score between 60 % (25.2) to 80 % (33.6) of total scores indicated moderate practice score.

- ✓ A score greater than 80% (33.6) of total scores indicated good practice score. <sup>(22)</sup>

**Content validity and reliability:**

Part 1 and 2 of the tool developed by the researcher after reviewing the related literature. <sup>(21, 22)</sup> It was written in Arabic and tested for content validity by three experts in the field of Medical Surgical Nursing, Faculty of Nursing, Menofia University, and two experts in the field of Medicine, Faculty of Medicine, Menofia University, modifications were done accordingly.

Part 1 and 2 of the tool was tested for reliability using test retest method and pearson correlation coefficient formula to ascertain the consistency of the tool to measure the items. Correlation coefficient alpha was 0.89 and 0.88 respectively.

**Pilot study:**

It was conducted prior to data collection on 10% of the study sample. This was performed in order to test the clarity and applicability of the tool and necessary modifications were done. Data obtained from the pilot was excluded from the study.

**Field work:**

Data were collected over a period of eight months from May 2013 to December 2013. All nurses at intensive care unit in Menofia University Hospital and Shebien El Koom Teaching Hospital who agreed to participate in the study were interviewed individually at intensive care unit in Menofia University Hospital and Shebien El Koom Teaching Hospital. The interview was conducted by introducing the researcher himself to the nurses and giving them simple explanation about the aim of the study and assured them that information will be confidential and will be used only for the purpose of the study. The researcher assessed each patient individually in intensive care unit for collecting data. It took about 20 to 30 minutes.

**Administrative and ethical considerations:**

An official permission was obtained by

the researcher from the hospital administrator and the head of intensive care units of both hospitals. It was obtained after explaining the study purpose.

Nurses' and patients' formal agreement to participate in the study was obtained after explanation of the study purpose. Each nurse and patient was reassured that confidentiality and privacy will be maintained and his or her right to withdraw at any time.

#### **Statistical design:**

Upon completion of data collection, each variable in the study tools was manually scored. Computerized data entry and statistical analysis were fulfilled using the statistical package for social sciences (SPSS). Descriptive statistics were first applied (e.g., frequency, percentage, mean and standard deviation). Tests of significance were used to compare mean using fisher exact test. Pearson correlation coefficient was used to assess association between nurses' knowledge and practice, nurses' knowledge and attitude and nurses' practice and attitude. Statistical significance was set at  $p$  value  $< 0.05$ .<sup>(24)</sup>

#### **Results:**

**Table (1):** presents Personal characteristics of studied nurses at ICU. It was founded that 57.9% of the nurses were graduated from the technical nursing institute, 32,6% were graduated from faculty of nursing and only 9.5 % were graduated from the secondary nursing school. As for nurses' years of experience at ICU, more than two thirds of the nurses (70.53%) had an experience between 5-10 years. Regarding nurses' age, it was found that more than two thirds of the nurses (68.42%) were aged between 25- 29 years.

**Table (2):** shows characteristic of restrained patients. It was founded that patients' ages were ranged between 12 and 70 years old; 40% of them were more than 52 years old, with a mean of  $45.36 \pm 16.94$ . regarding

medical diagnosis, 24.2 % had multiple trauma and 23.2 % had hepatic encephalopathy.

**Table (3):** Presents nurses' knowledge toward the use of physical restraints. It was found that (63.2%) of the nurses had poor knowledge (score less than 10.8) and 36.8% of the nurse had moderate knowledge (score between 10, 8 to 14.4).

**Table (4):** Shows nurses' attitudes toward the use of physical restraints. It was found that most of nurses (82.1%) had negative attitude (score less than 21.6) toward the use of physical restraints.

**Table (5):** Presents nurses' practice toward the use of physical restraints. It was found that majority of nurses (94.7%) had moderate practice (score between 52.2 to 33.6).

**Figure (1):** Shows correlation between nurses' knowledge and performance score. There was no statistical significance positive correlation between nurses' knowledge and performance score ( $r = + 0.18$ ,  $p$  value = 0.11).

**Figure (2):** Illustrates correlation between nurses' knowledge and attitude score. There was statistical significance positive correlation between nurses' knowledge and attitude score ( $r = + 0.28$ ,  $p$  value = 0.006)

**Figure (3):** Demonstrates correlation between nurses' attitude and practice score. There was statistical significance positive correlation between nurses' attitude and practice score ( $r = + 0.20$ ,  $p$  value = 0.05).

**Table (6):** Displays relationship between nurses' knowledge, attitude and practice towards the use of physical restraints and degree of qualifications of the studied nurses. It represented that there was no statistical significance difference between total knowledge score and qualification with  $p$  value = 0.23. While there were statistical significance differences between total attitudes, total performance score and their

qualification with p value < 0,001, 0.004 respectively.

### Discussion:

The critical care unit is perhaps the last major health care setting in which physical restraint remains a common and unquestioned practice. Minnick, et al. <sup>(25)</sup> found that, whereas ICUs overall accounted for less than one fifth of the hospital beds involved in their study, they accounted for more than half of all restraint use. While regulatory standards related to the use of physical restraint in acute settings have been strengthened significantly in recent years, it is not clear from the literature whether these changes have influenced nursing practice in regard to restraint use. Furthermore, nurses' views and attitudes toward the use of physical restraint in controlling patients' behavior and ensuring patient safety may create conflicts with patients' rights, including their autonomy in making decisions for their own care. <sup>(26)</sup>

It was noticed from the results of the present study that almost half of the restrained patients were aged over 52 years old. This finding is supported by Al-Khaled , Zahran , El Soussi <sup>(22)</sup> who found that most of restrained patients were aged between 45- 70 years old. This may be because aging is causing agitation and putting the patients into the risk of pulling the life support devices and catheters.

Analysis of data showed that the restrained patient in intensive care unit had multiple traumas. This may be because critically ill patients with multiple traumas may have traumatic brain injury and agitation is the most frequently observed behavioral problem need physical restraints to control agitation in patients with multiple traumas.

The results of the current study also revealed that the restrained patients in intensive care unit had hepatic encephalopathy. The patient appears slightly confused, and has alterations in mood and sleep patterns.

As hepatic encephalopathy progresses, the patients may become agitated, had marked confusion and difficult to awaken and completely disoriented. Medical management of hepatic encephalopathy requires intravenous line and enteral feeding. Patients may develop respiratory compromise and may require intubation and mechanical ventilation to protect the airway. Therefore, the main reason for restraining these patients may be maintaining and preventing the removal of supportive devices. Also the patients with hepatic encephalopathy may have inappropriate behavior and without restraining these patients, will be more susceptible to harming themselves or others.

The findings of present study represented that the nurses had poor knowledge towards the use of physical restraints; also the current study showed that most of nurses had moderate practice of the physical restraints. Al-Khaled et al., <sup>(22)</sup> reported that nurses' knowledge as well as their practice of physical restraints were moderate. This may be due to lack of training for nurses on physical restraints especially in technical institute of nursing and secondary nursing school, lack of written policies and procedures guiding physical restraints and inadequate supervision. Also there is no physician order, to be followed which is one of the important legal aspects. Also there are inadequate documentations related to restraints. This may be due to the nurses' belief that restraints procedure is not ethically accepted, moreover, they may not consider it as an important procedure that requires documentation.

Moreover, the current study indicated that most of nurses had negative attitude toward the use of physical restraints. Similar findings were reported by Chien, and Lee <sup>(27)</sup> who found that Overall, the nurses in their study demonstrated slightly negative attitudes toward restraints

practice. This may be due to lack of information that might contribute to lower levels of knowledge and negative attitudes among nurses regarding restraint use.

According to the current study findings there were no statistical significance positive correlation between nurses' knowledge and practice score. These findings were not in agreement with Azab, and Abu Negm<sup>(20)</sup> they found significant positive correlations between nurses' practice score and knowledge score regarding the use of physical restraints. These differences may be due to different population, setting and socio-demographic data. Also the present study found significant positive correlation between nurses' knowledge and attitude score. Similar findings were reported by Eunjoon<sup>(28)</sup> who found that there was positive correlation between the knowledge level and attitude of restraints use. In addition the present study found significant positive correlation between nurses' attitude and practice score. Similar findings were reported by Azab, and Abu Negm<sup>(20)</sup> they found significant positive correlation between nurses' practice score and attitude score regarding use of physical restraints. The attitude of nurses toward restraints is one of the main reasons for variations in their use.<sup>(29)</sup> This may be due to the nursing staff with a more positive attitude toward restraints use was more prone to using restraints. Also it is important to consider the knowledge level and the power one's beliefs have some influence on one's practice. It is expected that the higher the knowledge level, the more positive the attitudes, and the better the practice. Lack of knowledge has some influence on staff attitudes towards the use of restraints; so education is especially important in changing these attitudes.

The present study results showed that there were no statistical significance differences in total knowledge score, between nurses with

baccalaureate degree, technical degree and nurses with diploma. The present study finding is in line with Azab, and Abu Negm<sup>(20)</sup> they found that there were non significant differences in knowledge score between nurses with diploma in nursing and those with higher qualifications. In addition there were statistical significance difference between total attitude and total performance score of the nurses and their qualification. This can be explained by the fact that nurses with baccalaureate degree received some training on restraining while they were undergraduates as a procedure included in the fundamental of nursing course. These findings were not in agreement with Azab, and Abu Negm<sup>(20)</sup> they found that there were no significance differences in the knowledge score between nurses with diploma in nursing and those with higher qualifications. These differences may be related to different population, setting and socio-demographic data.

#### **Conclusion:**

The current study concluded that there was poor knowledge, moderate practice and negative attitude of nurses towards the use of physical restraints in intensive care unit. Also there was no statistical significance positive correlation between nurses' knowledge and performance score. However there was statistical significance positive correlation between nurses' knowledge, practice score and their attitude towards the use of physical restraints. There was no statistical significance difference between total knowledge score and nurses' qualification. While there were statistical significance differences between nurses' total attitudes, total performance score and their qualification.

#### **Recommendations:**

The study recommended that training programs should be organized for the nurses to improve their knowledge regarding physical restraint application, orientation programs

should be utilized for newly jointed nurses to improve their practice and knowledge regarding restraint application, continuous supervision from the head nurse to the staff nurses during physical restraint application and feedback should be done as well as booklets about physical restraint should be available in each department using restraint in the hospital.

**Table (1): Personal characteristics of studied nurses at ICU**

Variables	The studied nurses (No 95)	
	No.	%
<b>Nurse's qualifications:</b>		
▪ Technical degree	55	57.9
▪ Diploma	9	9.5
▪ B Sc. degree	31	32.6
▪ Post graduate	0	0.0
<b>Age (years):</b>		
▪ < 25	18	18.95
▪ 25- 30	65	68.42
▪ > 30	12	12.63
<b>Age ( years)</b>		
▪ X ± SD	26.38 ±2.25	
▪ Range	23 – 32	
<b>Years of experience:</b>		
▪ < 5	21	22.10
▪ 5- 10	67	70.53
▪ > 10	7	7.37
<b>Years of experience:</b>		
▪ X ± SD	5.99±2.19	
▪ Range	1 – 11	

**Table (2): Characteristics of the restrained patients**

Variables	The studied patients (N = 95)	
	No	%
<b>Age</b>		
▪ X ± SD	45.36 ± 16.94	
▪ Range	12 – 70	
<b>Age</b>		
▪ < 32	29	30.53
▪ 32- 52	28	29.47
▪ > 52	38	40.00
<b>Gender</b>		
▪ Male	64	67.4
▪ Female	31	32.6
<b>Diagnosis</b>		
▪ Multiple trauma	23	24.2
▪ Hepatic encephalopathy	22	23.2
▪ Suicidal attempts	15	15.8
▪ End stage renal disease	11	11.6
▪ Others (confusion , Cerebral hemorrhage, Hemiplegia, chest infection , Stroke, and Cancer stomach	24	25,2



**Table (3): Nurses' knowledge towards the use of physical restraints**

Variables	Correct		Incorrect	
	No.	%	No.	%
1. Physical restraints are safety vests or garments designed to prevent injury.	95	100	0	0.0
2. A restraint is legal only if it is necessary to protect the patient or others from harm.	95	100	0	0.0
3. Restraints should be used when one cannot watch the patient closely.	37	38.9	58	61.1
4. Patients are allowed to refuse to be placed in a restraint.	18	18.9	77	81.1
5. A physical restraint requires a physician's order.	32	33.7	63	66.3
6. Confusion or disorientation is the main reason for using a restraint.	54	56.8	41	43.2
7. A restraint should be released every 2 hours if the patient is awake.	33	34.7	62	65.3
8. Restraints should be put on snugly.	43	45.3	52	54.7
9. A patient should never be restrained while lying flat in bed because of the danger of choking.	43	45.3	52	54.7
10. When a patient is restrained, skin can break down or restlessness can increase.	90	94.7	5	5.3
11. When a patient is restrained in a bed, the restraint should not be attached to the side rails.	40	42.1	55	57.9
12.. Sheet restraints may be necessary at times.	36	37.9	59	62.1
13. A nurse can be charged with assault if he/she applies restraints when they are not needed.	60	63.2	35	36.8
14. A record should be kept on every shift of patients in restraints.	45	47.4	50	52.6
15. A physician's order to restrain must be specific.	63	66.3	32	33.7
16. In an emergency a nurse can legally restrain a patient without a physician's order.	57	60.0	38	40.0
17. Good alternatives to restraints do not exist.	21	22.1	74	77.9
18. Deaths have been linked to the use of vest restraints.	43	45.3	52	54.7
<b>Total knowledge score ( 18 )</b>		<b>No.</b>		<b>%</b>
▪ <b>Poor ( less than 10.8)</b>		60		63.2
▪ <b>Moderate ( between 10.8 to 14.4 )</b>		35		36.8
▪ <b>Good ( greater than 14.4)</b>		0		0.0

**Table (4): Nurses' attitudes towards the use of physical restraints**

Variables	Disagree		Agree		Strongly agree	
	No.	%	No.	%	No.	%
1. I feel that family members have the right to refuse the use of restraints.	70	73.7	21	22.1	4	4.2
2. I feel that nurses have the right to refuse to place patient in restraints.	15	15.8	77	81.1	3	3.2
3. If I were the patient, I feel I should have the right to refuse/ resist when restraints are placed on me.	21	22.1	74	77.9	0	0.0
4. I feel guilty placing a patient in restraints.	62	65.3	25	26.3	8	8.4
5. I feel that the main reason restraints are used is that the hospital is short staffed.	58	61.1	35	36.8	2	2.1
6. I feel embarrassed when the family enters the room of a patient who is restrained and they have not been notified.	47	49.5	44	46.3	4	4.2
7. The hospital is legally responsible to use restraints to keep the patient safe.	19	20	76	80.0	0	0.0
8. It makes me feel bad if the patient gets more upset after restraints are applied.	13	13.7	82	86.3	0	0.0
9. I feel that it is more important to let the patient in restraints know that I care about him or her.	8	8.4	87	91.6	0	0.0
10. It seems that patients become more disoriented after a restraint has been applied.	55	57.9	40	42.1	0	0.0
11. A patient suffers a loss of dignity when placed in restraints.	15	15.8	76	80.0	4	4.2
12. In general, I feel knowledgeable about caring for a restrained patient.	42	44.2	49	51.6	4	4.2
<b>Total attitude score (36)</b>			<b>No.</b>		<b>%</b>	
▪ <i>Positive ( less than 21.6)</i>			<b>17</b>		<b>17.9</b>	
▪ <i>Negative ( equal and more than 21.6)</i>			<b>78</b>		<b>82.1</b>	

**Table (5): Nurses' practice towards the use of physical restraints**

Variables	Never		Sometimes		Always	
	No.	%	No.	%	No.	%
1. Nurse tries alternative nursing measures before restraining the patient.	80	84.2	14	14.7	1	1.1
2. When nurse restrain a patient, nurse make this decision only with a physician's order	0	0.0	94	98.9	1	1.1
3. When nurse feel that the patient does not need to be restrained, nurse make this suggestion to the doctor	11	11.6	18	18.9	66	69.5
4. Nurse answer the call for the patient who is restrained as soon as possible	30	31.6	39	41.1	26	27.4
5. Nurse check the patients at least every two hours to make sure they are in the proper position	31	32.6	51	53.7	13	13.7
6. Nurse inspect the skin of the patient who is restraint for abrasion or skin tears during bathing	4	4.2	6	6.3	85	89.5
7. Nurse tells family members why the patient is being restrained	0	0.0	15	15.8	80	84.2
8. Nurse explains to the patient why the restraint is being applied	7	7.4	32	33.7	56	58.9
9. Nurse tells the patient when the restraint will be removed	14	14.7	29	30.5	52	54.7
10. More patients are restrained when there are short of staff than when we are fully staffed	38	40.0	44	46.3	13	13.7
11. Staff members work together to discover ways to control patients' behavior other than the use of physical restraints	18	18.9	58	61.1	19	20.0
12. Nurse frequently assess if the restraint should be removed	10	10.5	82	86.3	3	3.2
13. When physical restraint is applied, nurse record type of restraint used, the reason for adopting it, the time when the application commences, and the related nursing care required.	56	58.9	18	18.9	21	22.1
14. nurse frequently evaluate and record the effect of physical restraint when it is applied to a patient	60	63.2	13	13.7	22	23.2
<b>Total practice score (42)</b>			<b>No.</b>		<b>%</b>	
▪ <b>Poor ( less than 25.2)</b>			<b>2</b>		<b>2.1</b>	
▪ <b>Moderate ( between 25.2 to 33,6)</b>			<b>90</b>		<b>94.7</b>	
▪ <b>Good ( greater than 33.6)</b>			<b>3</b>		<b>3.2</b>	

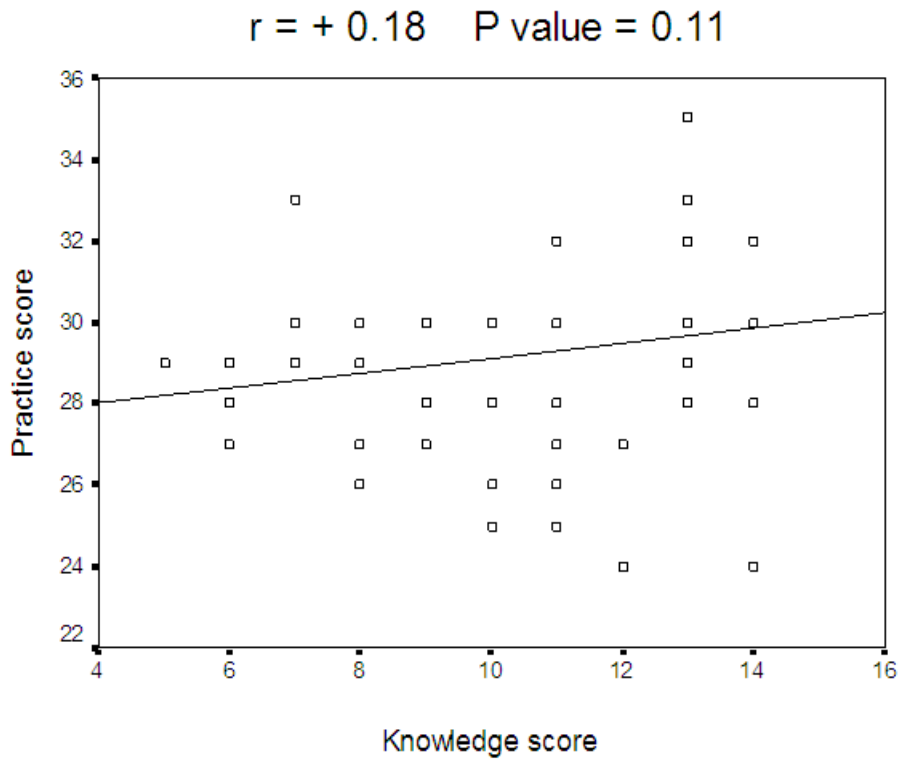


Figure (1): Correlation between nurses' knowledge and practice score

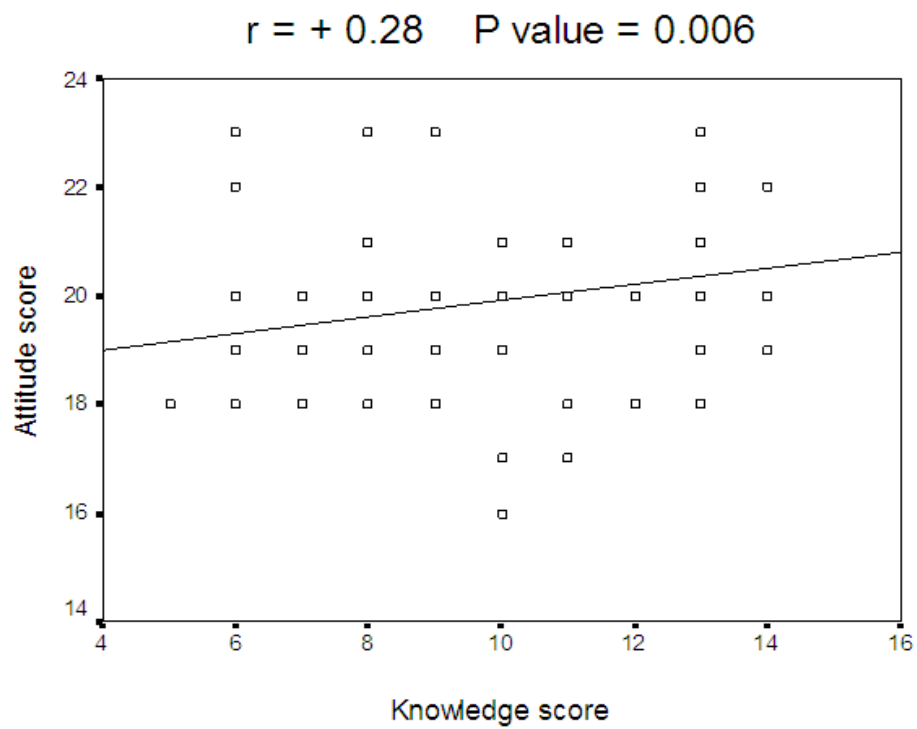
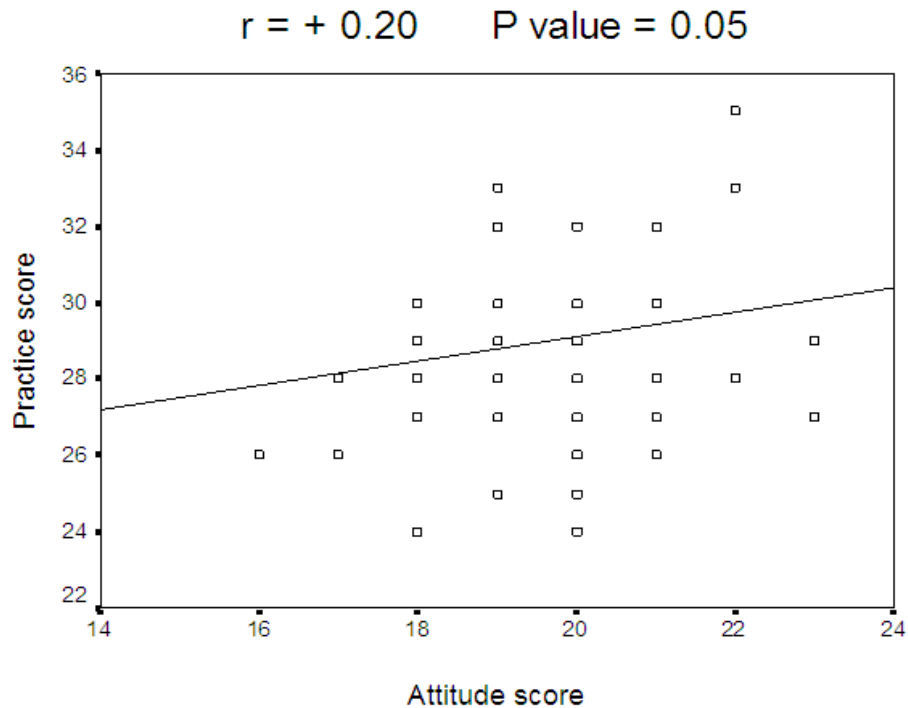


Figure (2): Correlation between nurses' knowledge and attitude score



**Figure (3): Correlation between nurses' attitude and practice score**

**Table (6): Relationship between nurses' knowledge, attitude and practice towards the use of physical restraints and degree of qualification of the studied nurses**

	Qualification			F test	P value
	Technical degree N = 55	Diploma N - 9	Baccalaureate N = 31		
▪ <b>Total knowledge</b> X ± SD	9.77±2.32	9.22±2.95	10.56±1.59	2.93	0.23
▪ <b>Total attitude</b> X ± SD	19.33±1.41	18.90±1.33	20.44±1.52	17.80	<0.001
▪ <b>Total practice</b> X ± SD	28.22±1.20	27.94±2.05	29.8±2.25	11.22	0.004

F : fisher exact test.

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