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## RESEARCH

# PHYSICAL RESTRAINT USE IN ELDERLY PATIENTS: PERCEPTIONS OF NURSES IN UNIVERSITY HOSPITALS

## ABSTRACT

**Introduction:** Nurses are primarily responsible for patient care and safety. Identification of nurses perceptions about restraint practices is thus important for raising awareness on this issue. This study aimed to identify perceptions about physical restraint use among nurses working in wards and intensive care units (ICUs) in three university hospitals.

**Materials and Method:** The study was conducted in three university hospitals with 298 nurses who completed the Perceptions of Restraint Use Questionnaire (PRUQ) to evaluate their perceptions of the use of restraint in the care of older patients. Higher values indicated that the situations described were considered an important justification for using physical restraints.

**Results:** The overall mean score for the PRUQ was 4.14. Nurses identified "Falling out of bed" as the most important reason for restraining a patient and "Substituting for staff observation" as the least important reason. In addition, there was a significant relationship between the perception of using restraints in wards and ICUs. It was noted that the nurses reported that using restraints in ICUs was more common than in wards.

**Conclusion:** The nurses' perceptions on the practice of physical restraint were high. According to these result, the nurses need to learn alternative practices for decreasing use of restraints and consider it important to plan individualized nursing care for older patients who need to be restrained and to provide sufficient information to them and their families about the safety charestics of the practice.

**Keyword:** Restraint, Physical; Aged; Nurses

## ARAŞTIRMA

# YAŞLI HASTALARDA FİZİKSEL TESPİT KULLANIMI: ÜNİVERSİTE HASTANELERİNDE ÇALIŞAN HEMŞİRELERİN FİZİKSEL TESPİT KULLANIM ALGILARI

## Öz

**Giriş:** Hemşirelerin temel sorumluluklarından biri de bakım sürecinde hastaların kendilerine ve başkalarına zarar vermesini engellemektir. Hemşirelerin tespit uygulamalarındaki algı düzeylerinin tanımlanması bu konuda farkındalık oluşturmak açısından önemlidir. Bu çalışmada üç üniversite hastanesinde çalışan hemşirelerin genel servisler ile yoğun bakımlarda fiziksel tespit kullanımına ilişkin algılarının incelenmesi amaçlanmıştır.

**Gereç ve Yöntem:** Bu çalışma, hemşirelerin yaşlı hastaların bakımında tespit kullanımı hakkındaki görüşlerini değerlendirmek amacıyla üç üniversite hastanesinde Tespit Kullanımı Algı Anketini (PRUQ-T) tamamlayan 298 hemşire ile yürütülmüştür. Anketten elde edilen puanların yükselmesi hemşirelerin fiziksel tespiti kullanım algılarının yüksek olduğunu göstermektedir.

**Bulgular:** PRUQ-T puan ortalaması 4.14 olarak bulunmuştur. Hemşireler, hastalara tespit kullanımının en önemli nedenini "Hastanın yataktan düşmesini engellemek", en az önemli nedenini ise "Personelin gözetimi için yaşlının yerinde kalmasını sağlama" olarak belirtmişlerdir. Ayrıca, genel servislerde tespit kullanımı algısı ile yoğun bakım ünitelerinde lerinde tespit kullanımı algısı arasında istatistiksel olarak anlamlı bir fark bulunmuştur. Hemşireler yoğun bakım ünitelerinde servislere göre daha fazla tespit kullanıldığını belirtmişlerdir.

**Sonuç:** Çalışmamızda hemşirelerin tespit kullanım algılarının yüksek olduğu saptanmıştır. Bu sonuca göre, hemşirelerin yaşlılarda tespit kullanımının azaltılması için tespit kullanımına alternatif yöntemler uygulaması, tespit kullanılması gereken durumlarda ise bireyselleştirilmiş hemşirelik bakım planı yapması ve güvenlik uygulamalarına ilişkin hastalara ve ailelerine yeterli bilgi verilmesi önerilmektedir.

**Anahtar sözcükler:** Fiziksel tespit; Yaşlı; Hemşire



## INTRODUCTION

One of the fundamental responsibilities of nurses is to prevent patients from harming themselves and others in the care process (1). Nurses may have to make the decision themselves to use restraints to protect patients and others. Physical restraints are defined as the use of physical and mechanic tools or chemical agents that limit movements of some parts of the body for the control of physical activities with a view to prevent individuals from harming themselves or others (2-4). Another definition includes restricting or preventing patient movements by use of physical or mechanical devices or using bodily force of a health professional for a short time (5-7).

Although restraints inevitably limit individuals' movements, they prevent them from harming themselves or others. Beside the existing physiopathological problems of elderly people in nursing homes and wards for the elderly, a large number of them experience various changes in their cognitive levels and behaviors. These elderly patients might poorly adjust to treatment processes, leading them to harm themselves (1). A study on this issue reports that 80% of the elderly people in the ICUs experience cognitive and behavioral agitation at various levels and harm themselves by removing endotracheal or tracheostomy tubes or dressings (8). In another study that investigated restraint use in an education and research hospital in Australia, Irving et al. reported the prevalence of restraint use as 9.4%, with 62% of these involving confinement to the bed, 17% involved chemical restraintment, and 3.9% involved the use of a restraint vest. The same study revealed that more than one restraint method was used for 25% of the patients and restraint use increased with the increase in age. The prevalence of restraint use was 31% in patients aged over 85 years but only 14.1% in patients aged between 75 and 85 years (9). In these cases, limiting movements and using restraint could become a part of the treatment. In cases where patients harm themselves or others, nurses see limiting movements and using restraints as part of care.

Nurses are primarily responsible for patient care and safety. Identification of their perceptions about restraint practices is thus important for raising awareness on this issue and protecting elderly people from unnecessary damage of using physical restraint. This study aimed to identify perceptions about physical restraint use among nurses who work in university hospitals and to investigate whether there are differences between wards and ICUs in terms of the perceptions of restraint use.

## Background

Review of the related literature indicates that individuals' perceptions about restraint use in the elderly are identified via the Perceptions of Restraint Use Questionnaire (PRUQ) developed by Strumpf and Evans (1993) (10). One of the pioneer studies that utilized the PRUQ included 18 nurses providing care for 20 patients. The most important reason for restraint use by nurses in that study was found to be the protection of patients' and others' safety (11). An analysis of the studies conducted in different clinics that utilized the PRUQ tool indicate that some facts in physical restraint use were found to be more important and acceptable than others for enhancing patient safety (12,13). In a study with 52 nurses in three different clinics (Internal Diseases, Orthopedics, and Cardiovascular Surgery), Helmuth found that patient safety was the most important reason for using restraint and achievement of quiet time was the least important (12). Myers reported that the most important reason for physical restraint use in their environment was preventing patients from falling and the least important was the need for quiet time (13).

In their study conducted with 94 nurses, McGabe et al. utilized the PRUQ and found the mean score was 2.8 out of 5 and that treatment interference was reported to be the most important restraint reason (14). Similarly, nurses' physical restraint perception mean score was found to be 2.8 in a study conducted by Matsui in Japan (15). In this study conducted with a sample of 205 nurses, perceptions' mean score for physical restraint use in surgery wards were found to

be significantly higher than in other wards, and the most important reason was stated as preventing patients from breaking open sutures.

A study that utilized the PRUQ conducted by Lopez et al. with 19 Spanish nurses working in nursing homes found the general mean scores to be 3.4 out of 5. In addition, no significant differences were found between nurses' perceptions of restraint use and demographic characteristics of the working units (16).

A study that utilized the PRUQ to investigate nursing students' restraint use perceptions found that the students initially had negative attitudes about restraint use. However, they were found to adjust this to positive attitudes as they observed the clinic nurses' need for the use of restraint (17).

This review of the studies on this subject conducted in various countries and various clinics led to the conclusion that perceptions of and primary reasons for restraint use vary. The common opinion held by the workers in the field is that restraint should be used primarily for patient safety. We could not find other studies in our country that have aimed to identify nurses' perceptions about restraint use. Therefore, the purpose of the present study was two-fold: to examine nurses' perceptions about restraint use and to identify the relationship between wards and intensive care nurses' perception about restraints. It was anticipated that the results would provide an evaluation of the current situation, identify the needs in this field, and make a contribution to the literature.

## **MATERIALS AND METHOD**

### **Sample selection**

This cross-sectional study was conducted between September and October, 2017. The target population of the study was nurses working in three university hospitals located in the south eastern part of Turkey who provided care for the elderly in internal and surgery wards and ICUs. Five hundred nurses (except pediatric, emergency and polyclinic nurses) in these three university hospitals were the

target population for the study. The number of participants was identified using power analysis in the 3.1.7 version of the G-Power program, in which the confidence interval was taken as 95%, the error margin as 5%, the effect size as 0.20, and the power of research as 80% (18). The result of this analysis, the number of participants was identified as 262. The number of ward nurses (Internal Diseases, Neurosurgery, Thoracic diseases, Neurology), and intensive care nurses (Palliative care, Reanimation IC, Cardiology IC, Neurosurgery IC, Internal Diseases IC) who participated in the study were 148 and 150 respectively (Total 298).

### **Data collection instruments**

The data were collected using the Descriptive Characteristics Form and the PRUQ.

**Descriptive characteristics form.** For the purpose of this study, this form was prepared to obtain the subjects' age, gender, number of years of working experience, number of years in the current work unit, identity of the current work unit, and education in geriatrics nursing.

**The Perceptions of Restraint Use Questionnaire (PRUQ)** A Turkish form of Strumpf and Evans's PRUQ tool was developed to collect study data (11). The tool consists of 17 items, each with a 5-point Likert response scale and each consisting of a reason for physical restraint. Participants scale their perception of the importance of physical restraint use for each itemized purpose. The total score for each subject ranging from 17 to 85 is reduced to an average score between 1 and 5, in which a higher average indicates a more favorable overall perception towards physical restraint use with older adults.

The Cronbach's Alpha Reliability Coefficient value analysis for the original questionnaire was 0.93. When the Turkish form of the 17-item PRUQ was developed, the Cronbach alpha reliability coefficient was 0.92 (19).

### **Ethical considerations**

Prior to the study, ethics committee approval was obtained from the Biomedical Research Ethics



Committee of the university (permission no: 2017-6-17) and the institutions where the study was conducted. After the nurses who participated in the study were informed about the purpose of the study, they were informed that the decision to participate in the study belonged only to them, that they should not write their name on the questionnaire, that the data to be collected would be used only within the scope of the study, and that confidentiality would be strictly maintained. Once their consent was obtained, the personal data form and the PRUQ were distributed for completion.

### Data analysis

The data obtained from the study were analyzed in SPSS 16.00 package programme, and their normality was tested using Kolmogorov–Smirnov and Shapiro–Wilk tests. Parametric tests were used because the PRUQ scale displayed normal distribution. The data were displayed in tables as means ( $\pm$ ), standard deviations (SDs), and numbers and percentages of the individuals. Data were assessed by descriptive statistics, t-tests and One way Anova. A p value  $<0.05$  was considered statistically significant.

## RESULTS

Of all the nurses participating in the study, 215 (72.1%) were female and 83 (27.9%) were male. The average age of the participants was  $30.48 \pm 5.55$  years (youngest 20 years, oldest 47 years), and the total number of years of experience was  $8.20 \pm 5.65$  years (least 1 year, most 27 years). There were 45.8% (136) nurses who stated that they had received education in geriatric nursing.

The nurses' perception of the use of restraint displayed similar distribution between the groups in terms of variables such as gender, age group, years of experience, and receiving geriatrics education or not. There is a statistically significant difference between PRUQ mean score of the nurses according to their gender, age and their years of experience ( $p < 0.05$ ). There is no significant difference between PRUQ mean score of the nurses according to receiving geriatrics education status ( $p > 0.05$ ) (Table 1).

**Table 1.** Distribution of the PRUQ mean scores for descriptive characteristics.

Descriptive characteristics	n (%)	PRUQ Mean $\pm$ sd
<b>Gender (298)</b>		
Female	215 (72.1)	4.18 $\pm$ 0.60
Male	83 (27.9)	4.03 $\pm$ 0.57
<b>Statistics*</b>		<b>t=-2.034, p=0.040</b>
<b>Age (298)</b>		
20–29	156 (52.3)	4.06 $\pm$ 0.64
30–39	121 (40.6)	4.18 $\pm$ 0.54
$\geq 40$ years old	21 (7.0)	4.48 $\pm$ 0.40
<b>Statistics**</b>		<b>F=5.064, p=0.007</b>
<b>Years of experience (295)</b>		
1–5 years	126 (42.3)	4.05 $\pm$ 0.69
6–10 years	95 (31.9)	4.16 $\pm$ 0.51
>10 years	74 (24.8)	4.26 $\pm$ 0.50
<b>Statistics**</b>		<b>F=3.069, p=0.048</b>
<b>Geriatrics education (298)</b>		
Yes	136 (45.8)	4.07 $\pm$ 0.63
No	162 (54.4)	4.20 $\pm$ 0.56
<b>Statistics*</b>		<b>t=-1.847 p=0.066</b>

\* Independent sample t test; \*\* One way Anova

**Table 2.** Distribution of PRUQ mean scores for restraint reasons.

PRUQ	Mean	sd
1- Protecting an older person from:		
a- Falling out of bed	4.55	0.60
b- Falling out of a chair	4.37	0.83
c- Unsafe ambulation	4.37	0.82
2- Preventing an older person from wandering	3.75	1.01
3- Preventing an older person from taking things from others	3.37	1.37
4- Preventing an older person from getting into dangerous places or supplies	4.36	0.75
5- Keeping a confused older person from bothering others	3.94	1.01
6- Preventing an older person from:		
a- Pulling out a catheter	4.45	0.75
b- Pulling out a feeding tube	4.43	0.75
c- Pulling out an IV	4.26	0.83
d- Breaking open sutures	4.31	0.80
e- Removing a dressing	4.28	0.77
7- Providing quiet time or rest for an overactive older person	3.75	1.06
8- Providing for safety when judgment is impaired	4.20	0.88
9- Substituting for staff observation	3.54	1.20
10- Protecting staff or other patients from physical abusiveness/combativeness	4.21	0.89
11- Managing agitation	4.23	0.85
<b>Total PRUQ score</b>	<b>4.14</b>	<b>0.60</b>

**Table 3.** Distribution of the PRUQ mean scores for subjects in wards and ICUs.

PRUQ	Wards Mean±sd	ICUs Mean±sd	p value*
1- Protecting an older person from:			
a- Falling out of bed	4.51±0.69	4.59±0.49	0.211
b- Falling out of a chair	4.28±0.94	4.45±0.70	0.078
c- Unsafe ambulation	4.30±0.82	4.43±0.82	0.176
2- Preventing an older person from wandering	3.63±0.94	3.87±1.07	<b>0.042</b>
3- Preventing an older person from taking things from others	3.05±1.43	3.68±1.28	<b>0.001</b>
4- Preventing an older person from getting into dangerous places or supplies	4.28±0.82	4.43±0.67	0.085
5- Keeping a confused older person from bothering others	3.66±1.10	4.21±0.83	<b>0.001</b>
6- Preventing an older person from:			
a- Pulling out a catheter	4.32±0.91	4.58±0.52	<b>0.003</b>
b- Pulling out a feeding tube	4.38±0.77	4.48±0.72	0.240
c- Pulling out an IV	4.13±0.92	4.38±0.71	<b>0.009</b>
d- Breaking open sutures	4.28±0.83	4.34±0.76	0.543
e- Removing a dressing	4.20±0.82	4.36±0.72	0.067
7- Providing quiet time or rest for an overactive older person	3.58±1.08	3.91±1.01	<b>0.008</b>
8- Providing for safety when judgment is impaired	3.99±1.01	4.41±0.68	<b>0.001</b>
9- Substituting for staff observation	3.46±1.16	3.62±1.24	0.249
10- Protecting staff or other patients from physical abusiveness/ combativeness	4.08±0.99	4.34±0.78	<b>0.012</b>
11- Managing agitation	4.14±0.92	4.33±0.76	0.051
<b>Total PRUQ score</b>	<b>4.02±0.61</b>	<b>4.26±0.56</b>	<b>0.001</b>

\* Independent sample t test



The overall average PRUQ score for this study was found to be 4.14 out of a total of 5 points. The most important reasons for restraint use indicated by nurses included protecting an older person from falling out of bed, preventing an older person from breaking open sutures, and pulling out a catheter and/or a feeding tube. Relatively less important reasons for nurses included preventing an older person from taking others' goods, acting as a substitution for staff observation, and providing quiet time in the ward or ICU (Table 2).

There was a significant difference between the average scores of ward nurses' perceptions (4.02) and those of ICU nurses (4.26) ( $p < 0.05$ ). In addition to this result, the PRUQ mean scores of nurses working in ICUs were found to be higher for all reasons (Table 3).

## DISCUSSION

Use of restraint on elderly patients is one of the important cases that causes ethical dilemma because it limits the individual's autonomy and independence. Routine care practices should be regulated in a way restraint would be needed at minimum level. However, its indications, expected benefits, risks and potential complications should be considered well in cases when restraint needs to be used. Nurses use physical restraints as useful and simple solutions to prevent treatment interference. However, the use of restraints that violate physical, psychological, legal, ethical, and/or moral boundaries are considered intrusive and risky and are only legally permitted in very specific circumstances.

Our study showed that there was a significant relationship between the perception of using restraints in wards and ICUs. According to the results, using restraints in ICUs was more common than in wards, despite the reported potential harm to the elderly patients and the controversy concerning the effectiveness of physical restraints (18).

The mean scores that the nurses obtained from the perceptions of the restraint use questionnaire suggest that nurses currently hold a very strong belief that restraints should be used with older people for the reasons given in the scale. However, it is important to consider whether understanding the dangers of restraint as well as learning how to "make sense" of the patients' behaviors as a communication of distress or unmet need would significantly decrease their mean scores. Results similar to ours were found in a study that also aimed to identify - ward and ICU nurses' restraint perceptions. The reason given for this was that ICUs are more complicated than other wards, and more emergency cases are managed there (20). It could also be due to the fact that as intensive care nurses spend more time with their ICU patients than the practice in other nursing situations, these nurses could be more worried about patient safety and thus tend to use more restraints.

Nurses who work in wards and in ICUs considered the use of physical restraints more important in some circumstances: both groups supported its use for protecting an older person from falling out of bed. Other studies that utilized the PRUQ also identified patient safety as the primary reason (12,13,16). However, studies have shown that no evidential information has been reported that restraint use provides patient safety (20,21).

The other reasons for which our subjects considered the use of restraint to be important (preventing an older person from breaking sutures open and pulling out a catheter or a feeding tube) were confirmed by several studies (15,16,20,22,23). In routine patient care, restraint use should be one of the least frequently applied practices by nurses. For instance, restraint use should be avoided in a patient who constantly removes the dressing, and the case should be managed using alternative methods. Various studies posit that restraint

should be used only in terminally ill patients to protect dressings and prevent from the removal of tubes (24,25).

The findings about the use of physical restraint for preventing an older person from taking things from others, substituting for staff observation, and providing quiet time were also reported in other studies (16,20).

There is a statistically significant difference between PRUQ mean score of the nurses according to their gender, age and their years of experience ( $p < 0.05$ ). There is no significant difference between PRUQ mean score of the nurses according to receiving geriatrics education status ( $p > 0.05$ ). Some other studies investigating this issue provided similar findings (13,16). Other investigations concerning nurses' and nursing assistants' restraint use perceptions reported significant differences according to variables such as receiving postgraduate education and the wards in which they work (16).

We consider it important to design postgraduate education programs that cover reasons for restraint use, its ethical and legal aspects, and alternative substitute methods to raise nurses' awareness on the issue. The perception of restraint use does not appear to be affected by education in geriatric nursing. As our study did not provide any information about the nature or degree of the extra knowledge of general nursing practice, this issue is open to research.

In conclusion, this study provided the clinical outcomes of nurses' perceptions on the practice of physical restraint in Turkey. The overall PRUQ score of the sample was found to be 4.14. There was a statistically significant difference between the scores of the perceptions of the wards and ICU nurses. The most important reasons for the participants to use restraint were found to be protection of an older person from falling out of

bed, preventing an older person from breaking open sutures, and pulling out a catheter and/or a feeding tube. Reasons that are less important, according to the subjects, included preventing an older person from taking things from others, substituting for staff observation, and providing quiet time.

Although restraint use is a practice applied for patient safety, it should be considered that this procedure can limit patient freedom and have effects that may even lead to death. Decision about restraint use should involve the evaluation of the expected benefits or risks as well as potential side effects. It is important to plan individualized nursing care for the patient who is restrained and to provide him and his family with the opportunity to participate in achieving the safety of the patient. In cases where the decision to use restraint has been made, the reasons for restraint use should be clarified, the application period should be limited, and the reasons, efficacy, and side effects of the practice should be reported for each patient. Prior to restraint use, the relatives of the agitated, aggressive, or dementia patient should be informed and consent should be obtained.

### **Limitations of the study**

The data in this study were obtained from nurses recruited from one hospital in Turkey, which limits the generalizability of the findings. Future research requires larger samples to ensure representativeness.

### **Conflict of interest**

The authors declare that there is no conflict of interest.

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