



Original Article

Nurses' Information, Attitude and Practices towards Use of Physical Restraint in Intensive Care Units

Hatice Balci¹, Selda Arslan^{2*}¹Department of Medical Services and Techniques, Vocational High School of Health Services, KTO Karatay University, Konya, Turkey²Department of Nursing, Healthy Science Faculty, Selcuk University, Konya, Turkey

ARTICLE INFO

Article History:

Received: 12 Sep. 2017

Accepted: 3 Apr. 2018

ePublished: 1 June 2018

Keywords:

Physical restraint, Nurses,
Critical Care

*Corresponding Author:

PhD in Nursing. Email:seldayar
ali@hotmail.com

ABSTRACT

Introduction: Physical restraint may seem to be a useful and simple procedure to help the treatment but is a complex practice including physical, psychological, judicial, ethical and moral issues. Research was made on description basis in order to determine the knowledge, attitude and application levels of nurses working in critical care units about physical restraint applied on patients.

Methods: The study was performed as a descriptive and correlation study. Working in ICUs, 158 nurses constituted the sampling. "Levels of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire" was used to collect data.

Results: For information, attitude and practice scores, participants' scores were 7.1(1.7), 31.8 (4.6) and 36.6 (3.2), respectively. No association was found between information subscale, and age, professional years, working time in ICUs and weekly working hours. However, for attitude subscale, a negative and weak association was found between age ($r=-0.229$) and professional years ($r=-0.174$), and increasing these variables decreased attitude score. No association was found between attitude score, and working time in ICUs and weekly working hours. While there was no association between practice score, and age, professional years and working time in ICUs, the increase in weekly working hours ($r=-0.243$) was found to decrease practice score, and this association was found weak.

Conclusion: In conclusion, we consider nurses' level of information is sufficient, but attitudes and practice were not at a positive level. It is recommendable that out of such conditions, novel approaches should be developed to decrease the use of physical restraint.

Citation: Balci H, Arslan S. Nurses' information, attitude and practice towards physical restraint in intensive care units. *J Car Sci* 2018; 7 (2): 75-81. doi:10.15171/jcs.2018.010.

Introduction

Physical restraint is used to obtain patients' appropriate posture to take their movements under control, prevent them from removing attached medical devices such as tubes and drains, and from giving harm themselves, promote the practice of medical modalities and help patients be tranquilized.¹⁻³ Physical restraint may seem to be a useful and simple procedure to help the treatment but is a complex practice including physical, psychological, judicial, ethical and moral issues.⁴ In general, physical restraint is mostly performed in children and individuals in intensive care units (ICUs), over 65 years of age, those with the history of previous fallings, distorted perception and mental function and experiencing delirium within post-operative period, in patients who do not let nursing and treatment be maintained.^{3,5,6} Among the challenges of physical restraint, the most remarkable ones are undoubtedly seen as hospital infections^{1,7} and deaths as a result of fallings from beds in wards via patients' resistance to physical restraint.

While differences are seen in various countries around the world in terms of the use of physical restraint,⁸⁻¹⁹ informed consents from patients or their relatives are required to use physical restraint in Turkey, as well as physicians' orders.²⁰ Studies performed in Turkey demonstrate that nurses mostly perform the procedure of

physical restraint with no approval by physicians, and these procedures are insufficient.^{1,6,7,21-24} However, these physical restraint with no necessary consideration and assessment is reported to affect patients physically, psychologically and socially in a negative way.^{1,3,6,16,23,25} In previous studies, the information level of nurses related to physical restraint was found to be lower, and nurses were also detected to be deprived of satisfactory information about its complications,⁷ to experience ethical dilemma on restrictions, to feel sad due to the obligation of fastening patients, and to experience delinquency and shyness.^{1,26,27}

Nurses were reported not to perform the practice of physical restraint in an ideal way in ICUs and not to use sufficient clinical information and evidence in performing the practice and to utilize their professional experience more.³ In obtaining the safety of patients, it should be kept in mind that for nurses to prevent patients to fall from beds in using physical restraint, there are alternative ways, such as using low hospital beds and bed-side rails;⁶ preventing patients from being damaged and obtaining patients to accord into setting;^{6,16} training family and relatives on patient safety and reducing the necessity for using physical restraint also by including family and relatives into the care; using warning bells or bed alarms, not letting patients be alone, hospitalizing patients in the closest ward to staff room.²⁸

The fact that nurses have critical roles in patient rights; practice of physical restraint cause physical, psychological, judicial and social human right violations; and, the procedure can give harm to patients, are important due to leading to irreversible results, such as death. This study, although the number of the studies on using physical restraint in clinics and other specialized settings is sufficient,^{6,21-24} was performed to determine nurses' information, attitudes and practices toward physical restraint in ICUs due to limited number of studies conducted in ICUs^{1,7} and by taking the significance of the subject into account. Turkey's rare that a study be made with intensive care nurses and demonstrate the importance of this work.

Research was made on description basis in order to determine the knowledge, attitude and application levels of nurses working in critical care units about physical restraint applied on patients.

Study Questions

1. What is the information level of nurses working in ICUs on using physical restraint?
2. What are the attitudes of nurses working in ICUs toward using physical restraint?
3. What are the physical restraint practices of nurses working in ICUs?
4. Are there any associations between sociodemographic characteristics, and information, attitudes and practices related to physical restraint of nurses working in ICUs?
5. Are there any associations between professional features, and information, attitudes and practices related to physical restraint of nurses working in ICUs?

Materials and methods

The study was performed as a descriptive and correlation study. The study was carried out in a hospital in the province of Konya, Turkey. The study population was all nurses who work in medical surgical intensive ICUs in hospital. For sampling all nurses who filled the questionnaire entered into the study. Working in the internal medicine and general surgery intensive care of the hospital and appropriate criteria for the study, 158 nurses, all graduated from the faculty of health sciences, constituted the target population of the study. In the study, all nurses in ICUs were included into the study.

Inclusion criteria for the study were;

- (i) Working in the internal medicine and general surgery intensive care of the hospital.
- (ii) Graduated from the faculty of health sciences.

After the researcher had obtained an approval from the local ethical committee and institutions between May and June 2015, the data were collected from nurses working in the internal medicine and general surgery intensive care of Hospital. Nurses were provided to fill in the questionnaires by the researcher during their night shift hours according to the lists prepared by supervisor nurses. After explaining how to fill in the questionnaire, the researcher asked the participants to complete it. Prepared by the researcher in light of literature,^{1,7,24} the questionnaire was designed such a way that participants could reply clearly based on the aim of the study. In ICUs

where the study performed, the data were collected at times, when work load was less in order to reach objective results.

The data was gathered with a two part questionnaire: The first part included demographic variables (age, gender, marital status, educational status) and Professional Features (variables of working, number of patients on day shift, number of patients on night shift, in-service training related to physical restraint, frequency of using physical restraint, staff deciding to use physical restraint in ICUs, stage value of ICUs, receiving consents from families working years in the profession, working hours in ICUs and working hours per week). The second part assessed "Levels of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire".

Nurses' test-retest total correlation coefficient of the original scale developed by Suen in 1999 "Levels of Knowledge, Attitudes and Practices of Staff Regarding Physical Restraints Questionnaire" was found between 0.85-0.99. Nurses' test-retest total correlation coefficient of the Turkish version of scale developed by Kaya et al.,¹ in 2008 was seen to be between 0.88-0.90, but the Cronbach's Alpha value of the scale was 0.69 as to all items. In our study, however, the Cronbach' Alpha was found as 0.64. Composed of three parts. The first part of the questionnaire, including 11 items, was testing nurses' information level on using physical restraint, the 12-item second part measured nurses' attitudes toward using physical restraint, scoring between;⁸⁻¹² and, the third part, consisting 14 items, evaluated nurses' practices on using physical restraint the scoring of the third part is between.⁸⁻¹⁴⁻⁴²

To statistically analyze the data, SPSS 20.0 (IBM SPSS Inc., USA) software package was used, and the data were shown as number, percentage and average. Skewness-Kurtosis values and the Kolmogorov Smirnov test were used to assess whether the data was normally distributed. For paired groups, the t-test was used in independent groups, and the one-way analysis of variance was used to compare means of three samples. For significant findings detected after the one-way analysis of variance, the Tukey HsD test was used to define the differences between groups. To assess the effects of independent variables, the Pearson's correlation analysis was used. The accepted statistical significance level was $P < 0.05$.

Selçuk University Health Sciences Faculty's Ethics Committee for the Non-Interventional Clinical Research gave ethical approval (2015/34867403 numbered decision) and the Association of State Hospitals provided the institutional permission (21347889/774 numbered decision) to carry out this study. To use the scale, an approval was also obtained from Hatice Kaya, one of the researchers formed the Turkish version. Nurses accepting to participate were made to sign consent forms after being informed.

Results

Of nurses participating in the study, mean age rate was

31.3 (5.7); and, 58.2% were women, 68.4% were married, and 43% had the degrees of undergraduate schools. It was found that average working years of nurses were 10.1 (5.9), average working hours spent in ICUs were 5.2 (2.8), and average working hours per week were found to be 44.2 (5.1). Of participants, 53.8% were determined to work in tertiary ICUs, 81.6% to work at both day and night shifts, 53.2% to care for patients and over on the day shift, and 56.3% to care for patients and over on the night shift. Nurses were also found to have the following scores, 7.1 (1.7) from information subscale; 31.8 (4.6) from attitudes subscale; and 36.6 (3.2) from practices subscale (Table 1).

Table 1. Mean subscale scores of participants from the Scale of Nurses Using Physical Restraint

Variable	Mean (SD)	Median	Minimum	Maximum
Information	7.1 (1.7)	7.0	1.0	10.0
Attitude	31.8 (4.6)	32.0	22.0	45.0
Practice	36.4 (3.2)	37.0	27.0	42.0

SD: Standard Deviation

When the association between the scores of nurses using physical restraint scale and socio-demographic characteristics was evaluated, mean scores obtained from independent variables of the groups, such as gender, marital status and educational status, were found to be similar ($P>0.05$) (Table 2). Mean attitudes subscale scores of unmarried participants were found to be higher 33.4 (4.1), compared to married participants 31.2 (4.6), and the difference was seen to be statistically significant ($P<0.05$).

Table 2. Comparison of nurses' socio-demographic characteristics and mean subscale scores of the Scale of Nurses Using Physical Restraint

Variable	Information Mean (SD)	Attitude Mean (SD)	Practice Mean (SD)
Gender			
Male	6.8 (1.84)	31.2 (4.4)	36.0 (3.6)
Female	7.3 (1.7)	32.2 (4.7)	36.7 (2.8)
Test	t=1.80, P=0.07	t=1.35,	t=1.38,
P-values		P=0.17	P=0.16
Marital Status			
Married/divorced/widow	7.1 (1.7)	31.2 (4.6)	36.7 (2.9)
Unmarried	7.1 (2.0)	33.4 (4.1)	35.9 (3.7)
Test	t=0.02,	t=-2.64,	t=1.31,
P-values	P=0.97	P=0.009	P=0.19
Educational Status			
Health vocational high-school	7.2 (1.7)	32.9 (4.6)	36.2 (3.1)
Associate Undergraduate/Graduate	6.9 (1.9)	31.7 (4.4)	36.5 (3.5)
Test	F=0.50, P=0.60	F=0.70,	F=0.06,
P-values		P=0.49	P=0.94

In the comparison of whether there was an association between professional features and mean subscale scores of nurses using physical restraint, mean information subscales of participants working only on the day or night shifts and those working on day/night shifts were seen to be similar ($P>0.05$). In the variable of the person deciding on using physical restraint in ICUs, nurses were found to have higher scores than those of physicians for information scores; as to attitude scores, nurses were

found to have higher scores than those of physicians, but for practice scores, physicians were found to receive higher scores than those of nurses (Table 3). As a result of findings after the Tukey test, while nurses working in tertiary ICUs had higher attitude scores than those working in primary ICUs, mean attitude scores of nurses working in tertiary ICUs were found to be lower than those working in primary and secondary ICUs (Table 3).

When the association between the scale of nurses using physical restraint, and age, number of professional years, duration spent in ICUs and working hours per week was evaluated, information subscale was found to have no association with these variables ($P>0.05$). In attitude subscale scores, however, a negative and weak correlation was found between attitude scores, age ($r=-0.229$) and the number of professional years ($r=-0.174$), and the increase of these independent variables was detected to decrease attitude scores ($P<0.05$). No correlation was found between duration spent in ICUs and working hours per week ($P>0.05$). For practice scores, while no difference was detected between age, number of professional years and duration spent in ICUs ($P>0.05$), the increase of weekly working hours was determined to decrease practice scores ($r=-0.243$) as a weak association ($P<0.05$) (Table 4).

Discussion

Nurses experience dilemma in deciding to use physical restraint in terms of patients' rights and protection of patients with the feelings of professional responsibility.²⁷ Because of low number of nurses in hospitals, increased work load, especially as a result of one or two nurses doing the night shift in ICUs and difficulties in caring, nurses have to decide to use physical restraint, leading nurses to experience such feelings as disappointment, frustration and guiltiness. Therefore, they report the practice of physical restraint as a harassing, saddening, disturbing and awful experience.^{29,30-32} In our study, 97.5% of nurses were reached to face with the practice of physical restraint, and 98.1% to perform the practice. Huizing et al.³³ reported that 85% of patients were exposed to the practice of physical restraint, and in another study by Luk et al.,¹⁸ the practice of physical restraint was reported to be performed 16 times more when no antipsychotic drugs were used. In South Korea, 23 of 51 patients staying in ICUs for six weeks were exposed to the practice of physical restraint⁹ and in another study performed in Canada and investigating the results of using physical restraint in 51 ICUs between 2008 and 2009, the practice of physical restraint was reported to be used at least once a day.¹⁸

Among our participants, 44.9% were detected to use physical restraint in order to prevent patients from removing medical instruments. In the study of Kilic et al.,³⁴ physical restraint was reported to be used for preventing 82.2% of patients from giving harm to the environment and themselves. However, the most common reasons for using physical restraint were stated as protecting medical instruments and patients' positions.⁹ In the study performed by Kandeel and Attia

Table 3. Comparison of nurses' various professional characteristics with mean subscale scores of the Scale of Nurses Using Physical Restraint

Variables	Information	Attitude	Practice
Day or night	7.1(1.4)	28.8(3.2)	38.0(2.3)
Night/day	7.1(1.8)	32.5(4.6)	36.1(3.2)
test	t=0.059	t=-4.128	t=2.989
P-values	P=0.953	P<0.001	P=0.003
Number of patients on day shift			
2 patients	7.6 (1.6)	33.3(4.6)	35.7(3.6)
3 patients	7.4(1.8)	34.8(4.06)	34.6(2.7)
4 patients and more	6.7(1.7)	30.0(3.9)	37.5(2.7)
test	F=4.33	F=19.29	F=12.61
P-values	P=0.015	P<0.001	P<0.001
Number of patients on night shift			
2 patients	7.9(1.7)	34,7(4,5)	36,0(3,1)
3 patients	7.4(1.7)	33,2(4,3)	34,6(3,4)
4 patients and more	6.7(1.7)	30,3(4,0)	37,4(2,7)
test	F=6.149	F=14.512	F=12.218
P-values	P=0.003	P<0.001	P<0.001
In-service training related to physical restraint			
Yes	7.2 (1.4)	29.9 (4.8)	37.2 (3.2)
No	7.0 (1.9)	32.9 (4.1)	36.0 (3.1)
test	t=0.859	t=-4.077	t=2.107
P-values	P=0.392	P<0.001	P=0.037
Frequency of using physical restraint			
Always	6.6(1.5)	29.0(3.9)	36.3(4.7)
Sometimes	7.1(1.8)	32.0(4.6)	36.5(3.1)
Test	t=-0.928	t=-2.095	t=-0.138
P-values	P=0.355	P=0.038	P=0.089
Staff deciding to use physical restraint in ICUS			
Physician	6.8(1.6)	31.1(4.2)	37.5(2.8)
Nurse	7.5(1.8)	32.9(4.8)	34.9(3.1)
test	t=-2.319	t=-2.428	t=5.452
P-values	P=0.022	P=0.016	P<0.001
Stage value of ICUs			
Primary	6.7(1.8)	30.1 (4.1)	37.3(2.4)
Secondary	6.9(1.9)	31.8 (4.5)	37.2(2.6)
Tertiary	7.3(1.6)	32.6 (4.6)	35.8(3.5)
test	F=2.014	F=3.846	F=4.320
P values	P=0.137	P=0.023	P=0.015
Receiving consents from families			
Yes	6.6 (2.08)	29.0 (4.0)	38.1(2.5)
No	7.1(1.7)	32.2(4.5)	36.2(3.2)
test	t=-1.393	t=-3.001	t=2.424
P-values	P=0.166	P=0.003	P=0.016

Table 4. Association of using physical restraint with some continuous variables

Feature	Information Statistical Indicator	Attitude Statistical Indicator	Practice Statistical Indicator
Age	r=-0.016 P=0.840	r=-0.229 P=0.004	r=0.049 P=0.543
Working years in the profession	r=-0.015 P=0.851	r=-0.174 P=0.029	r=0.037 P=0.648
Working hours in ICUs	r=-0.012 P=0.878	r=-0.094 P=0.239	r=-0.038 P=0.633
Working hours per week	r=0.126 P=0.114	r=0.133 P=0.095	r=-0.243 P=0.002

in 2013, the most important reason for using physical restraint was defined as patient safety at the rate of explaining that using physical restraint would be for the

patient's benefit and safety, and the patient should put up with it, while another nurse reported that she considered physical restraint as a cruel practice, and inserting a new tube into a patient removing the previous one would be better.²⁷ In another study performed in nursing homes in Singapore, the practice of physical restraint was reported to be performed by nurses to prevent fallings and to control agitations.¹¹ Although seen as a harassing, poor, hateful and inhuman practice by nurses, physical restraint is used to obtain patient safety.³⁵ Patients' removing medical apparatus attached on them and their safety may be said to be two chief purposes among the practices of physical restraint.

In our study, we found 91% of our participants used physical restraint from time to time. In the study³⁶ nurses were detected to use physical restraint for 83% of patients at least once, but Langley et al. reported the rate of patients exposed to the practice as 48.4%. In Mion's study,³⁷ however, it was found that some 56% of patients were splinted in ICUs per day, and that other settings in the hospital had similar rates. The reason why the rate of practicing physical restraint is high may be accounted for with the following: perceiving patients' behaviors as a menace, safety threat, low number of staff and nurses' insufficiency in knowing other alternative approaches. In light of these findings, it may be suggested that nurses apply for the practice of physical restraint upon feeling helpless.

In our study, 59.5 of nurses reported that physicians decided the use of physical restraint in ICUs, and 87.3% were found not to receive consents from families or relatives for the practice. In a qualitative study investigating the use of physical restraint in ICUs, nurses reported their feelings for safety when physical restraint was ordered by physicians.³⁶ Some nurses reported that when patients were with their families, they removed physical restraint because the patients were cared by the families but used it again after the families leaving.²⁷ In the study by Mamun and Lim¹¹, nurses were found to use physical restraint without physicians' approval. In another study conducted by Kozier et al.,³⁸ it was reported that nurses could decide on using physical restraint for patients with behavioral disorders in emergency situations. It was also detected that physical restraint was never used in Norway,⁵ and the use of chemical splinting was seen as more appropriate in the United Kingdom.^{4,10,36} In Hong Kong, however, nurses were determined to play a critical role in deciding to use physical restraint and be decision-maker.³⁹ According to the articles by the Ministry of Health in Turkey,²⁰ physical restraint can be practiced with physicians' orders or approval; yet, decision-making on using physical restraint is an important issue from nurses' point of view, and considering the practice in the context of our principles, such as primum non nocere (giving no harm), utility, self-determination and respect for individuality, our study findings showed professional deficiencies of nurses in terms of using physical restraint.

In our study, no significant association was found between gender, and information, attitudes and practice scores of nurses. Likewise, in different studies performed by Suen, no significant association was found between gender,

and information, attitudes and practice scores. As different from these findings, in another study by Suen et al., it was found that a significant association was found between gender, and information, attitudes and practice scores of nurses, and information level of male nurses was higher than female nurses. Myers et al.,⁴⁰ and Kruger et al.,¹⁵ stated that no association was observed between gender and using physical restraint. Additionally, Taha and Ali reported that differences between both genders showed no effect on nurses' practice of physical restraint, and Hamers et al.,¹⁴ also stated gender differences displayed no impacts on nurses' attitudes related to using physical restraint. In the use of physical restraint, the approach shown by nurses is of top priority and vital importance. So, it is considered that information, attitude and practice of physical restraint are interrelated and may be positively or negatively affect one another. The absence of a scientific basis of an actively used procedure, demonstrates us the fact that nurses use physical restraint only on the basis of their experience and intuition.

In our study, between nurses working only on the day shift or only on the night shift and those working on the day/night shifts, mean information scores were seen to be similar, while attitude and practice scores were different. In the evaluation of the numbers of patients cared on the day and night shifts, a significance was found between information, attitude and practice subscale scores of physical restraint. In the study by Celik et al.,⁴¹ although no difference was found between the number of patients cared on the night shift and information score, they found a difference between the number of patients cared on the day shift and information score. In the same study, while no difference was observed between attitude score, and the numbers of patients cared on the day and night shifts, a difference was found between practice score and the number of patients cared on the day shift. Choi and Song,⁹ Kandeel and Attia,¹⁶ and Rose et al.,⁴² reported that there was no significant association between the frequency of using physical restraint, and nurses working in ICUs on the day and night shifts. Based on the findings of the studies by Kong and Evans,⁴³ and Goethals et al.,⁴⁴ nurses were determined to use physical restraint at a higher rate on the night shift due to low number of staff and restricted opportunities. Huizing et al.,³³ reported that physical restraint is used at most (57%) on the night shift. Turgay et al.,²³ also reported that a difference was observed in the frequency of using physical restraint during the day and night shifts among 83,2% of nurses, and physical restraint was used more on the night shift due to patients' restlessness. In a qualitative study, nurses were found to be apt to use physical restraint on the night shift.³² As a consequence of these findings, it is likely that the difference between the day and night shifts arise from low number of staff, restricted opportunities on the night shift and an increase in patients' agitation at night. It is considered that in order to decide, nurses should be equipped with necessary training and supported with regulations after qualifying.

Conclusion

In light of finding we determined in the study, the following result were reached: Nurses have sufficient

level of information but negative attitudes, and are insufficient at practice. In the evaluation of the association between using physical restraint, and some continuous variables, the scale of nurses using physical restraint, age, number of professional years, duration spent in ICUs and weekly working hours, information subscale score has no correlation with these variables, there is a negative and weak association between attitude subscale score, and age and number of professional years, but only the increase in weekly working hours decreases practice subscale score.

On the basis of these findings, it may be recommended that regular in-service training programs targeting alternative approaches that can be used instead of physical restraint should be planned, nurses should be informed about physical restraint via these programs and supported by performing regulations on nurses' working order, the number of patients and providing sufficient number of staff, and legislative regulations related to physical restraint should be performed.

The present study includes a limitation of sampling only in Central Anatolia region. So, the findings obtained in our study cannot be generalized to nursing in other regions. Physical restraint may be a must to prevent patients' agitation and protect therapeutic instruments in clinical settings. It is recommendable that out of such conditions, novel approaches should be developed to decrease the use of physical restraint.

Acknowledgments

We gratefully thank all the nurses working in the ICU. We also thank Numan Duran for his assistance with the language in this article.

Ethical issues

None to be declared.

Conflict of interest

The authors declare no conflict of interest in this study.

References

- 1.Kaya H, Aşti T, Acaroğlu R, Erol S, Savaci C. Hemşirelerin fiziksel tespit edici kullanımına ilişkin bilgi tutum ve uygulamaları. Maltepe Üniversitesi Hemşirelik Bilim ve Sanat Dergisi 2008; 1 (2): 21-29.
- 2.Taha NM, Ali ZH. Physical restraints in critical care units: impact of a training program on nurses' knowledge and practice and on patients' outcomes. J Nurs Care 2013; 2 (2): 1-9.
- 3.Li X, Fawcett TN. Clinical decision making on the use of physical restraint in intensive care units. Int J Nurs Sci 2014; 1: 446-50.
- 4.Hine K. The use of physical restraint in critical care. British association of critical care nurses. Nursing in Critical Care 2007; 12 (1): 6-11.
- 5.Martin B, Mathisen L. Use of physical restraints in adult critical care: a bicultural study. Am J Crit Care 2005; 14 (2): 133-42.

6. Eşer İ, Khorshid L, Hakverdioğlu G. The characteristics of physically restrained patients in intensive care units. *Int J Human Sci* 2007; 4 (2): 1-10.
7. Hakverdioğlu G, Demir A, Ulusoy MF. Yoğun bakım hemşirelerinin fiziksel kısıtlamaya ilişkin bilgilerinin değerlendirilmesi. *Türkiye Klinikleri J Med Sci* 2006; 26 (6): 634-41.
8. Suen LKP. Knowledge, attitude and practice of nursing home staff towards physical restraints in Hong Kong nursing homes. *Asian Journal of Nursing Studies* 1999; 5 (2): 73-86.
9. Choi E, Song M. Physical restraint use in a Korean ICU. *J Clin Nurs* 2003; 12 (5): 651-9.
10. Bray K, Hill K, Robson W, Leaver G, Walker N, O'Leary M, et al. British association of critical care nurses position statement one the use of restraint in adult critical care units. *Nurs Crit Care* 2004; 9 (5): 199-212.
11. Mamun K, Lim J. Use of physical restraints in nursing homes: current practice in Singapore. *Ann Acad Med Singapore* 2005; 34 (2): 159-62.
12. Cheung PP, Yam BM. Patient autonomy in physical restraint. *J Clin Nurs* 2005; 14: 34-40. doi: 10.1111/j.1365-2702.2005.01145.x.
13. Hofşø K, Coyer FM. Part 2. Chemical and physical restraints in the management of mechanically ventilated patients in the ICU: a patient perspective. *Intensive Crit Care Nurs* 2007; 23 (6): 316-22. doi: 10.1016/j.iccn.2007.04.002.
14. Hamers JP, Meyer G, Köpke S, Lindenmann R, Groven R, Huizing AR. Attitudes of Dutch, German and Swiss nursing staff towards physical restraint use in nursing home residents, a cross-sectional study. *Int J Nurs Stud* 2009; 46 (2): 248-55. doi: 10.1016/j.ijnurstu.2008.06.007.
15. Krüger C, Mayer H, Haastert B, Meyer G. Use of physical restraints in acute hospitals in Germany: a multi-centre cross-sectional study. *Int J Nurs Stud* 2013; 50 (12): 1599-606. doi: 10.1016/j.ijnurstu.2013.05.005.
16. Kandeel NA, Attia AK. Physical restraints practice in adult intensive care units in Egypt. *Nurs Health Sci* 2013; 15 (1): 79-85. doi:10.1111/nhs.12000.
17. Farin~a-Lo'pez E, Este'vez-Guerra GJ, Gandoy-Crego M, Polo-Luque LM, Gómez-Cantorna C, Capezuti EA. Perception of spanish nursing staff on the use of physical restraints. *J Nurs Scholarsh* 2014; 46 (5): 322-30. doi: 10.1111/jnu.12087.
18. Luk E, Sneyers B, Rose L, Perreault MM, Williamson DR, Mehta S. Predictors of physical restraint use in Canadian intensive care units. *Crit Care* 2014; 18 (2): R46. doi: 10.1186/cc13789.
19. Bártlová S, Hajduchová H, Prajsová J. Nurses opinions regarding patient safety in connection with the use of restraints in patients in Czech hospitals. *Kontakt* 2015; 17 (2): 73-9. doi: 10.1016/j.kontakt.2015.04.001.
20. Ministry of Health. Kısıtlama altındaki hastaların bakım talimatı [Internet]. 2012. [Cited 2 April 2015]. Available from: <http://gaziantepecocuk.gov.tr/upload/dosyalar/130189699331568348.pdf>. (Turkish)
21. Akansel N. Physical restraint practices among ICU nurses in one university hospital in western Turkey. *Health Sci J* 2007; 4: 1-6.
22. Demir A. Nurses' use of physical restraints in four Turkish hospitals. *J Nurs Scholarship* 2007; 39 (1): 38-45.
23. Turgay AS, Sarı D, Genç RE. Physical restraint use in Turkish intensive care units. *Clin Nurse Spec* 2009; 23 (2): 68-72. doi: 10.1097/NUR.0b013e318199125c.
24. Karagözoglu Ş, Özden D, Yıldız FT. Knowledge, attitudes, and practices of Turkish intern nurses regarding physical restraints. *Clin Nurse Spec* 2013; 27 (5): 262-71. doi: 10.1097/NUR.0b013e3182a0baec.
25. Atabek AT, Karadağ A. Hemşirelik esasları hemşirelik bilimi ve sanatı. İçinde Hemşireliğin doğası (26-35). İstanbul: Akademi Basın ve Yayıncılık. 2012.
26. Janelli L, Stamps D, Delles L. Physical restraint use: a nursing perspective. *Medsurg Nursing: Official Journal of the Academy of Medical-Surgical Nurses* 2006; 15 (3): 163-7.
27. Chuang YH, Huang HT. Nurses' feelings and thoughts about using physical restraints on hospitalized older patients. *J Clin Nurs* 2007; 16 (3): 486-94. doi: 10.1111/1j.1365-2702.2006.01563.x
28. Tel H, Tel H. Hasta güvenliğinin sağlanmasında fiziksel tespit uygulaması ve hemşirelik yaklaşımı-II. *Yoğun Bakım Hemşireliği Dergisi* 2002; 6 (2): 69-74. (Turkish)
29. Bonner G, Lowe T, Rawcliffe D, Wellman N. Trauma for all: a pilot study of the subjective experience of physical restraint for mental health inpatients and staff in the UK. *J Psychiatr Ment Health Nurs* 2002; 9 (4): 465-73.
30. Zencirci Demir A. Attitudes, informed consent obtaining rates and feelings about physical restraint use among nurses. *Türkiye Klinikleri J Med Sci* 2009; 29 (6): 1573-81.
31. Möhler R, Meyer G. Attitudes of nurses towards the use of physical restraints in geriatric care: a systematic review of qualitative and quantitative studies. *Int J Nurs Stud* 2014; 51 (2): 274-88. doi: 10.1016/j.ijnurstu.2013.10.004.
32. Jiang H, Li C, Gu Y, He Y. Nurses' perceptions and practice of physical restraint in China. *Nurs Ethics* 2014; 22 (6): 652-60. doi: 10.1177/0969733014557118.
33. Huizing AR, Hamers JPH, Gulpers MJM, Berger MPF. Short-term effect of an educational intervention on physical restraint use: a cluster randomized trial. *BMC Geriatr* 2006; 6: 17. doi: 10.1186/1471-2318-6-17.
34. Kilic G, Kutlutürkan S, Cevik B, Erdogan B. Yoğun bakım ünitelerinde çalışan hemşirelerin fiziksel tespit uygulamasına yönelik görüşlerinin değerlendirilmesi. *Van Med J* 2018; 25 (1): 11-16. doi: 10.5505/vtd.2018.78941.
35. Lee S, Gray R, Gournay K, Wright S, Parr AM, Sayer J. Views of nursing staff on the use of physical restraint. *J Psychiatr Ment Health Nurs* 2003; 10 (4): 425-30.
36. Langley G, Schmollgruber S, Egan A. Restraint in intensive care units-a mixed method study. *Intensive Crit Care Nurs* 2011; 27 (2): 67-75. doi: 10.1016/j.iccn.2010.12.001.
37. Mion LC. Physical restraint in critical care settings: will they go away? *Geriatr Nurs* 2008; 29 (6): 421-23. doi: 10.1016/j.gerinurse.2008.09.006.
38. Potter PA, Perry AG, Hall A, Stockert PA. Fundamentals of nursing. St. Louis, Mo, USA: Mosby Elsevier; 2009.
39. Suen LK, Lai CK, Wong TK, Chow SK, Kong SK, Ho JY, and et al. Use of physical restraints in rehabilitation settings: staff knowledge, attitudes and predictors. *J Adv Nurs* 2006; 55 (1): 20-8. doi: 10.1111/j.1365-2648.2006.03883.x
40. Myers H, Nikoletti S, Hill A. Nurses' use of restraints and their attitudes toward restraint use and the elderly in an acute care setting. *Nurs Health Sci* 2001; 3 (1): 29-34.
41. Çelik S, Kavrazlı S, Demircan E, Güven N, Durmuş Ö, Seçil Duran E. Yoğun bakım hemşirelerinin fiziksel tespit kullanımına ilişkin bilgi, tutum ve uygulamaları. *Acıbadem Üniversitesi Sağlık Bilimleri Dergisi* 2012; 3 (3): 176-83.
42. Rose L, Burry L, Mallick R, Luk E, Cook D, Fergusson D, et al. Prevalence, risk factors, and outcomes associated with physical restraint use in mechanically ventilated adults. *J*

- Crit Care 2016; 31 (1): 31-5. doi: 10.1016/j.jerc. 2015. 09. 11.
43. Kong EH, Evans LK. Nursing staff views of barriers to physical restraint reduction in nursing homes. *Asian Nurs Res (Korean Soc Nurs Sci)* 2012; 6 (4): 173-80. doi: 10.1016/j.anr.2012.10.007.
44. Goethals S, Casterle B Dd, Gastmans C. Nurses' decision-making process in cases of physical restraint in acute elderly care: a qualitative study. *Int J Nurs Stud* 2013; 50 (5): 603–12. doi: 10.1016/j.ijnurstu.2012.10.006.