

## A Descriptive Study to Evaluate Registered Nurse's Knowledge, Attitude and Practice of Physical Restraints in King Salman Armed Forces Hospital in Tabuk, Kingdom of Saudi Arabia in 2019

Rosro Babu Thomas<sup>1\*</sup>, Dr. Attiya Mohammad Al Zahrani<sup>2</sup>, Amal Samih Ismail Saleh<sup>3</sup>, Ashwaq Oudah S Al Balawi<sup>4</sup>, Fatmah Ali Khubrani<sup>5</sup>

<sup>1</sup>MSN, BSN, RN, Clinical Resource Nurse, King Salman Armed Forces Hospital – North Western Region (KSAFH), King Abdul Aziz Rd Military Area, Tabuk 47512, Saudi Arabia

<sup>2</sup>Major General, Director of King Salman Armed Forces Hospital in Northwestern Region, King Abdul Aziz Rd Military Area, Tabuk 47512, Saudi Arabia

<sup>3</sup>BSN, PGDIP, RN, Director of Nursing, King Salman Armed Forces Hospital – North Western Region (KSAFH), King Abdul Aziz Rd Military Area, Tabuk 47512, Saudi Arabia

<sup>4</sup>BSN, RN, Head Nurse, Female Medical, King Salman Armed Forces Hospital – North Western Region (KSAFH), King Abdul Aziz Rd Military Area, Tabuk 47512, Saudi Arabia

<sup>5</sup>BSN, RN, Head Nurse, Female Surgical, King Salman Armed Forces Hospital – North Western Region (KSAFH), King Abdul Aziz Rd Military Area, Tabuk 47512, Saudi Arabia

DOI: [10.36348/sjnhc.2021.v04i12.002](https://doi.org/10.36348/sjnhc.2021.v04i12.002)

| Received: 16.10.2021 | Accepted: 25.11.2021 | Published: 04.12.2021

\*Corresponding author: Rosro Babu Thomas

### Abstract

The study was conducted Kingdom of Saudi Arabia in 2019. This study aimed to assess knowledge, attitude and practice towards use of physical restraints among nurses those working acute In-patient care settings. Participants were Registered nurses who are working in tertiary care centre. Descriptive design was adopted; sample was selected through convenient sampling technique. The inclusion criteria for this study were Registered nurses working in inpatient non-critical areas total of 138 nurses were eligible. The final sample consisted of 125 nurses with 86% response, majorities were females (88.8%). 70% of the participants were between age of 31-40 years. Higher numbers had completed Bachelors in Nursing Bachelors in Nursing. 79% participant's position as registered nurse III and 54.4% were shift in charge of their units. The mean score on knowledge scale was above average of  $26.31 \pm 2.60$  that indicates good knowledge about use of restraints. Mean score on attitude was  $30.57 \pm 4.56$  and suggest favourable attitudes among the participants towards use of physical restraints. The mean score of practices related to use of restraints was  $35.36 \pm 2.17$ . These findings indicate good practice related to use of physical restraints among nurses, with the median Knowledge Score Total being highest in Males. However, there was no significant difference between gender with attitude and practice of the nurses with related use of physical restraints. In relation to designation There was a significant association found between the 3 nurses' groups in terms of Knowledge Score Total ( $\chi^2 = 6.990$ ,  $p = 0.030$ ), with the median Knowledge Score Total being highest in the Designation: Registered Nurse II group.

**Keywords:** Acute patient care, Nurses, Physical restraints, knowledge, attitude, practice, nursing care.

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## INTRODUCTION

### Problem Description

The use of Restraints within the health care sectors is a common practice worldwide. Physical restraints refer to any physical methods of restricting a person's freedom of movement, physical activity or normal access to his or her body [1]. Use of restraints in health care setting is a necessity to reduce the risk of harm to the patients and others [2]. On the other hand,

use of physical restraints among acutely ill patients, not to interfere with treatment and/or not to damage to the physical environment.

### Available Knowledge

Earlier studies report that elderly and persons with mental illness have a higher rate of physical restraint use worldwide [3]. Nurses are ethically obligated to ensure the patient's basic rights and

restraints must not be used for coercion, punishment, discipline, or staff convenience [4]. Furthermore, nurses are the health care providers who initiate restraint use and attribute its use to ensuring the safety of the restrained and the others [5]. Their role starts with the selection of appropriate restraint device and ends with modifying the patient care plan based on an hourly assessment of the patient's response and physical condition [6]. The nurse's positive attitude towards physical restraints may influence their practice in general [7]. A recent study among psychiatric nurses showed ambivalent attitudes towards use of physical restraints [8]. It was argued that nurse's views and attitudes toward the use of physical restraints may create conflicts with patient's rights, including their autonomy in making decisions for their own care [9]. In a recent cross sectional surveys from India and Australia, most psychiatrists believe that coercion violates the patient's rights and may harm therapeutic relationships [10]. Since nurse's knowledge and attitude towards physical restraints is closely related to their practice, it is critical to assess nurse's knowledge, attitude and practice towards use of physical restraints to develop standardized guidelines in health care settings. Further, there were no formal studies on this issue from Kingdom of Saudi Arabia. Hence, the present study was aimed to assess knowledge, attitude and practice towards use of physical restraints among nurses those working acute in-patient care settings.

### Rationale

Staff subconsciously restrain patients and reduce their liberties despite agreeing that patient autonomy should be upheld-a necessary evil to maintain

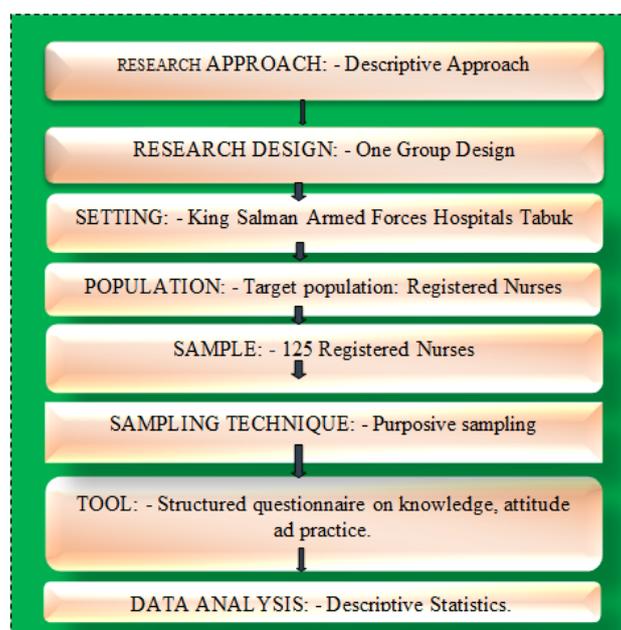
a duty of care. Whilst the use of restraints is often justified to ensure patient care and prevent injury, it is not without consequence. There are physical and psychological health risks such as pressure sores from the inability to mobilise, or the brewing of anger and frustration when denied access to everyday actions. The reasons why restraints are used, whilst stemming from maintaining patient safety, are often due to low staffing levels and the inability to constantly watch at-risk patients due to a large workload. Inadequate training is another factor; by improving education in direct and indirect restraint and providing alternative methods, more ethical decisions and positive outcomes can be implemented. Healthcare professionals are reluctant to use restraint but often conduct it without realising it; assessing their understanding of restraint and providing education to raise awareness of the consequences of direct and indirect methods would result in positive steps toward reducing their use at the same time as looking to provide alternatives to uphold patient care whilst maintaining their dignity and liberty.

Physical restraints may cause injuries if improperly used or if they are used in the absence of continuous monitoring. Nursing staff who use physical restraints often lack sufficient related knowledge, which may increase the risk to patient safety.

### Specific Aims

This study investigates the present for nursing staff knowledge, attitudes, practise related to physical-restraints.

## MATERIALS AND METHODS



In the view of the nature of the problem and to accomplish the objectives of the study descriptive approach was used to assess the knowledge, attitude

and practices of nurses working non-critical care areas. The questionnaire was developed by Dr: Lorna Suen, Assistant professor School of nursing, The Hong Kong

Polytechnic university, Hunghom, Hong Kong, original version in English and translated into Arabic. In addition, author give permission to use and modify their tool, through electronically. The modified content of tool along with the problem statement, objectives, blue print and criteria check list were submitted to experts from the field of Medical Surgical Nursing and medicine. They were requested to give their opinion on accuracy, relevance, and appropriateness of the items in the tool. After the scrutiny, they were found to be adequate and relevant. After validation from experts' corrections were made. The final draft of the tool contained 6 socio demographic characteristics and 36 statements related nurse's knowledge attitude and practice regarding use of physical restraints

The present study was carried out among Registered nurses who are working in tertiary care centre in Kingdom of Saudi Arabia in the month of October and November 2019. Descriptive design was adopted for the present study. The study sample was selected through convenient sampling technique. The inclusion criteria for this study were Registered nurses working in inpatient non-critical areas in King Salman Armed Forces Hospital, Tabuk, KSA. A total of 138 nurses were eligible to participate in the study. However, eight of the participants were on vacation during data collection, three of them declined to participate and two of the incomplete questionnaires were discarded. Hence, the final sample consisted of 125 nurses with 86% response rate.

Data were collected through self-administered questionnaire which comprised of 4 parts:

1. Socio demographic profile: included background information of the participants such as age, gender, education, nationality, designation, the participants responsibilities including in-charge duty in the unit.
2. Knowledge questionnaire about the use of physical restraints: used to assess nurses' knowledge, towards using the Physical Restraints and consisted of 11 items (3 items 8, 12, 16, are negatively worded items score reversed) with 3 points Likert scale questionnaire and responses such as 'agree, disagree, undecided. The responses were scored with a three for "strongly agree", to a one for "undecided". Thus, high scores with cut off point

>26 reflected positive attitudes and low scores with cut off  $\leq 26$  reflected negative attitudes (potential range: 11–33)

3. Attitudes toward the use of physical restraints: This was a four-point Likert scale with 12 items (4 negatively worded items) used to assess nurses' attitudes towards use of physical restraints.<sup>11</sup>The responses were scored with a four for "strongly agree", to a one for "strongly disagree". Thus, high scores reflected positive attitudes and low scores reflected negative attitudes. Items 21, 26, 27 and 29 were negative and their scores were reversed. Thus, high scores with cut off point  $>24$  reflected positive attitudes and low scores with cut off  $\leq 24$  reflected negative attitudes (potential range: 12–48)
4. Nurses' practice towards uses of physical restraints: This part addresses nurses' practice about uses of physical restraints in acute care in patient settings. The participants were asked to respond to a three-point Likert scale ranged from 'always' (3), sometimes (2) to never (1). Item no 38 was a negative item and the responses need to be reversed. Thus, a score of 13 indicates the most undesirable practice and a score of 39 the best practice in terms of restraint use. The reliability coefficients for the knowledge, attitudes and practice scales were 0.72, 0.75 and 0.7 respectively [11].

The questionnaire was piloted among 10 of participants and found that the study was feasible. Hence no necessary modifications were made. The principal investigator and co-investigator approached the nurses various in patients' departments of acute patient's care units and the objective and procedure of the study were explained to potential participants, met the participants individually at their workplaces and explained the purpose of the research data that would be collected from the nurses who were willing to participate in the study. Participants were reminded that they could withdraw from the study at any time and confidentiality of the data was assured. After obtaining written informed consent, the self-reported questionnaires were distributed to participants.

To interpret the level of knowledge, practice and attitude scores subjected as follows:

| ITEM              | POTENTIAL RANGE | CUT OF POINT |
|-------------------|-----------------|--------------|
| Good knowledge    | 11–33           | $\leq 26$    |
| Positive attitude | 12–48           | $\leq 24$    |
| Best practise     | 13-39           | $\leq 13$    |

### Analysis

For the Statistical analysis, Data were coded and recorded in MS Excel spreadsheet program. negatively worded items were reverse coded. SPSS v23 (IBM Corp.) was used for data analysis. Descriptive statistics were elaborated in the form of means/standard deviations and medians/IQRs for continuous variables,

and frequencies and percentages for categorical variables. Data were presented in a graphical manner wherever appropriate for data visualization using histograms/box-and-whisker plots/column charts for continuous data and bar charts/pie charts for categorical data. Group comparisons for continuously distributed data were made using independent sample 't' test when

comparing two groups. If data were found to be non-normally distributed, appropriate non-parametric tests in the form of Wilcoxon Test were used. Chi-squared test was used for group comparisons for categorical data. In case the expected frequency in the contingency tables was found to be  $<5$  for  $>25\%$  of the cells, Fisher's Exact test was used instead. Linear correlation between two continuous variables was explored using Pearson's correlation (if the data were normally distributed) and Spearman's correlation (for non-normally distributed data). Statistical significance was kept at  $p < 0.05$ .

### Ethical Consideration

The proposed study was conducted after the approval research ethics committee, Ethical approval was obtained from King Salman Armed Forces Hospital Research and Ethics Committee on the 30<sup>th</sup> October 2019 (Ethics ID Number KSAFH REC 2019 286). Permission was obtained from the hospital directors. Consent of each subject was obtained before starting the data collection. Assurance was given to them that the anonymity of each individual would be maintained.

### Conflict of Interest

Rosro Babu Thomas, Dr. Attiya Bin Mohammad Al Zahrani, Amal samiah Ismail Saleh, Ashwaq Oudah S Albalawi, Fathima Ali Kubrani, declare, that they have no conflict of interest.

### Human rights statements and informed consent:

The proposed study was conducted after the approval research ethics committee, Permission was obtained from the hospital directors. Consent of each subject was obtained before starting the data collection. Assurance was given to them that the anonymity of each individual would be maintained.

## RESULTS AND DISCUSSION

### RESULT

This study represents 86% of the nurses working in acute care setting at Northwest armed forces hospital, Tabuk. Among 125 respondents, a majority were females (88.8%). 70% of the participants were between age of 31-40 years. More number of them were finished Bachelors in Nursing. 79% participants position as registered nurse III and 54.4% were shift in charge of their units.

**Table 1: Summary of Basic Details**

| Basic Details                | Mean $\pm$ SD    Median (IQR)    Min-Max    Frequency (%) |
|------------------------------|---|
| <b>Age</b>                   |   |
| 22-30 Years                  | 48 (38.4%)  |
| 31-40 Years                  | 70 (56.0%)  |
| 41-50 Years                  | 6 (4.8%)  |
| 51-60 Years                  | 1 (0.8%)  |
| <b>Gender</b>                |   |
| Male                         | 14 (11.2%)  |
| Female                       | 111 (88.8%)   |
| <b>Education</b>             |   |
| Diploma in Nursing           | 35 (28.0%)  |
| Bachelors in Nursing         | 87 (69.6%)  |
| Masters in Nursing           | 3 (2.4%)  |
| <b>Nationality</b>           |   |
| Philipino                    | 64 (51.2%)  |
| Indian                       | 36 (28.8%)  |
| Saudi                        | 18 (14.4%)  |
| South African                | 1 (0.8%)  |
| Others                       | 6 (4.8%)  |
| <b>Designation</b>           |   |
| Registered Nurse I           | 20 (16.0%)  |
| Registered Nurse II          | 26 (20.8%)  |
| Registered Nurse III         | 79 (63.2%)  |
| <b>In charge Nurse (Yes)</b> | 68 (54.4%)  |

With regard to participant's responses to knowledge about use of restraints, a majority of them agreed that 'physical restraints are safety garments designed to prevent injury' (88.8%), 'restraints should be released every 2 hours; if the patient is awake' (66.4%), and 'when patient is restrained skin breakdown may increase' (75.2%). majority (63.2%) disagreed to the item, 'Restraints should be put on

snugly so that there is no space between the restraint and the patient's skin' 72.8% of participants disagreed. While 34.4% agreed 'restraints should be used when one cannot watch the patient closely' and 2.4% participants cannot decide. Most of the participants answered correctly to the items related to the rights of the patients i.e., 'patients are allowed to refuse to be placed in a restraint' (82.4%) and 'physical restraints

require a consent form from the family member’ (64.8%). unfortunately, 52.8% of responses agreed that ‘good alternatives of restrain does not exist’ and 45.6% disagree and 28% undecided that ‘death have been linked to the use of vest restraints and 45.6% disagreed

the statement. However, the mean score on knowledge scale was above average of  $26.31 \pm 2.60$  (maximum possible= 33), that indicates good knowledge about use of restraints among the participants (Figure 1).

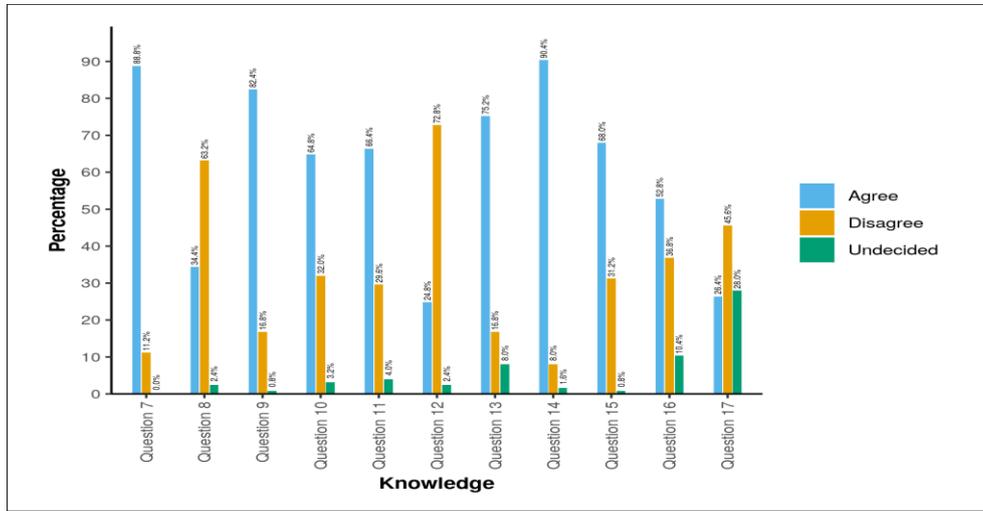


Figure 1: Frequency and percentage of knowledge table score of samples on physical restraints

Figure 2 depicts the participants’ attitudes towards use of physical restraints among acute care patients. A majority of the participants agreed with 18 and 19 items i.e. ‘I feel that family members have the right to refuse the use of restraints’ (48.8%) and ‘If I were the patient, I feel I should have the right to refuse or resist when restraints are placed on me’ (52%). Unfortunately, nearly half of the participants ( $n=60$ , 48%) disapproved that ‘patient suffers a loss of dignity when placed in restraints. While 33.6% of the participants felt guilty, majority of them disagreed for placing a patient in restraints. Similarly, 61.6% participants did not feel embarrassed when the family enters the room of a patient who is restrained. However, more than 60% of the participants felt bad if the patients got upset or became more disoriented after the restraints

had been applied. It was disappointing to note that 48.8% of the participants opined that ‘applying restraints assures legal protection to his/her self and his/her hospital’ even they have clear policy for restraining the patient. It was also disappointing that more than 66.4% of nurses agreed the statement ‘I believe that restraints decrease the number of patients who fall. It was good 61.6% and respectively 25.6% (disagreed and strongly disagreed) that the main reason that restraints are used is that our hospital is short staffed. Mean score on this section was  $30.57 \pm 4.56$  (ranged from 20 to 47) of a maximum possible of 48 and suggest favorable attitudes among the participants towards use of physical restraints among acute in-patient care settings.

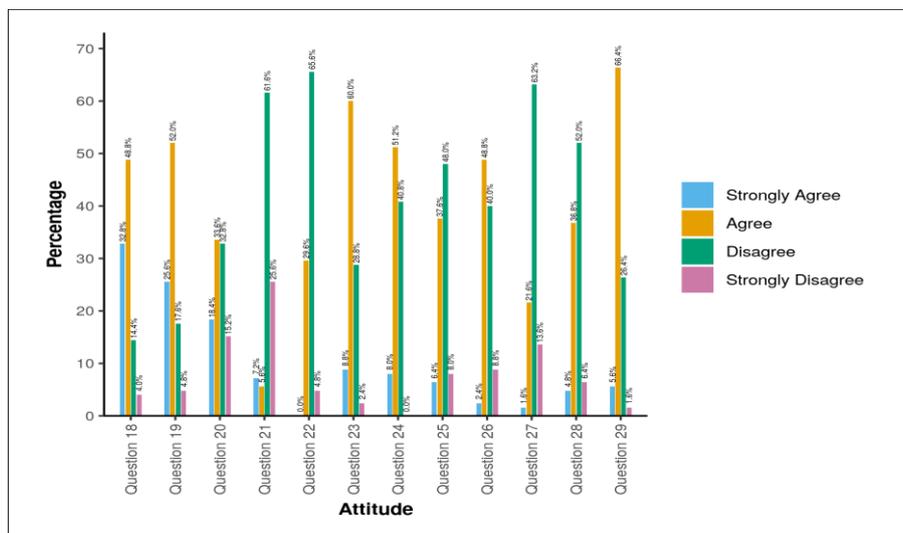


Figure 2: Frequency and percentage of attitude table score of samples on physical restraints

Figure 3 shows addresses the nurses' practices with regard to use of physical restraints in acute care patients. A majority (73.6% / 25.6%) of the nurses agreed that they always/sometimes try alternative nursing measures before restraining the patient. More number of the participants stated that always restrains the patients only with physicians' order and they suggest the doctor when they feel that patient doesn't need to be restrained. Majority of the participants expressed that they check the restraint every two hours to make sure they are in position and inspect the skin of

the patient for abrasions or skin tears. Favourably, 81.6% opined that patient are never restrained when there is a shortage of staff. Similarly, a greater number of the nurses felt sometimes than always work together to discover ways to control patients' behaviour than use of restraints and assesses if the restraint to be removed. The mean score of nurses' practices related to use of restraints in acute care settings was  $35.36 \pm 2.17$  (28.0 - 39.0) of maximum possible of 39. These findings indicate good practice related to use of physical restraints among nurses.

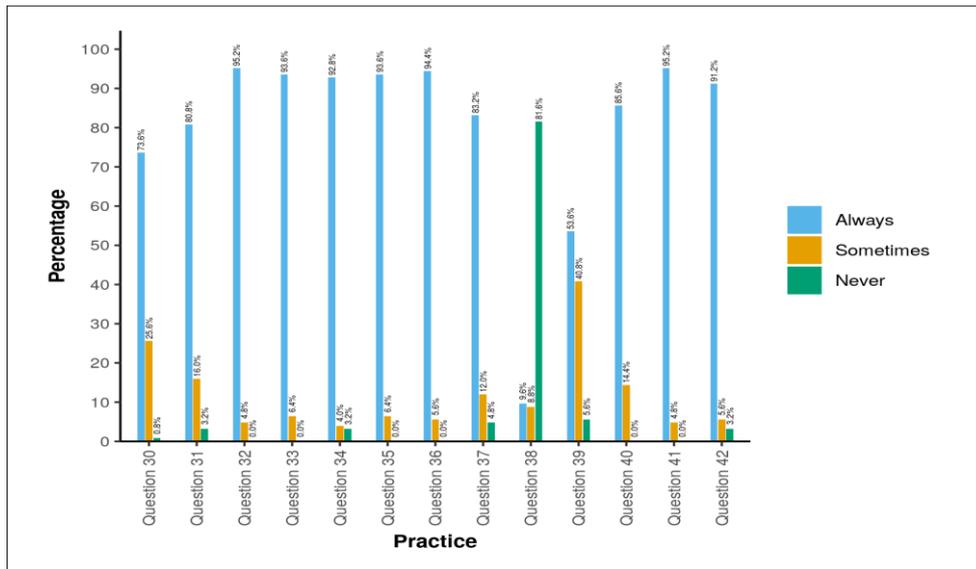


Figure 3: Frequency and percentage of practice table score of samples on physical restraints

- The mean Knowledge Score Total was  $26.31 \pm 2.60$ .
- The mean Attitude Score Total was  $30.57 \pm 4.56$ .
- The mean Practice Score Total was  $35.36 \pm 2.17$ .

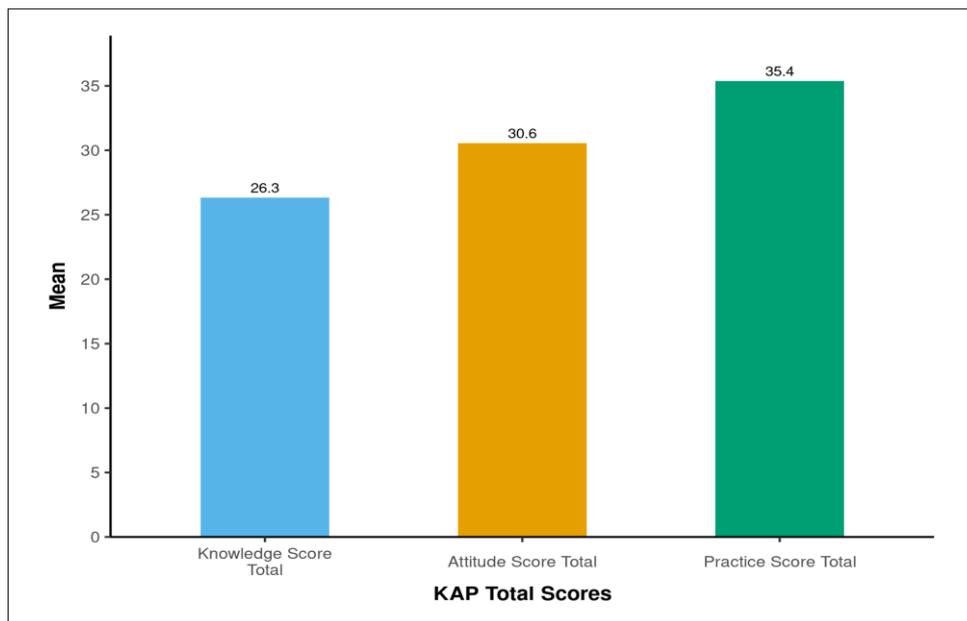


Figure 4: Distribution of samples in terms of Knowledge Attitude and Practice Total Scores

On correlation analysis, it was revealed statistically significant association between gender with knowledge table statements that When a patient is restrained, skin breakdown may increase and when a patient is restrained, skin breakdown may increase and other statement that when a patient is restrained in bed, the restraint should not be attached to the side rail. ( $p < 0.001$ ) thus There was a significant association between the male and female nurses in terms of Knowledge Score Total ( $W = 1183.500$ ,  $p = 0.001$ ), with the median Knowledge Score Total being highest in Male, and attitude, when Attitude Score table statements that 'I feel that family members have the right to refuse the use of restraints,' 'I feel guilty placing a patient in restraints,' 'It makes me feel bad when patients become more disoriented after the restraint has been applied', Practice Score statement that, 'I tell family members why the patient is restrained. And More patients are restrained when we are short of staff than we have a full staff. ( $p < 0.05$ ) of the participants. Males had better knowledge, attitudes than females towards use of physical restraints, but female have favorable attitude.

## DISCUSSION INTERPRETATION

This was a descriptive study that assessed nurses' knowledge, attitude and practice towards physical restraints in non-critical care patients. The findings revealed that nurse had better knowledge and favorable attitudes as reflected in use of physical restraints in acute non critical care patients. There were significant association between gender with knowledge not with practices and attitude of the participants towards use of the physical restraints.

In the present study, majority (75.2%) of the nurses agreed that skin breakdown may increase when patients are restrained. These findings were in line with earlier studies that found 'dehydration, choking, circulatory and skin problems, loss of muscle strength and mobility, pressure sores, incontinence and injury from associated physical/mechanical restraint, injury from other patients, increased psychological distress and, in rare circumstances, death were the adverse events associated with use of physical restraints among patients [8]. Although, 80% of nurses in the current study, endorsed good knowledge and positive attitudes towards rights of patients, less than one quarter of nurses disagreed that 'family members have the right to refuse the use of Physical restraints'. These findings were in consistent with earlier studies conducted among Psychiatric nurses [8] and ICU nurses [12]. These findings suggest need to improve nurses' knowledge on patients' rights and ethical issues related to use of physical restraints [8].

In supporting the previous studies [12], nearly 70% of the participants in this study disagree or strongly disagree with the statement "A patient suffers a

loss of dignity when placed in restraints". It is unfortunate to note the nurses' unawareness about the feelings of the non-critical care patients when they were restrained and this negative attitude also increases the use of physical restraints. Published evidence report that patients as a result of being restrained reported that they felt angry, helpless, sad, and powerless, punished, embarrassed, and that their right to autonomy and privacy has been violated, in addition to a feeling of loss of self-worth, degradation, demoralization and humiliation while they are restrained [13]. Earlier research report array of emotional reactions among nurses while restraining the patients such as anxiety, anger, feeling bored or distressed, crying, inadequacy, hopelessness, frustration, fear, guilt, dissatisfaction, isolation, being overwhelmed, feeling drained, vengeance and repugnance [14]. In line with these findings, the present study also showed guilty and disagreement among the participants to place patients on restraints.

In the current study, nearly three fourths of the participants did not feel embarrassed when the family enters the room of a patient who is restrained and support the earlier evidence [12]. Further nearly 51% of the participants did not feel bad if the patients got upset or become more disoriented after the restraints have been applied. Earlier studies also indicate no emotional reaction among nurses [14]. These findings could be attributed to the fact the practice of physical restraints had become so ritualized that it does not provoke any reaction among nurses [15].

A vast majority of the nurses in this study agreed that they would try alternative nursing measures before restraining the patients. These results were in concordance with previous research among nurses that found several alternative methods that could be used before applying Physical Restraints such as providing companionship and supervision, offering physical and diversional activities, playing soft music, manipulating environments.<sup>8</sup> Interestingly, no nurses in this study agreed that they never recorded on the nursing charts about the type and the reason for applying restraints. These findings were inconsistent with earlier studies that indicate less than half of the nurses do not record data about PR use in patient's chart [8]. However, majority (81.6%) say they never felt that more patients are restrained when they are short of staff. These findings were consistent with other studies<sup>12</sup> and suggest the need for creating awareness among nurses regarding the reasons for applying the restraints.

The result of the current study is consistent with earlier studies [12] found that more than 50% of the patients were restrained physically and removed without written medical orders. However, this the present study where 95.2% of the nurses restrain the patients with doctors' order. In line with previous findings [8], in the present study nurses, more than 41

years of age found to be favorable attitudes than nurses with younger age. These findings suggest that better experience improves nurses' decision making about proper use of physical restraints. In the current study, Male nurses had better knowledge and positive attitudes towards use of physical restraints and these findings were in support of the earlier evidence [16]. In addition, nurses' knowledge, attitude and practice scores towards use of physical restraints were positively correlated. These findings were in agreement with other studies [12].

## LIMITATIONS

The present study has certain limitations such as descriptive survey, small and convenient sampling and the data was collected from a single setting. Hence, it is difficult to generalize the findings. However, the study contributes to the literature by assessing nurses' knowledge, attitudes and practices towards use of physical restraints in non-critical care settings which is a common practice. The findings may be helpful to nursing administrators to develop standardized protocols about using of physical restraints among non-critical care patients. And this study can be performed in both critical care and non-critical care areas nurse and to evaluate their different practices, attitude and knowledge.

## CONCLUSION AND RECOMMENDATION

### CONCLUSION

This study revealed good knowledge and attitude among nurses about using physical restraints in non-critical care settings, but practices to improve further, in line with earlier findings [8], our study also showed that nurses with higher education had good practice related to use of physical restraints. These findings indicate the need for continuing education about use of physical restraints among nurses which may help to protect patients.

### RECOMMENDATION

Based on the study it is recommended that,

1. A similar kind of study can be conducted with a control group on larger population.
2. A comparative study can be conducted between student and registered nurses regarding physical restraints.
3. The same type of study can be conducted in critical care settings with teaching module.
4. A similar type of study can be conducted in multidisciplinary teams by using multistage random sampling method.
5. An experimental study can be conducted as a time series design i.e., collecting data at different points of time.
6. A comparative study can be done between a Psychiatric institution and a non-Psychiatric institution by using simple random method.
7. A study can be conducted to assess the knowledge regarding restraints among bystanders.

## ACKNOWLEDGEMENT

First of all, I thank my Lord Almighty for His Heavenly blessings and abundant grace, which strengthened me in each and every step throughout this Endeavour. My heartfelt and faithful thanks to Ms. Loraine Chetty, Research coordinator Nursing Department, KSAFH Tabuk for her hard work, effort, interest immense patience and sincerity to mould this study in a successful way, and has given inspiration, encouragement and laid another strong step in research and made it lively and an everlasting one. My heartfelt gratitude to my wife Mrs. Jwala Jolly & my parents Mr: Babu Thoms and Mrs: Kunjumole Babu & my brother Mr. Rojos Babu Thomas. Lastly, I am very grateful to my colleagues who is working in non-critical care area without them my study would have been impossible, who were very kind and cooperative. Finally I acknowledge Dr: Lorna Suen, Assistant professor School of nursing, The Hong Kong Polytechnic university, Hunghom, Hong Kong given permission for my study tool.

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