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Nurses' knowledge, attitudes and practices related to physical restraint: the case from Turkey

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ABSTRACT

BACKGROUND

Nurses are primarily for the care of patients and should ensure that physical restraint, which has many negative consequences, be applied according to standard practice. Therefore, they should have knowledge about physical restraint and apply physical restraint by observing existing laws and ethical principles. This study aimed to determine the knowledge level, attitude and practices of pediatric nurses on physical restraint and identify the factors influencing physical restraint use.

METHODS

A cross-sectional study was conducted involving 150 pediatric nurses working in the pediatric clinic of a training and research hospital. The data were collected with an information form containing the introductory characteristics of the nurses and the Level of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire. Data were analyzed using the Mann-Whitney U test and the Kruskal-Wallis test.

RESULTS

Overall, nurses had good restraint-related knowledge with positive attitudes, although the physical restraint practices of nurses were not the best and there were some deficiencies. A statistically non-significant difference was found between age, gender, education status, nurses' work unit, and training status regarding physical restraint on the one hand and knowledge, attitude and practice scores relating to the use of physical restraints on the other ($p>0.05$).

CONCLUSION

Pediatric nurses' level of knowledge about physical restraint was quite good and their attitudes were positive. However, there were some deficiencies in their practices. Future training should therefore be emphasized to enhance nurses' ethical and sensitive thinking, increase their competence in applying physical restraint and working with patients.

Keywords: Physical restraint, patient rights, child nursing, knowledge, attitude, practices

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INTRODUCTION

Physical restraint is defined as applying physical force to the patient's body for a short time or using mechanical devices, materials and tools that the individual cannot easily remove.[1-3] Physical restraint is applied when the patient's behaviors are physically harmful and alternative methods are insufficient to protect the patient or the people around her or him.[3,4]

Physical restraint is used to support the proper posture of patients at risk of falling out of bed who are demented, delirious, agitated, or confused.[5] In addition, this practice is performed to keep patients under control, to prevent them from pulling out the connections such as tubes, drains and medical devices and to prevent them from harming themselves, to facilitate the application of medical treatments, and to help relieve them.[6] Therefore, it is recommended to use physical restraint widely, especially in intensive care, neurology, psychiatry and pediatric clinics.[7]

In the studies conducted in Egypt [5] and Czechia,[8] it is seen that physical restraint is widely used in health institutions to ensure patient safety. It is reported that physical restraint is widely used in the management of agitated patients, especially in intensive care units, in Australia,[9] the USA [10] and European countries.[11] Quality standards are mentioned in the Health Standards issued by the Ministry of Health of Turkey. According to these standards, it is emphasized that the decision of physical restraint should be made by the physician and should be reviewed every 24 hours.[12] In physical restraint practices, nurses should seek physicians' requests, show due care in keeping records, and know the physical and psychological complications of the practice.[7,13] It is emphasized that physical restraint can be started and terminated by the decision of the physician or in cooperation with the physician, and that physical restraint should be considered as a last resort in ensuring patient safety and continuity of treatment. Therefore, before deciding on the application of physical restraint, nurses should consider alternatives that better comply with human rights than existing policies and procedures and should be aware of the psychological and physical effects that may occur in the patient due to physical restraint.[14-16] However, studies conducted in our country [17,18] reported that nurses do not receive a physician's request in applying physical restraints and that the necessary care is not shown in this regard, the number of nurses who know the complications associated with physical restraint is low, and most of them resort to physical restraint practice in clinics.[14] These deficiencies indicate that more studies should be conducted on the use of physical restraints. Physical restraint practice of nurses working in these clinics is seen as a mandatory intervention, especially since children in pediatric clinics have a risk of harming themselves and their environment. For this reason, the importance of studies on the knowledge, attitude and practices of nurses working in the pediatric clinic about physical restraint comes to the fore.[14,19,20] In the present study, it was aimed to determine the knowledge, attitudes and practices of pediatric nurses regarding physical restraint.

METHODS

Research design

The cross-sectional study was carried out in a training and research hospital between January and November 2019.

Research subjects

The population of the study was composed of pediatric nurses working in a training and research hospital (n=161). In the study, it was aimed to reach the whole population, so the sample size calculation was not made. A total of 11 nurses were not included in the study, of whom 1 was not willing to participate in the study, 5 were on shift leave and 5 participated in our data collection pilot study. The study was completed with 150 nurses and 93.1% of the population was reached.

Study inclusion criteria are that the participant should work between January and November 2019, be a pediatric nurse, accept to participate in the study, should not have any communication problems, be eager and volunteering to participate in the study. Nurses who did not work in the pediatric clinic and did not agree to participate in the study were excluded.

Instruments

An introductory characteristics form and the Level of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire were used to collect data in the study. The introductory characteristics form was prepared by the researchers in line with the literature and expert opinions.[1-4] This form deals with the nurses' age, gender, education status, the unit they work in, the number of working years in nursing, and physical restraint training status.

The Level of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire was developed by by Janelli (1994) and improved by Suen (1999) and adapted for Turkish society by Kaya et al.[21] In the first section of this three-part scale, there are 11 items that measure nurses' knowledge of physical restraint. In this section, 10 items are true and one item is false. Correct responses are given a score of 1 point and incorrect responses a score of 0, with the scores ranging from 0 to 11. A high score indicates a "high level of knowledge". The second section includes 12 items that deal with nurses' attitudes towards physical restraint. In this section, participants are asked to respond on a four point Likert Scale as to whether they "strongly agree" 4 points, "agree" 3 points, "disagree " 2 points, or "strongly disagree" 1 point with the 12 statements. In this section, the score varies between 12 and 48 points, the high score reflecting the positive attitude, the low score the negative attitude. Section 3 contains 14 items that deal with the practices of nurses regarding physical restraint. In this section, responses are evaluated on a three-point Likert Scale with a score of 3 for "always", 2 for "sometimes" and 1 for "never". The section's score limit is between 14 and 42. The highest score obtained from the section indicates the best practice. The test-retest total correlation coefficient of the original scale was found to be between 0.85-0.99, and in this study, Cronbach's Alpha value for the total scale was 0.95.

Data collection

The data of the study were collected from pediatric nurses who worked at the training and research hospital and agreed to participate in the study. Explanations about the study were made by the researchers and written informed consent was obtained from the nurses. Data collection forms were distributed to the nurses, who were asked to fill the data collection forms in 10-15 minutes in the hospital environment.

In order to determine the intelligibility and application time of the questionnaire and the scale prepared for the research, a pilot study was made on 5 of the pediatric nurses, in which it was found that no changes were needed on the data collection forms. The data collected in the pilot application were excluded from the sample.

Ethical considerations

In order to conduct the study, approval from Ethics Committee (28.02.2018/2018-27) and written permission from the training and research hospital, which was the institution where the research was to be conducted, were obtained. Informed consent was obtained from the nurses who agreed to participate in the study, by providing information about the purpose of the study and the confidentiality of the information.

Statistical analysis

Statistical analysis was performed with SPSS (Version 22.0) package program. Categorical variables are presented as numbers and percentages, while numerical variables are presented as median and minimum-maximum scores. Since the data did not show a normal distribution, in analyzing the median (min-max) scores of the scale according to the descriptive

characteristics of the nurses, the Mann-Whitney U Test was used in the comparisons of two groups, and the Kruskal-Wallis H test was used in the comparison of more than two groups. Statistically, the value of $p<0.05$ was considered significant.

RESULTS

The age of the nurses in the study was 22 to 29 years (48.0%) , 80.0% were women, 78.0% had a bachelor's degree, 42.0% worked in pediatric clinics and 52.0% did not receive training in physical restraint. Nurses' sub-scale median scores from the Level of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire based on their introductory characteristics are provided in Table 1. A statistically non-significant difference was found between age, gender, education status, the unit the nurse work in, and training status regarding physical restraint on the one hand and knowledge, attitude and practice scores relating to the use of physical restraints on the other ($p>0.05$) (Table 1).

According to nurses' sub-scale median scores of the Level of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire, their knowledge level median score was found to be 8.0, and the minimum and maximum scores were found to be 1 to 11. Considering that the highest score that pediatric nurses can get is 11, it has been concluded that their knowledge on the use of physical restraint is quite good (Table 2).

It was determined that the attitude sub-scale median score of the Level of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire was 31.0, and the minimum and maximum scores were 24 and 48, respectively (scale score range 12-48). The attitudes of pediatric nurses were found to be positive (Table 3) considering that high scores in the attitude sub-scale show a positive attitude.

Table 1. Distribution for average scores of nurses' levels of knowledge, attitudes, and practices regarding physical restraints based on some characteristics (n=150)

Characteristics	n (%)	Knowledge	Attitudes	Practices
Age (years)		Md (Min-Max)	Md (Min-Max)	Md (Min-Max)
22-29	72 (48.0)	8.0 (1-11)	31.0 (26-48)	39.0 (29-42)
30-37	57 (38.0)	9.0 (5-11)	31.0 (25-48)	39.0 (32-42)
38-45	21 (14.0)	8.0 (7-11)	30.0 (24-40)	38.0 (30-39)
p value *		0.671	0.713	0.122
Gender				
Female	120 (80.0)	9.0 (1-11)	31.0 (24-38)	39.0 (29-42)
Male	30 (20.0)	8.0 (5-10)	33.0 (27-39)	38.0 (32-42)
p value**		0.291	0.4041	0.43
Educational status				
High School Diploma	18 (12.0)	7.5 (5-10)	29.0 (24-35)	38.5 (37-40)
Bachelor's degree	117 (78.0)	9.0 (5-11)	31.0 (25-48)	39.0 (30-42)
Master's degree or above	15 (10.0)	8.0 (1-9)	29.0 (27-32)	34.0 (29-39)
p value *		0.662	0.481	0.261
The unit the nurse work in				
Pediatrics clinics	63 (42.0)	8.0 (7-11)	30.0 (24-33)	39.0 (32-41)
Child/ neonatal intensive care	48 (32.0)	9.0 (6-11)	31.0 (27-39)	39.0 (30-42)
Child emergency	39 (26.0)	7.0 (1-11)	32.0 (25-48)	38.0 (29-42)
p value *		0.104	0.411	0.572
Training status regarding physical restraint				
Received training	72 (48.0)	8.5 (5-11)	30.5 (26-39)	39.0 (30-42)
Did not receive training	78 (52.0)	8.0 (1-11)	31.0 (24-48)	39.0 (29-42)
p value **		0.541	0.552	0.434

Note : Data presented as Median (Min-Max), *Kruskal Wallis test **Mann Whitney U test

Table 2. Pediatric nurses' knowledge levels of physical restraint use

Scale Division	Median	Minimum	Maximum	Scale Limits
Knowledge	8.0	1	11	0-11

Knowledge Items	I agree n (%)	I disagree n (%)
1- Informed consent must be obtained from a family member when a restraint is applied to the patient.	108 (72.0)*	42 (28.0)
2- Restraint is practiced by professionals only.	108 (72.0)*	42 (28.0)
3- The appropriate restraint should be determined based on the patient's condition.	102 (68.0)*	48 (32.0)
4- The restraint should be attached to the edges of the bed.	135 (90.0)*	15 (10.0)
5- The restraint should be loosened in 2 hours.	117 (78.0)*	33 (22.0)
6- When the restraint is applied to the patient, the risk of skin integrity deterioration increases.	135 (90.0)*	15 (10.0)
7- The patient should never be restrained face down because there may be a suffocation risk	114 (76.0)*	36 (24.0)
8- There is no restraint method or device that we can say works very well in every condition.	129 (86.0)*	21 (14.0)
9- When practiced, type of restraint, time of application, and reason for using restraint should be recorded in the nursing notes.	141 (94.0)*	9 (6.0)
10- The patient has the right to appeal use of restraints.	87 (58.0)*	63 (42.0)
11- Restraint is practiced when the patient cannot be closely monitored by nurses.	27 (18.0)	123 (82.0)*

*Correct response

Table 3. Pediatric nurses' attitudes of physical restraint use

Scale Division	Median	Minimum	Maximum	Scale Limits
Attitude	31.0	24	48	12 - 48

Attitude Items	I strongly agree n (%)	I agree n(%)	I do not agree n (%)	I strongly disagree n (%)
1- If I were the patient, I would have had the right to accept or refuse application of a restraint	0 (0.0)	33 (22.0)	84 (56.0)	33 (22.0)
2- I feel guilty if I apply the restraint to the patient myself.	0 (0.0)	15 (10.0)	78 (52.0)	57 (38.0)
3- I feel bad when one of the family members enters the room of a patient to whom a restraint was applied	15 (10.0)	108 (72.0)	24 (16.0)	3 (2.0)
4- I feel bad when the patient is worse / angry after application of a restraint	39 (26.0)	69 (46.0)	18 (12.0)	24 (16.0)
5- The patient experiences a decrease in self-confidence after application of a restraint	15 (10.0)	90 (60.0)	36 (24.0)	9 (6.0)
6- The application of a restraint reduces the duration of nursing care	6 (4.0)	78 (52.0)	51 (34.0)	15 (10.0)
7- I think restraints decrease the rate of falls in patients	6 (4.0)	72 (48.0)	60 (40.0)	12 (8.0)
8- I think that family members have the right to oppose application of a restraint	3 (2.0)	54 (36.0)	63 (42.0)	30 (20.0)
9- The reason for using restraints in intensive care unit is the inadequate number of nurses	0 (0.0)	27 (18.0)	78 (52.0)	45 (30.0)
10- I feel bad when the patient's orientation deteriorates after application of a restraint.	15 (10.0)	69 (46.0)	78 (52.0)	18 (10.0)
11- It is important for me and for my institution to apply the restraint while observing the legal measures.	9 (6.0)	90 (60.0)	45 (30.0)	6 (4.0)
12- I think restraints increases the risk of suffocation in patients	0 (0.0)	15 (10.0)	93 (62.0)	42 (28.0)

Table 4. Pediatric nurses' practices of physical restraint use

Scale Division	Median	Minimum	Maximum	Scale Limits	
Practice	39.0	29	42	14 - 42	
Practice Items			**Always n (%)**	**Sometimes n (%)**	**Never n (%)**
1- I try different nursing interventions to prevent the patient from falling before applying a restraint to the patient.			87 (58.0)	60 (40.0)	3 (2.0)
2- I apply a restraint to the patient only by physician's directive			102 (68.0)	39 (26.0)	9 (6.0)
3- I share my idea with the physician when I think the patient does not need to be restrained.			102 (68.0)	48 (32.0)	0 (0.0)
4- If the patient has been restrained, I respond to the patient's calls as soon as possible.			135 (90.0)	15 (10.0)	0 (0.0)
5- I check the restraint every two hours to determine whether it is in the correct position.			120 (80.0)	30 (20.0)	0 (0.0)
6- I check the skin of the patient with restraint in terms of friction or irritation.			132 (88.0)	18 (12.0)	0 (0.0)
7- I inform family members why the patient was restrained.			138 (92.0)	12 (8.0)	0 (0.0)
8- I inform the patient why the restrain is necessary.			120 (80.0)	27 (18.0)	3 (2.0)
9- I inform the patient when the restraint will be removed.			111 (74.0)	36 (24.0)	3 (2.0)
10- I check the restraint frequently to determine whether it has opened automatically			45 (30.0)	63 (42.0)	42 (28.0)
11- When the restraint is applied, I record the type of the restraint, the reason for using restraint, application hour, and relevant nursing interventions in nursing notes.			60 (40.0)	87 (58.0)	3 (2.0)
12- When the restraint is applied, I frequently check, evaluate, and record its effects.			117 (78.0)	27 (18.0)	6 (4.0)
13- As the number of colleagues decreases, the number of patients with restraints increases.			0 (0.0)	27 (18.0)	123 (82.0)
14- We try to find different ways of controlling the patient's movements in our institution rather than applying restraint.			132 (88.0)	18 (12.0)	0 (0.0)

In Table 4, it was determined that the practice median score of pediatric nurses was 39.0 (29-42). Considering that the minimum score that pediatric nurses can get is 14 and the highest score is 42, it has been determined that the physical restraint practices of nurses are not the best and that there are some deficiencies.

DISCUSSION

Physical restraint is among the practice standards of various clinics in order to ensure patient safety and to create a therapeutic environment.[22,23] Since nurses have an important role in eliminating the negative consequences of physical restraint and preventing the physical and psychological complications that may develop, they must have sufficient knowledge, attitude and practical skills in this regard. In this study, conducted to determine the knowledge, attitudes and practices of pediatric nurses on physical restraint, it was determined that the majority (52.0%) of pediatric nurses do not receive training on physical restraint (Table 1). It was determined that correct responses were given to most of the questions that evaluate the information level; however, they were not at a perfect level. For example, it is a sad finding that 42.0% of the pediatric nurses in the study said they do not agree with the statement "Residents are allowed to refuse to be placed in a restraint". It is a sad finding that 32.0% said they do not agree with the item that "The physical restraint suitable for the patient's condition should be determined." (Table 2). Although pediatric nurses' knowledge level median scores regarding the use of physical restraints are at a desired level, it is still not the best, which indicates that nurses need in-service training. The knowledge level of nurses was

found to be good in the studies by Abd Elhameed and Elemam[24] and Karagozoglu et al.[17] who investigated the knowledge, attitudes and practices of nurses regarding the use of physical restraints. However, in two similar studies conducted by Kisacik et al.[18] and Cui et al.[25] it was determined that the knowledge level of nurses about physical restraint was low. It is thought that this difference may be due to the importance given to physical fixation in countries and hospitals and the differences in education. The findings of our study have similarities to those of Abd Elhameed and Elemam[24] and Karagozoglu et al.[17] However, in line with the findings of all these studies and the present research, it is necessary to increase the knowledge level of all nurses in order to correctly fulfill the knowledge level, attitude and practices of nurses regarding physical restraint.

In our study, it was determined that the pediatric nurses' attitudes towards the use of physical restraint were positive. The attitude of the person about the subject-matter is one of the most basic elements of the use of physical restraints. In this study, it is a promising finding that pediatric nurses' positive attitudes towards the use of physical restraints will also reflect on the quality of nursing care practices. In the literature, it is seen that nurses' attitudes towards the use of physical restraints differ. In this study in which nurses' attitudes towards the use of physical restraints were investigated and in the studies by Karagozoglu et al.[17] and Kassew et al.[26] it was determined that nurses have a positive attitude towards the use of physical restraint. In contrast, Mehrok et al.[22] and Wang et al.[27] observed that nurses' attitudes towards the use of physical restraint were negative. In addition, in our study, the fact that nurses did not feel guilty when applying restraints to the patient, did not see the lack of staff as the main reason for physical restraint, and took on the roles of caregivers and decision makers imply that they displayed a professional attitude rather than an emotional approach to the psychological consequences of physical restraint use. However, the fact that pediatric nurses were found to feel bad when a family member entered the room of a patient with restraint, and that nurses' attitudes were found to be negative about the thought that self-confidence would decrease in patients with restraints suggest that nurses have dilemmas about the practice of physical restraint. It is a saddening finding that 90% of pediatric nurses stated that they do not agree and strongly disagree in response to the statement that "I believe that restraints increase the risk of strangulation." which is an indication of how serious the nurses' lack of knowledge on the subject was in this study.

In the study, it was determined that the practices of pediatric nurses regarding the use of physical restraint were positive. In this study, showed that nurses did not attach the necessary importance to the process of recording, which is a legal assurance for nurses. In many studies[3,24,27] parallel to this study, it was observed that the nurses' physical restraint practice scores were positive, but were not perfect, and it was found that nurses' physical restraint practices were inadequate considering the distribution of practice regarding the use of physical restraint by pediatric nurses. For example, it was found that nurses paid less attention to checking frequently in order to determine whether the restraint could be released, and when the restrainer was applied, to record the type of the restraint in the nursing note, the reason for using it, the time of practice, and the necessary nursing interventions. In the literature[7,24] it is seen that there are results of studies that are in line with those of this study.

There are limitations in this study that need to be taken into consideration. First, the participants were working in pediatric wards. Therefore, the study results may not be generalizable to other settings. Second, the design of our study was cross-sectional, and therefore no causal relationship can be inferred based on our results. Further, collecting data via questionnaires may be subject to social desirability response bias.

In this direction, it is suggested that more studies should be conducted to determine the needs and shortcomings of nurses regarding physical restraint, and to support nurses with training programs. It is recommended to develop a standard implementation procedure and guideline for physical restraint in health institutions.

CONCLUSIONS

This study demonstrated that pediatric nurses' level of knowledge about physical restraint was quite good and their attitudes were positive, and they mostly reflected these in their practices. However, it was observed that the nurses within the scope of the study had shortcomings in checking the restraint and recording it in the nursing note when the restraint was applied.

CONFLICT OF INTEREST

There is no conflict of interest.

AUTHORSHIP CONTRIBUTIONS

SOA and APT contributed to writing the manuscript, SOA and APT contributed to design and data collection. SOA and APT contributed to analyzing the data. SOA contributed to revising the manuscript. All authors have read and approved the final manuscript.

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DATA AVAILABILITY STATEMENT

The data presented in this study are available on request from the corresponding author. The data are not publicly available due to ethical and privacy reasons.

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