



## Use of restraints in patient care; knowledge and perception of nurses and nurse interns : A cross sectional study in south India.

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### Abstract:

**Introduction :** Restraints are the devices that limit the movements of patients. It prevents the fall and accidental injuries in the hospital setting. Restraints could be physical or chemical. The role of nurse is very important when a patient is on restraint. Nurses should be vigilant while selecting, applying the restraint and thereafter regarding respecting and maintaining dignity of the patient.

**Aim :** To assess and compare the knowledge and perception of nurses and nurse interns towards restraints.

**Materials and methods :** The study used a descriptive correlative research design. Ethical clearance was obtained from institutional ethics committee, permission obtained from concerned authority and informed consent was taken from the study participants. Using simple random sampling technique 100 (50 nurses and 50 nurse interns) study participants were selected. Data was collected using structured knowledge questionnaire and structured perception scale. The data was analyzed using descriptive and inferential statistics.

**Results:** Majority (84%) of nurses belong to 20-25 years of age, 92% were females, 56% of them studied General Nursing and Midwifery, 82% had 1-3 years of experience and most (20%) of them were working in the medical ward. Whereas all the interns were females, in the age group of 20-25 years and majority (38%) of them were working in medical ward. Majority (52%) of nurses had average knowledge, whereas 50% of interns had good knowledge. There was a significant difference between the mean knowledge scores of nurses and interns ( $p < 0.05$ ). The majority of staff nurses (80%) and the interns (92%) had positive perception towards restraints. The study also found a positive correlation between knowledge and perception of nurses ( $r = 0.178$ ) as well as interns ( $r = 0.364$ ) towards restraints.

**Conclusion:** The study concluded that majority of nurses had average knowledge and nurse interns have good knowledge whereas both the groups had a positive perception towards restraints.

**Key words:** Restraints, Knowledge, Perception, Nurses, Nurse interns.

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### INTRODUCTION

Restraints are the measures or conditions to keep someone or something under control. In health care settings physical (use of an equipment) and chemical (medication) restraints are commonly used to immobilize the client (Smithard and Randhava 2022). among the clients (Horsburg 2004). Restraints are usually used when clients' are confused, physically Restraints deprive, restrict the liberty or freedom of action or movement harmful to themselves and others and where there is a high chance of removal of life support medical

devices, falling and getting injured. Though the clients exhibit this behavior the treatment regimen to be continued, and when the alternative methods are inadequate or contraindicated (Martin 2002, Nasrate et al 2017, Eser et al 2007) restraints become the choice. But many a time health care professionals try to reduce those behaviors by

using different measures like settling the attendant with patients, lowering bed height, raising bed rails, and using the sedating medication before physical restraint (Kassew

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et al 2020).

Restraints are widely used in Intensive Care Units (ICU) but at the same time practice of restraining the clients is also observed in wards especially the psychiatric wards. It is a fact that clients have the right to receive ethically appropriate care. Though restraints have become a part of medical care, health professionals need to follow ethical guidelines before, during and after restraining the client. It is believed that restraint is justifiable irrespective of capacity or consent if it is being used to maintain a life sustaining treatment (Lakatos 2020). On the other hand it was also argued that the use of restraint is a moral wrong and if implemented without informed consent, it is an impermissible violation of clients' liberty (Crutchfield et al 2019). Thus it is essential to maintain the autonomy and dignity of clients while restraints are being used.

Around 80% of critically ill clients who are admitted to the ICU may require to be physically restrained due to the presence of agitation, confusion, sleeplessness, and disruptive behaviors (David et al 2022). Health professionals in the ICU use physical restraint to prevent interference in treatment procedures and protection from harm. It is highly preferred when chemical restraint is associated with long term sedation and risk of psychosis (Martin 2002).

Literature reports the prevalence of physical restraint use among critically ill patients ranged from 62% to 79% worldwide (David et al 2022, Rose et al 2016, Suliman et al 2017). Nurses play an important role in the application of physical and chemical restraints to patients. Their major role is to select the appropriate type of restraint, applying it safely, assess the patient condition and respond for the same.

Nurses' knowledge and attitudes regarding restraints is an important factor for delivering quality care. Nurses with a higher level of knowledge and better attitudes regarding restraints contribute to improving their practice on the application of restraints and alternative strategies in the treatment of their

clients. Again, this could minimize physical, psychological, ethical dilemma and problems associated with restraint (Mion 2008). Studies have reported that the nurses' have a low level of knowledge about the use, purpose, and complications of restraints (Huang et al 2009, Gandhi et al 2018, Negmet al 2013). A cross sectional study conducted showed that nurses have a moderate level of knowledge towards the use of physical restraints. Most of the nurses did not know the exact reason for the restraint (Eskandari et al 2017).

Researchers have revealed that restrained patients in the ICU encounter prolonged hospital stays, and suffer adverse psychological and physical consequences like agitation, aggression, limb edema, and skin laceration at the restraint site, and fall which results in a poor quality of health care (Rose 2016). It is also studied that more than half of critically ill patients have restrained and they have faced complications from the restraints application due to inefficiently applied restraints as there was no sufficient guidelines and regulations on the use of physical restraints (Martin 2002).

Nurse interns are also the members of health care team and the future nurses. They should be provided with a good training to bring them up as good professionals. Their knowledge and attitude regarding restraints will also influence their training and the client care provided by them.

Restraints have been used routinely in the clinical setting. Despite this, there is no clear regulatory guidelines concerning this issue. Additionally it is necessary to ensure the nurses have good knowledge as well as attitude and they practice competently the application of restraints so as to provide comprehensive client care. Hence, the aim of this study was to assess the knowledge and perception of the nurses and nurse interns towards the physical and chemical restraints in selected tertiary care hospital.

### Materials and methods

The present descriptive correlative was



conducted at a 1050 bedded multispecialty tertiary care teaching hospital. Ethical approval was obtained from the Institutional Ethics Committee (Protocol No : YEC 2/ 804). The study population comprised of nurses and nurse interns of the hospital. Simple random sampling technique was used to select 50 nurses and 50 nurse interns as study participants. [Sample size was calculated using single population proportion with 95% power and 5% level of significance, the estimated sample size was 96. But the investigators selected 100 study participants. G\* power was used in the calculation]. It was ensured that nurses with more than one year of experience and 4<sup>th</sup> year BSc nursing students during their internship posting in the hospital were taken as sample. Nurses and interns who have undergone special training on restraints were excluded from the study.

**Study procedure**

Formal permission from concerned hospital authority was obtained for the study. Informed consent was taken from the participants. The tool were administered to the sample and they took around 20-25 minutes to complete the questionnaire. Knowledge of nurses and interns was assessed by a structured knowledge questionnaire on restraints consisting of 24 items. Perception scale was used to assess the perception towards restraints which comprised of 12 items. Demographic proforma of study participants had 5 items. These tools were validated by subject experts and were found reliable. Investigators arbitrarily graded the knowledge based on the scores obtained as Good (17-24), average (9-16) and poor ( $\leq 09$ ). For the perception scale maximum possible score was 60 and it was graded as positive perception ( $\geq 30$ ) and negative perception ( $< 30$ ).

**Statistical analysis**

Statistical analysis was performed using SPSS V.22.0 (Statistical Package for the Social Sciences) . Demographic data , Knowledge and perception of the nurses and interns were analyzed by frequency and percentage. Paired t test used to compare the mean knowledge and perception scores of nurses and interns. Chi Square test computed to find the association of knowledge and perception scores with

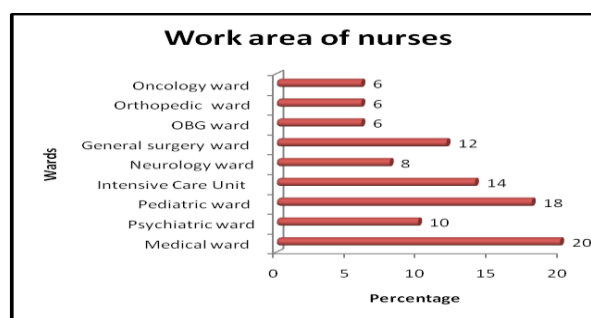
selected demographic variables ( $p < 0.05$  was considered as significant). Pearson correlation coefficient was used to assess the correlation between knowledge and perception of nurses and interns.

**Result :**

**Table 1:** Description of demographic variables of nurses n=50

Sl No	Variables	f(%)
1	<b>Age in years</b>	
	20-25	42 (84)
	26-30	3 (6)
	31-35	2 (4)
2	<b>Gender</b>	
	Male	4 (8)
	Female	46 (92)
3	<b>Qualification</b>	
	General Nursing and Midwifery	28 (56)
	BSc. Nursing	20 (40)
	Post Basic BSc. Nursing	2 (4)
4	<b>Experience in years</b>	
	1- 3	41 (82)
	4-6	1 (2)
	7-10	1 (2)
	> 10	7 (14)

Data in table 1 shows the demographic characteristics of nurses. Figure 1 depicts the area of work of nurses. But among the interns, all belong to 20-25 years of age, all were females. Majority (38%) were posted on medical wards, 14% in psychiatric ward, 8% in pediatric ward, 12% in ICU, 8% in neurology ward, 14% in OBG ward and 6% in orthopedic ward.



**Fig 1:** Work area of nurses

**Table 2:** Comparison of overall mean , SD and median of knowledge scores

Maximum possible scores	Groups	Mean $\pm$ SD	Median	Mode	Range
24	Nurses	12.46 $\pm$ 5.57	12	9	3 - 24
	Interns	15.28 $\pm$ 5.12	17	18	4 - 23



**Table 3 :** Comparison of overall mean , SD and median of perception scores

Maximum possible scores	Groups	Mean±SD	Median	Mode	Range
60	Nurses	39.62±11.03	41.50	40	12-55
	Interns	40.52±7.35	40.50	34	29-56

**Table 4:** Comparison of mean scores of knowledge and perception of staff nurses and interns

Pair between	Paired differences				Paired t test	df	p value
	Mean	SD	Std. Error of mean	95% Confidence Interval of the Difference Lower Upper			
Knowledge of nurses and interns	-2.82	8.40	1.19	-5.21 -0.43	-2.38	49	0.022*
Perception of nurses and interns	-0.90	13.63	1.93	-4.78 2.98	-0.47	49	0.643

\*Significant p< 0.05

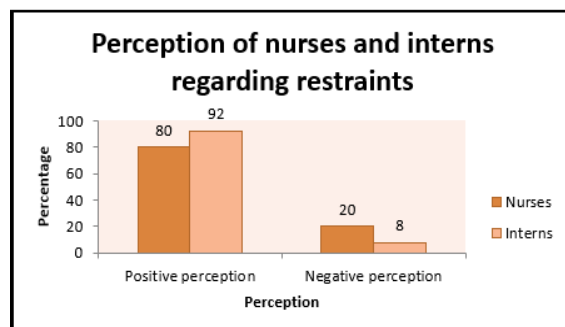
Data in table 2 shows that the mean knowledge scores of interns were higher than that of nurses and table 4 shows that there is a significant difference in the mean knowledge scores of nurses and interns (p<0.05). According to table 3 there is no much difference in the mean perception scores of nurses and interns.

**Table 5:** Comparison of higher scores obtained by both nurses and interns regarding restraints on a knowledge questionnaire

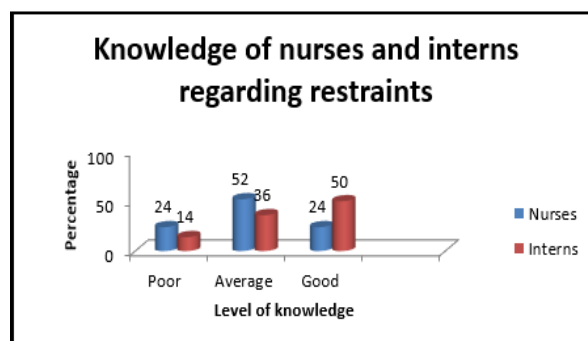
Sl No	Knowledge Item	Number of nurses answered correctly	Number of interns answered correctly
1.	Doctors order is a must for application of restraints	39	37
2.	How often physical restraints to be removed and reapplied	24	29
3.	Uses of physical restraints	34	43
4.	Examples for chemical restraints	40	40
5.	Examples for physical restraints	24	36
6.	Documentation in restraining the patient	28	34
7.	the group of patients requiring physical restraints	38	43
8.	Prevention of complications of clove hitch restraint	29	29
9.	Use of pediatric restraints	29	36
10.	Responsibility of nurse before application of restraint	33	34
11.	Types of pediatric restraints	32	42
12.	Use of elbow restraint	31	40
13.	Meaning of restraints	30	34

Table 5 compares the higher scores obtained

by both nurses and interns regarding restraints on a knowledge questionnaire . On the other hand both nurses and interns knowledge was low in areas like care to be taken while applying restraint, complications of restraints, frequency of observation/assessment of patient on restraint, and how to fix the restraints. But overall interns exhibited better knowledge than nurses regarding restraints. Regarding the perception items, nurses scored higher for the statements like application of restraints is ethically wrong, patients become more disoriented while on restraints and homicidal or aggressive patients can only be controlled by physical restraints. Interns scored higher for the statement like patients and family have the right to refuse restraints, nurses have the legal responsibility to take informed consent, hospital should have proper policies and protocols for restraint application, have enough knowledge to take care a restrained client, restraints are essential in terms of patient safety, restraint should be the last option to choose while patient care. For both the groups the scores are less for the items like nurses have the right to stop application of restraint, provided effectively used e-escalative technique and client feels loss of dignity when placed on restraints.



**Fig 2:** Perception of nurses and interns regarding restraints



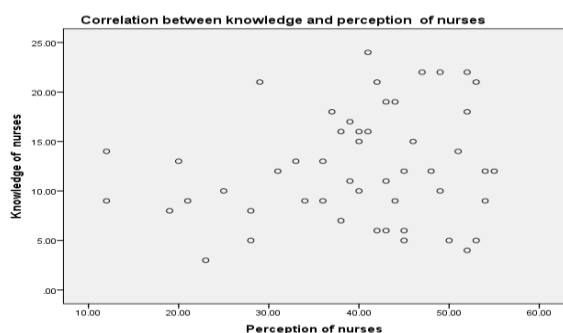
**Fig 3:** Knowledge level of nurses and interns regarding restraints



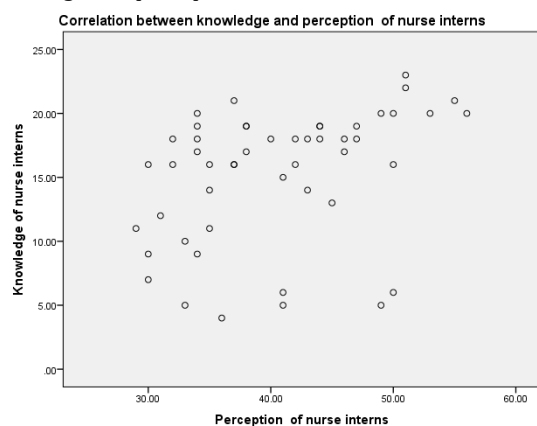
restraints

Figure 2 shows that majority of both nurses (80%) and nurse interns (92%) have a positive perception regarding restraints. Data in fig 2 shows that interns have better knowledge than nurses regarding restraints.

The study found a positive correlation between knowledge and perception of nurses ( $r= 0.178$ ) [Fig 4] as well as interns ( $r=0.364$ ) [Fig 5] towards restraints. The study also showed a significant association of knowledge scores of interns with the work area ( $p<0.05$ ).



**Fig 4:** Scatter diagram showing the correlation between knowledge and perception of nurses



**Fig 5:** Scatter diagram showing the correlation between knowledge and perception of interns

## Discussion

Restraints are widely used in various wards in the hospital for different reasons (Martin 2002). But they can result in prolonged hospital stays, complications, and ethical issues as a result of nurses' inadequate knowledge, negative attitude and improper practices regarding their use (Kirk 2015, Balci 2018, Martin 2002, Negm 2013). Improving nurses' knowledge, attitude, and practice regarding restraints is essential to prevent the complications of it and to enhance nursing care

services.

This study reflected that the majority (52%) of nurses had average knowledge. Majority (80%) of nurses had positive perception. The findings were consistent with the study which showed that majority (56.7%) of staff nurses had poor knowledge and 43.3% had fair level of knowledge (Gandhi 2018). Yet some other studies showed that nurses attitude was higher (Kaya 2018, Elsol 2018). But few studies also showed that nurses attitude was negative towards restraints (Elsol 2018, Gotkas 2018).

The present study showed that majority (84%) of the nurses were in the age group of 20-25 years, These findings are in consistent with a study conducted to determine the nurses' knowledge and practice towards physical restraints among critically ill patients at Saudi Arabia where majority (56.7%) of nurses were in the age group of 21-30 years (Sharifi 2020). It is also seen that in the current study, majority (56%) of the nurses had a diploma education and these findings are contradicted by a study finding where majority (71.7%) had the bachelor degree of nursing (Kalula 2016). Regarding the years of experience, in the present study, majority (82%) nurses had 1-3 years of experience where as in a previous study majority (63.3%) had more than 5 years of experience (Kalula 2016).

In the present study majority (20%) of the staff nurses were working in medical ward, a previous study showed that among the study participants, majority (54.5%), were working in acute medical wards, 44.7% in surgical ward and 0.8% in maternity ward (Sharifi 2020).

The findings of the present study indicated that there is no significant association of knowledge and perception scores of nurses with the selected demographic variables. But there is significant association of knowledge scores of interns with the work area ( $p<0.05$ ). These findings are in consistent with a study carried out to assess the nurses' perception towards physical restraints among hospitalized elderly people at Iran, which showed a significant relationship with samples age, work experience but had no significant relationship with their gender and educational degree (Kassew 2020). The present study showed a statistically significant positive correlation between knowledge and perception of nurses regarding use of restraints. These findings are consistent

with a study where it showed a significant positive correlation between the practice and knowledge nurses working in Intensive Care Unit (Kalula 2016).

### Limitations

The study was limited to a single setting at a specific geographic area and the limited sample size, which imposes limits on larger generalization.

### Conclusions

Nurses working in the hospital had a moderate knowledge and positive perception regarding restraints, whereas the nurse interns had a good knowledge and positive perception. However, a higher level of knowledge and a better perception regarding the subject is essential. Providing continuous education programs to nurses and interns would enhance their knowledge and improve their perception which in turn can deliver quality care to the clients. It is also recommended to conduct similar studies on large samples and in different settings. Knowledge and perception of nurses working in intensive care, psychiatric units, paediatric units and other general wards could be assessed and compared.

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