

Sri Lankan nurses' Knowledge, Attitude and Practice towards use of physical restraints in psychiatric patients

Navodya Sewwandi Dasanayake

General Sir John Kotelawala Defence University

Virangi Indrachapa Nethmini

General Sir John Kotelawala Defence University

Nishanthi Manjula Kumari

General Sir John Kotelawala Defence University

Kumudumali Hansika Peiris

General Sir John Kotelawala Defence University

Ganeshmurthi Vijayachithra

General Sir John Kotelawala Defence University

Susil Menaka Gunarathna

General Sir John Kotelawala Defence University

Lahiru Sandaruwan Galgamuwa (✉ lahiruahs@yahoo.com)

Open University of Sri Lanka

Chandima Kumara

General Sir John Kotelawala Defence University

Neil Fernando

General Sir John Kotelawala Defence University

Research article

Keywords: Knowledge, Attitudes, Practices, Physical restraint

Posted Date: October 21st, 2019

DOI: <https://doi.org/10.21203/rs.2.14534/v2>

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Abstract

Background Physical restraint was one of the ancient interventions used to control psychiatric patients. It should be used for a short period, and a registered nurse is responsible to protect rights, treat with dignity and provide high quality care during patient restraints. The objective of the study was to assess knowledge, attitudes and practices on physical restraining among nurses in psychiatric wards and units in Sri Lanka. **Methods** A study was conducted in a Mental Health institution in Sri Lanka and a pretested self-administered questionnaire was used for data collection. The associations among the knowledge, attitudes, practices and socio-demographic factors were assessed. **Results** Knowledge of nursing officers' regarding physical restraints was at a satisfactory level and increasing with working experience, getting formal education of physical restraining. However, there is no significant association between the knowledge on physical restraints and working experience, formal education of physical restraints and working places. In addition, most of attitudes and practices regarding physical restraints among nurses were not significantly associated with working experience, formal education of physical restraints and working places. **Conclusions** Knowledge, attitudes and practices regarding physical restraints among nurses were in satisfactory level. Continuous in-service education programs are important to improve knowledge, attitudes and practices on physical restraints for psychiatry patients.

Background

Every human being has the right to live and maintain their personal liberty, protect their safety and personal integrity. In psychiatric practice, there are situations where outpatients or inpatients act violently in the hospital setting. Hospital staff needs to face challenges when managing those kinds of situations without harming the patients and surrounding others [1].

Physical restraint is a common intervention in psychiatric patient treatment when managing the aggression and violent behaviors [2]. Even though, some people view that the usage of restraint in mental health care system as a violation and breaking human rights of psychiatric patients, nurses use it frequently use it as a therapeutic modality to reduce the risk of violent behaviors of psychiatric patients [3]. However, a range of ethical and clinical questions arise with usage of physical restraints among psychiatric patients [4,5]. Therefore, protect the rights of the patient, treat with dignity and provide high quality competent care during restrain and seclusion are major responsibilities of a nurse.

Nurses generally initiate restraint use and their positive attitudes may influence to ensuring the safety of the restrained and the rights of the others [6-8]. Since the practice of physical restraints is closely related to nurses' knowledge and attitude, it is important to assess their knowledge, attitude and practice towards physical restraints in health care settings. However, there were no formal studies of knowledge, attitudes and practices of nurses towards physical restraints in health sector in Sri Lanka. Hence, the present study was aimed to determine current knowledge, attitudes and practices regarding physical restraints among nurses working in a psychiatric health care institute in Sri Lanka. Proper knowledge regarding, positive attitudes and good practices of physical restraining improves the patient safety and increases the quality of care. Assessing and estimating knowledge, attitudes and practices among nurses are important to organize awareness programs regarding the policies related to physical restraining in a psychiatric setting to prevent restraint related unwanted physical and mental harm, indirectly, to prevent the violation of human rights of the psychiatric patients and to improve the quality of nursing care.

Methods

Study setting and population

A cross-sectional study was conducted among nurses working at the National Institute of Mental Health in Sri Lanka from January to June 2018. National Institute of Mental Health is the largest tertiary care hospital in Sri Lanka intends to achieve the mental health needs of the community. Institute consists of many specialized units in order to achieve mental health goals of its' residents such as a psychiatric intensive care unit, perinatal psychiatric unit, forensic psychiatry unit, adolescent psychiatric unit and learning disability units. The study was conducted at the National Institute of Mental Health (NIMH) as it is the center of excellence which provides mental health care in Sri Lanka.

The sample size was calculated using the equation of $n = z^2 p (1-p) / d^2$ where n = sample size, $z = 1.96$; critical value of specified confidence at 95% confidence interval. This is the first study of physical restraining among nurses in Sri Lanka and there is no previous study to help estimate (P). In such a situation, the authors of this study recommended that ' n ' should be calculated using $P = 0.5$ (50%) and the minimal sample size was calculated as 267. The sample was further increased by 20% to account for contingencies such as non-response or recording error. Therefore, the final sample size was 308. Registered nurses working in NIMH were included while nurses on maternity leave, participating in in-service education programs during the data collection period and the nurses who didn't give the informed written consent were excluded from the study.

Data collection and data collection tools

Study participants were selected by non-probability convenience sampling method. Data collection was done using a pre-tested, self-administered questionnaire which contained both open and close-ended questions. A pilot study was conducted using the same questionnaire for ten nursing officers in a psychiatric unit in a general hospital in Sri Lanka to assess the feasibility of the study and drawbacks of the questionnaire.

Forty-seven questions under four sections were created to achieve the aim of the study. First part consisted demographic characteristics, current working place, education qualification and in-service education regarding physical restraining. Second part contained thirteen questions to assess knowledge regarding physical restraining. A total of 13 questions were asked to assess knowledge regarding physical restraining. A scoring system was used to analyze responses to closed ended questions on knowledge. Every correct response was given score of "1" and incorrect response was given "0". Any nursing officer who did not answered was considered as an incorrect response. Knowledge score has been categorized in to two groups by considering the median of the values.

Third part consisted of fourteen questions to assess nurses' attitudes regarding physical restraints. Response to the attitude was measured on a 4-point Likert scale. Participants were asked to respond each of the items on whether they 'Strongly agree', 'Agree', 'Disagree' or 'Strongly disagree'. Each item was given a score of "4" for 'strongly agree' to "1" for 'Strongly disagree' and vice versa for negatively phrased items. Items 3, 4, 9 and 10 were negative items and their scores were reversed.

fourth part included fourteen questions on practices regarding physical restraints. Practices such as alternative nursing measures, involving experienced nurses, explanation about restraint to the patients and caregivers, expression of warning signs and check the patient during the period of restraint and after were assessed under the fourth session. Most of the questions were reflective towards more favorable practices. Each question was given a score of "3" for 'Always' to "1" for 'Never' having adopted such practices and the negative items was reverse scored. Item 8 and 9 were negative items and needed to be reverse scored.

The questionnaire was initially developed in English and then back translations were done into Sinhala and Tamil which are the native languages of Sri Lankans.

Data was collected after obtaining written informed consent from nursing officers after giving a clear explanation of the study to the nursing officers.

The questionnaire was distributed among the nursing officers after the objectives and the procedure of the study were explained. Each participant was informed they could withdraw from the study at any time. And also information sheets and volunteer consent forms were handed over to the sample prior to the data collection to give enough time to understand the information sheet. Informed written consent was obtained by a volunteer consent form from each participant after clear explanation of the purpose of the study. The information sheet was developed according to recommended format.

Data was collected within a minimum time period without a contaminating with the other wards. The decision to participate in the research was decided by themselves without any influence of the investigators. The participants completed the questionnaires without any interruption to their duties.

Confidentiality of the research was ensured at all stages of the study. The names of participants were not recorded on the questionnaires and an index number was given to each participant for maintaining the confidentiality. The information collected from this research project kept confidential. All the collected data were stored in a password protected electronic device and it will be permanently deleted after 5 years. Internal consistency reliability for each part of the questionnaire was highly reliable (Cronbach's alpha was > 0.90).

Privacy and confidentiality were ensured at all stages of the research. The names of participants were not recorded on the questionnaires and an index number was given to each participant for maintaining privacy and confidentiality. The questionnaire didn't contain any sensitive questions which could psychological trauma or embarrassment to the participants in any way. Contributors were given the opportunity to ask questions and register any complains via contacting the investigators and the supervisor through giving contact details. Moreover, participants were informed that they could withdraw from the study at any time without any consequence to their duties.

Confidentiality of the database was maintained under a completely secured way and all data were handled only by the investigators of the study. Data and other information weren't given to any third parties. All collected data will be stored in an electronic device for 5 years under password protected and they will be permanently deleted. Hard copies will be kept under lock and key for 5 years and they will be burned according to international norms.

Statistical analysis

All the questionnaires were numbered accordingly and entered into the Excel worksheet. All the multiple data were entered according to the cord system. Data was analyzed by Statistical Package for Social Sciences (SPSS Version 23). Descriptive statistics were performed on the responses to the knowledge, attitudes and practices individually.

A total of 13 questions were asked to assess knowledge regarding physical restraining. The chi - square was used to assess knowledge with three demographic characteristics; working experience, whether to get a formal education about physical restrain and the working place.

Participants were asked to respond each of the items on whether they 'Agree', 'Disagree' or 'Strongly disagree'. Each item was given a score of "4" for 'strongly agree' to "1" for 'strongly disagree'. Response to the attitude was measured on a 4-point Likert scale with numbers referring to 1 = Strongly disagree, 2 = Disagree, 3 = Agree and 4 = Strongly agree. And vice versa for negatively phrased items.

Most of the questions were reflective towards more favorable practices. Each question was given a score of "3" for 'Always' to "1" for 'Never' having adopted such practices and the negative items was reverse scored. Then the level of practice was cross tabulated against the selected variables. Cronbach's alpha was used to estimate the reliability of a psychometric test in statistic.

Results

Table 1. Socio demographic characteristics of nursing officers

The majority of nursing officers were aware about the situation where physical restraining must be initiated and agreed that the period of physical restraining should be limited to a minimum time period to remove the risk of violent and aggressive behavior of the patient. In addition, almost all of the participants believed that it is important to consider the patient's basic human needs (i.e; nutritional food and fluid, regular personal hygiene, bathroom and exercises) during retraining. The majority of the nurses were aware that they can be charged with assault if the restraining is applied unreasonably and agreed to establish and standardize investigation policy and procedures related to complaints arising from restraint episodes. However, two third of respondents were unaware of the danger of choking in the prone position during restraining (Table 2).

Table 2. Knowledge of nursing officers' on physical restraining

Half of nurses agreed that family members of the patient have rights to refuse restraining. More than half of the participants either strongly agreed or agreed that they don't feel guilty when placing patients in restraints. However, 88% of nurses disagreed that they feel the main reason of using restraints because the less number of nurses were available in a ward or a special unit. The majority of respondents were strongly agreed or agreed with the patient suffered a loss of dignity when restraints are placed. More than 80% of nursing officers felt that they have the right to refuse to place patients in restraints (Table 3). Most of attitudes regarding physical restraining among nurses were not significantly associated with working experience, formal education of physical restraining and working places (Table 4).

Table 3. Attitudes of nursing officers' towards physical restraints

Table 4. Association of attitudes with working and education experience of nurses

More than half of the nurses indicated that they always try alternative nursing measures before restraints a patient. When making the decision of restraining a patient all the respondents make the decision only with the physicians' order. The majority of them indicated that they always check the patient at least every 2 hours to make sure that they are in the proper position. The majority of respondents had a habit of documentation of the time applied, type of the restraint, the reason for applying the restraint and the related nursing care required. In addition, more than 80% of nurses always inform to the family members about the reason of the patient is being restrained and when a physical restraint was applied. However, less number of nurses (19%) indicated that they would always performed

Range of Motion (ROM) exercises to the restrained extremities once an in their working times while 11% of nurses never performed ROM during restraining (Table 5). However, most of practices regarding physical restraining among nurses were not significantly associated with working experience, formal education of physical restraints and working places (Table 6).

Table 5. Practices of nursing officers' towards physical restraints

Table 6. Association of practices with working and education experience of nurses

Discussion

Physical restraint is an effective intervention in the care of the psychiatric patient to control them externally as well as internally to over their socially accepted behavior [2]. This Study focused on knowledge level, attitudes and practices regarding the aspect of physical restraining and specially regarding the patient care during retraining.

Physical restraining provides positive effect to the patient when it is applied in the correct way. Various studies have been conducted worldwide regarding physical restraining and its related areas have shown that improper application of restrain have been directly affected for the physical injuries and deaths. [9,10]. Mainly these failures occurred due to the lack of knowledge of nursing officers and their attitudes towards the use of restrain to the psychiatric patients and nonstandard restrain methods [10]. Improper application of physical restraining and restrain failures are the major causes for physical injuries and deaths. Dehydration, choking, circulatory and skin problems, loss of strength and mobility are the most common injuries associated with restrained failure.

Restrain or seclusion should be used as last option to prevent vulnerability and harm to self or others [11]. It should be used for a short time period and shouldn't be used as a punishment [11]. This study showed a considerable proportion of nurses had satisfactory knowledge regarding physical restraining. Not only that most of them were aware of what is physically restrained, where physical restraints must be initiated and the time period that it should be continued. Present study identified that more than 90% of nursing officers were agreed with physical restraints must be initiated after trying all other less restrictive alternatives have been proven ineffective, which is similar to many studies reported that physical restraining applied when all other measures were failed [12-14]. This proves that the nursing officers have not felt guilty of physically restraining as they have tried every other means before the procedure with the patients and also the nurses have well balanced the ethical principles. A study in Hong Kong revealed that most of the nurses had little awareness regarding alternatives [15]. In addition, verbal therapy, verbal de-escalation, decreasing stimuli, offering support and communication were suggested as alternatives instead of physical restraining [12,14,16].

When considering basic needs of the patients while restraining, most of the nurses believed to provide basic needs such as foods, personal hygiene, bathroom facilities and exercises for restraining patients. A study in Turkey reported that the needs of the patient, such as nutrition and exertion were not met during the restraining period [17].

In the present study, the majority of respondents were aware that the restraining should be placed without harming the patient comfort and safety and were always checked for cyanotic appearance and cool temperature of the wrist while restraining. This is similar to the study in Iran reported that improper applying techniques may lead to violate the comfort and safety of the patient during restraining [2]. Similarly, a study in Portugal emphasized that all

participants consider about the skin integrity in the application of physical restraint [12]. However, in the present study two third of nurses were unaware of the danger of restraining a patient while lying prone position and more than 80% of them were not believed that restraining can increase the risk of strangulation.

Although, the nurses have good knowledge and attitudes towards patients, approximately half of nurses disagreed the right of family members to refuse physical restraints. This is inconsistent with previous studies carried out among nurses working in mental health care institutes [18,19]

This suggests that the nurses should be aware of ethical issues related to use of physical restraints.

Physical restraints have harmful psychological effects for the patient as well as staff, mainly due to the staff behaviors and attitudes [14]. The present study showed that majority of nurses had positive attitudes regarding physical restraints and satisfactory level of awareness regarding psychological impact of restraint to the patient. These findings were supported by several studies, which revealed that positive attitudes of the nurses may associate with positive effects of restraints [2]. More than half of the respondents agreed with that they felt guilty when placing a patient in restrain and they felt embarrassed when family members of the patient enters the room of a patient who was restraint. This might be due to the human perspective rooted in the Sri Lankan context. These findings were supported by a study in Turkey, which stated that 65.6% of nurses felt disappointed when they restrain or decided to restrain a patient [17].

According to the National Institute of health and Care Excellence (NICE) guidelines on the management of disturbed/violent behavior in inpatient psychiatric settings, the dignity of the patient must be respected throughout the physical restraining procedure [20]. In the present study, majority of the participants were explained reasons for family members and patients why physical restraining was applied. A similar study conducted by Okanil and others (2009) stated that patients were mostly not informed about the reason of applying restraining on them [17]. Majority of the Sri Lankan nurses are trained in a much disciplined environment where the nursing ethics are taught as a mandatory component. However, another study has published 56% of participants never inform family members and residents why the resident is being restrained and study also highlighted the need of increase awareness of patients' rights and ethical issues related to physical restraining [21]. Physical restraints promote human dignity if it is applied properly to promote the patient's wellbeing [12].

With the agreement of this study, the major reason for initiating restrains was a shortage of staff [12,21]. Studies High number of staff showed shorter restrain duration and restraint were used more often when there was a shortage of staff [21].

There is a need for conducting in-service education programs regarding newly update policies and procedures regarding physical restraining in a hospital setting as more than half of respondents didn't received in-service education reading this area. Conducting continuous in-service education programs based on best practice guidelines for nurses are essential to enhance their practice regarding use of restraints.

Many complications arising from restraining failures and danger of physical restraining can be avoided by continuing professional training, education and updating new policies and procedures. Specialized training and establishment, implementation and adhere to protocols and best practices are important to minimize danger and complications of physical and chemical restrains [2,16]. According to the current study, the majority of nursing officers were not participating in in-service education regarding physical restraining. There were a significant association of in-service education regarding physical restraining with knowledge, attitudes and practices of

nursing officers and the majority of participants didn't receive any in-service program regarding that aspect. This study provided significant information which will be very useful in psychiatric nursing field to provide quality nursing care. This study benefits, health care professionals who are interested in this field and any other relevant parties who are interested in future research studies regarding this area of study.

In the present study, the majority of nurses agreed to apply alternative nursing measures such as offering physical activities, playing music and supervision before restraining the patients. Similarly a study in India reported that majority of psychiatric nurses agreed to use alternative methods before applying Physical Restraints [22].

In the present study, nurses had a formal education about physical restraints, working in psychiatric wards and had more than five years of experience showed more favorable attitudes and practices. This suggests that formal education and working experience enhance decision making of nurses regarding the application of physical restraints [23].

Conclusions

Present study revealed that the nurses had good knowledge and positive attitudes about using physical restraints in mental health care institutes. The practices of the nursing officers towards physical restraining found to be favorable. Development of local policies for restraining with comprehensive descriptions and procedures and appraising new policies and procedures should be implemented. This study identified that educated and experienced nurses had good attitudes and practices related to use of physical restraints. Continuing education session about physical restraints among nurses help to improve the knowledge and human rights of psychiatric patients. In addition, introduce alternatives for restraints such as, evaluation of medical status, close monitoring by staff, progressive ambulation plan, offering snacks, frequent bed checks, relaxing music, limiting excess noises, low bed, use sedations, reorienting frequently and etc. It enhances the patient safety and quality of nursing care given to the patient. Furthermore, it is essential to identify patients' attitudes regarding restraint use so future studies should be developed to find out their attitudes towards restraints.

Abbreviations

ISPN; International Society of Psychiatric-mental health Nurses, NIMH; National Institute of Mental Health, APNA; American Psychiatric Nurses Association, LIP; Licensed Independent Practitioner, NICE; National Institute of health and Care Excellence, WHO: World health organization;

Declarations

Ethics approval and consent to participate

Ethical approval was obtained from Ethical Review Committee, Faculty of Medicine, General Sir John Kotelawala Defence University to conduct the study. Further, the permission for data collection was taken from Ethical Review Committee, National Institute of Mental Health, Sri Lanka. All nurses were informed that their participation was voluntary and the procedure used did not pose any potential risk and their identities will be kept strictly confidential. Informed written consent forms were obtained from all participants and all information was kept in confidence.

Consent to publish

Not applicable.

Availability of data and materials

All data generated or analyzed during this study are included in this published article.

Competing interests

The authors declare that they have no competing interests.

Funding

This research received no specific grant from any funding agency in the public, commercial or not-for-profit sectors.

Author Contributions

CK and NF conceived and designed the experiments. NSD, VIN, NMK, KHP, GV and SMG performed the study. LSG, CK and NF involved to data interpretation and statistical analysis. LSG wrote the first draft of the manuscript. CK and NF critically revised the manuscript for intellectual content. All authors read and approved the final manuscript. LSG, CK and NF are guarantors of the paper.

Acknowledgements

We would like to express our deepest gratitude to the male and female nurses who participated in this study. It is our pleasure to thank the management, medical authorities and other health care workers in National Institute of Mental Health for their cooperation for this study. Our sincere thanks also go to the academic and non-academic staff of the Department of Nursing and Midwifery, Faculty of Allied Health Sciences, General Sir John Kotelawala Defence University, Sri Lanka for their continuous support.

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Tables

Table 1. Socio demographic characteristics of nursing officers

Characteristics	Category	Frequency	Percentage
Age (Years)	21-30	153	60.0
	31-40	75	29.4
	41-50	27	10.6
Working experience (Years)	Less than one	6	2.4
	1-5 years	162	63.5
	6-10 years	44	17.3
	>10 years	43	16.9
Current working ward/ unit	Acute ward	84	32.9
	Intermediate ward	68	26.7
	Others	103	40.4
Education qualifications	Diploma holders	240	94.1
	Degree holders	15	5.9
In-service education	Yes	103	40.4
regarding physical restraining	No	152	59.6

Table 2. Knowledge of nursing officers' on physical restraining

Item No.	Items of knowledge		Working experience (Years)			Education of physical restraining			Current working		
			≤ 5 years	> 5 years	p value	Yes	No	p value	Wards	Others	p value
1	Physical restrain is used as a last effort when all other less restrictive alternatives have been failed	Yes	192	95	0.670	113	174	0.043	173	114	0.476
		No	15	6		13	8		11	10	
2	The period of physical restraining must be limited to the minimum time required to remove the risk.	Yes	204	98	0.365	123	179	0.647	181	121	0.623
		No	3	3		3	3		3	3	
3	Physical restraint is used to control severely disturbed behavior, which is likely to cause harm to self, others or property.	Yes	204	96	0.07	122	178	0.596	181	119	0.194
		No	3	5		4	4		3	5	
4	Restraints should be used when one cannot observe the patient closely.	Yes	172	85	0.813	110	147	0.129	154	103	0.884
		No	35	16		16	35		30	21	
5	It is not required an order from the physician to initiate restraining in behavioral emergency.	Yes	100	41	0.202	62	79	0.315	86	55	0.680
		No	107	60		64	103		98	69	
6	Knowledge on performing a risk assessment before restraining to prevent unwanted harm.	Yes	204	93	0.004	124	173	0.118	175	122	0.128
		No	3	8		2	9		9	2	
7	Restraints should be put on tightly without space between the restraint and the patient's skin.	Yes	195	97	0.495	122	170	0.184	179	113	0.017
		No	12	4		4	12		5	11	
8	A patient should never be restrained while prone position in bed due to danger of choking.	Yes	77	29	0.141	40	66	0.412	64	42	0.869
		No	130	72		86	116		120	82	
9	Knowledge regarding fulfillment of basic needs of patients during restraining.	Yes	203	95	0.14	123	175	0.476	178	120	0.986
		No	4	6		3	7		6	4	
10	Knowledge on performing a review regarding the incident, successfulness, impact on the patient and staff after restraining.	Yes	202	98	0.774	125	175	0.098	179	121	0.872
		No	5	3		1	7		5	3	
11	Knowledge on necessity to establish and standardize investigation policy and procedures related to complaints arising from restraint episodes.	Yes	196	93	0.372	118	171	0.913	174	115	0.514
		No	11	8		8	11		10	9	
12	Use of restraint can harm the	Yes	135	55	0.068	77	113	0.862	108	82	0.188

therapeutic relationship and
violate

	the patients' self-esteem.	No	72	46		49	69		76	42	
13	A nurse can be charged with assault if he/she applies restraints unreasonably.	Yes	136	76	0.089	94	118	0.069	132	80	0.180
		No	71	25		32	64		52	44	

Table 3. Attitudes of nursing officers' on physical restraining

Items of attitudes	No. of participants (%)			
	Strongly agree	Agree	Disagree	Strongly disagree
I feel that family members of the patient have the right to refuse the use of restraints.	22 (8.6)	115 (45.1)	71 (27.8)	47 (18.4)
If I were the patient, I feel I should have the right to refuse placing restraints on me.	44 (18.0)	144 (56.5)	45 (17.6)	20 (7.8)
I don't feel guilty placing patients in restraints.	32 (12.5)	111 (43.5)	84 (32.9)	28 (11.0)
I feel that the main reason of using restraints is that low number of nurses are available in a shift.	7 (2.7)	23 (9.0)	112 (43.9)	113 (44.3)
I feel embarrassed when the family enters the ward of a patient who is restraints.	18 (7.1)	113 (44.3)	96 (37.6)	28 (11.0)
It makes me feel bad if the patient gets more upset after restraints are applied.	39 (15.3)	187 (73.3)	14 (5.5)	15 (5.9)
It makes me feel bad when patient become more disoriented after the restraints applied.	33 (12.9)	167 (65.5)	40 (15.7)	15 (5.9)
A patient suffers a loss of dignity when restraints are placed.	26 (10.2)	136 (53.3)	67 (26.3)	26 (10.2)
It is important to apply restraints to assure legal protection for myself and hospital.	2 (0.8)	5 (2.0)	118 (46.3)	130 (51.0)
I feel that placing a patient in restraint can decrease nursing care time.	10 (3.9)	42 (16.5)	130 (51.0)	73 (28.6)
I believe that restraints can increase the risk of strangulation.	6 (2.4)	36 (14.1)	131 (51.4)	82 (32.2)
In general, I feel knowledgeable about caring for a restrained patient.	82 (32.2)	157 (61.6)	7 (2.7)	9 (3.5)
I feel that nurses have the right to refuse to place patients in restraints.	61 (23.9)	151 (59.2)	27 (10.6)	16 (6.3)
The hospital is legally responsible to use of restraints to keep the patient safe.	112 (43.9)	138 (54.1)	1 (0.4)	4 (1.6)

Table 4. Association of attitudes with working and education experience of nurses

Items of attitudes	Working experience (Years)			Education of physical restraining			Current working places		
	≤ 5 years	> 5 years	p value	Yes	No	p value	Wards	Others	p value
I feel that family members of the patient have the right to refuse the use of restraints.	1.54 (0.87)	1.47 (0.85)	0.473	1.62 (0.84)	1.45 (0.88)	0.083	1.48 (0.88)	1.56 (0.84)	0.423
If I were the patient, I feel I should have the right to refuse placing restraints on me.	1.96 (0.83)	1.74 (0.78)	0.028	1.97 (0.77)	1.84 (0.85)	0.162	1.94 (0.82)	1.81 (0.82)	0.187
I don't feel guilty placing patients in restraints.	1.39 (0.84)	1.54 (0.86)	0.138	1.36 (0.78)	1.50 (0.89)	0.147	1.46 (0.88)	1.41 (0.81)	0.609
I feel that the main reason of using restraints is that low number of nurses are available in a shift.	2.26 (0.79)	2.32 (0.76)	0.523	2.29 (0.72)	2.26 (0.83)	0.742	2.30 (0.79)	2.24 (0.77)	0.531
I feel embarrassed when the family enters the ward of a patient who is restraints.	1.50 (0.77)	1.47 (0.77)	0.691	1.53 (0.79)	1.46 (0.76)	0.431	1.53 (0.71)	1.43 (0.85)	0.239
It makes me feel bad if the patient gets more upset after restraints are applied.	1.99 (0.71)	1.99 (0.66)	0.957	2.00 (0.73)	1.98 (0.67)	0.785	1.99 (0.70)	1.98 (0.69)	0.817
It makes me feel bad when patient become more disoriented after the restraints applied.	1.87 (0.74)	1.86 (0.66)	0.925	1.94 (0.75)	1.81 (0.68)	0.112	1.91 (0.71)	1.80 (0.71)	0.166
A patient suffers a loss of dignity when restraints are placed.	1.72 (0.78)	1.73 (0.68)	0.888	1.75 (0.73)	1.70 (0.76)	0.559	1.74 (0.76)	1.69 (0.73)	0.558
It is important to apply restraints to assure legal protection for myself and hospital.	2.50 (0.54)	2.48 (0.66)	0.700	2.52 (0.59)	2.48 (0.57)	0.574	2.51 (0.57)	2.48 (0.59)	0.660
I feel that placing a patient in restraint can decrease nursing care time.	2.04 (0.77)	2.07 (0.84)	0.75	2.10 (0.80)	2.02 (0.78)	0.391	2.08 (0.76)	2.01 (0.84)	0.460
I believe that restraints can increase the risk of strangulation.	1.02 (0.76)	0.70 (0.66)	<0.001	0.87 (0.73)	0.95 (0.75)	0.319	0.88 (0.71)	0.97 (0.79)	0.310
In general, I feel knowledgeable about caring for a restrained patient.	2.31 (0.62)	2.19 (0.64)	0.099	2.35 (0.57)	2.22 (0.66)	0.075	2.23 (0.60)	2.33 (0.67)	0.184
I feel that nurses have the right to refuse to place	2.14 (0.67)	1.93 (0.86)	0.017	2.18 (0.73)	2.00 (0.74)	0.034	2.02 (0.73)	2.16 (0.76)	0.093

patients in restraints.

The hospital is legally responsible to use of	2.50	2.35	0.027	2.46	2.45	0.822	2.49	2.40	0.166
	(0.55)	(0.64)		(0.60)	(0.57)		(0.57)	(0.60)	

restraints to keep the patient safe.

Results were reported as mean (SD)

Table 5. practices of nursing officers' towards physical restraining

Practices in nurses	No. of participants (%)		
	Always	Sometimes	Never
I try alternative nursing measures before restraining a patient.	196 (63.6)	110 (35.7)	2 (0.6)
When I restraint a patient, I make this decision only with the physicians' order.	164 (53.2)	144 (46.8)	0 (0)
We have a more skillful experienced nurse as a team leader throughout the restraint process.	118 (38.3)	163 (52.9)	27 (8.8)
When I feel that the patient does not need to be restrained, I make this suggestion to the doctor.	207 (67.2)	100 (32.5)	1 (0.3)
When I restraining a patient level of force applied must be justifiable, appropriate, reasonable & proportionate.	266 (86.4)	40 (13.0)	2 (0.6)
I check the patient at least every 2 hours to make sure they are in the proper position.	296 (96.1)	10 (3.2)	2 (0.6)
I tell family members why the patient is being restrained.	252 (81.8)	53 (17.2)	3 (1.0)
I never explain to the patient why the restraint is applied.	21 (6.8)	83 (26.9)	204 (66.2)
More patients are restrained when we are short of staff than when we are fully staffed.	10 (3.2)	77 (25.0)	221 (71.8)
When a physical restraint is applied, I document the time applied, type of the restraint, the reason for applying the restraint and the related nursing care required.	291 (94.5)	17 (5.5)	0 (0)
I always alert on warning signs of violent behavior such as, angry facial expressions, restlessness, Shouting.	287 (93.2)	16 (5.2)	5 (1.6)
I always assess the cyanotic appearance and cool temperature in the hand of a patient who wearing a wrist restraint.	299 (97.1)	9 (2.9)	0 (0)
One staff member should assess patient's head, neck airway, breathing and vital signs while restraining.	288 (93.5)	18 (5.8)	2 (0.6)
I performed range of motion exercises to the restrained extremities once a shift.	62 (20.1)	208 (67.5)	38 (12.3)

Table 6. Association of practices with working and education experience of nurses

Practices in nurses	Working experience (Years)			Education of physical restraining		p value	Current working places		p value
	≤ 5 years	> 5 years	p value	Yes	No		Wards	Others	
I try alternative nursing measures before restraining a patient.	1.66 (0.48)	1.58 (0.54)	0.170	1.68 (0.47)	1.59 (0.51)	0.122	1.63 (0.50)	1.63 (0.50)	0.981
When I restraint a patient, I make this decision only with the physicians' order.	1.55 (0.50)	1.50 (0.50)	0.501	1.48 (0.50)	1.57 (0.50)	0.158	1.51 (0.50)	1.56 (0.50)	0.356
We have a more skillful experienced nurse as a team leader throughout the restraint process.	1.29 (0.61)	1.31 (0.64)	0.821	1.30 (0.60)	1.29 (0.64)	0.885	1.32 (0.59)	1.27 (0.66)	0.497
When I feel that the patient does not need to be restrained, I make this suggestion to the doctor.	1.69 (0.47)	1.62 (0.49)	0.249	1.59 (0.51)	1.73 (0.45)	0.013	1.68 (0.48)	1.65 (0.48)	0.477
When I restraining a patient level of force applied must be justifiable, appropriate, reasonable & proportionate.	1.85 (0.38)	1.87 (0.34)	0.639	1.94 (0.23)	1.80 (0.43)	<0.001	1.89 (0.31)	1.81 (0.44)	0.047
I check the patient at least every 2 hours to make sure they are in the proper position.	1.94 (0.27)	1.98 (0.14)	0.187	1.98 (0.15)	1.94 (0.28)	0.184	1.98 (0.15)	1.92 (0.33)	0.033
I tell family members why the patient is being restrained.	1.80 (0.42)	1.83 (0.43)	0.497	1.81 (0.43)	1.81 (0.41)	0.970	1.83 (0.39)	1.78 (0.45)	0.368
I never explain to the patient why the restraint is applied.	1.59 (0.62)	1.60 (0.62)	0.846	1.69 (0.51)	1.53 (0.67)	0.022	1.63 (0.61)	1.54 (0.62)	0.208
More patients are restrained when we are short of staff than when we are fully staffed.	1.66 (0.56)	1.73 (0.47)	0.272	1.67 (0.52)	1.69 (0.53)	0.774	1.71 (0.52)	1.65 (0.54)	0.279
When a physical restraint is applied, I document the time applied, type of the restraint, the reason for applying the restraint and the related nursing care required.	1.94 (0.23)	1.95 (0.22)	0.761	1.98 (0.15)	1.92 (0.27)	0.045	1.98 (0.13)	1.89 (0.32)	<0.001
I always alert on warning signs of violent behavior such as, angry facial expressions, restlessness, Shouting.	1.91 (0.32)	1.95 (0.37)	0.848	1.89 (0.40)	1.93 (0.27)	0.241	1.89 (0.39)	1.95 (0.22)	0.118
I always assess the cyanotic appearance and cool temperature in the hand of a patient who wearing a wrist restraint.	1.96 (0.20)	2.00 (0.00)	0.033	1.99 (0.09)	1.96 (0.21)	0.065	1.97 (0.16)	1.97 (0.18)	0.796
One staff member should assess patient's head, neck airway, breathing and vital signs while	1.92 (0.31)	1.95 (0.22)	0.342	1.95 (0.25)	1.91 (0.30)	0.218	1.95 (0.25)	1.90 (0.32)	0.196

restraining.

I performed range of motion exercises to the restrained extremities once a shift.	1.07 (0.57)	1.10 (0.56)	0.648	1.07 (0.55)	1.08 (0.58)	0.867	1.08 (0.56)	1.08 (0.58)	0.945
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Results were reported as mean (SD)