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Restraint Variables in a Regional Mental Health Hospital in Turkey

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Abstract

Objective: To obtain a database to be used in the effort to reduce the use of restraint in mental health hospitals in Turkey, and to compare the data with results of similar studies.

Method: The sociodemographic characteristics, history of violent or suicidal behavior, and BPRS scores of patients restrained during a 1-month period, and data concerning the number of beds and staff working during day and night shifts were collected. The restraint variables, number of restraints used and duration of restraint use, in all wards were determined and adult psychosis wards were compared according to these variables.

Results: Approximately 25% (194) of 810 hospitalized patients were restrained for a total of 1524.25 h (mean: 3.25 h) during 1 month. In all, 182 restrained patients were analyzed and most were male, elementary school graduates, never married, and living with first-degree relatives. There were no correlations between these variables, and the number of restraints used and the duration of their use. Mean age of the females (36.27 years) was higher than that of the males (32.46 years); the difference was significant. In all, 66.6% of restraint use was because of violent behavior or the probability of violent behavior. The rate of restraint use was lower during day shifts (43.82%). Patients on adult wards were not different in terms of diagnosis, BPRS score, rate of violent behavior, and reasons for using restraint, but were markedly different in terms of the number of restraints used and the duration of restraint.

Conclusion: The number of restraints used and the duration of restraint was on average level. Restraint was associated with being female and older, and having more severe symptoms. Night and weekend shifts were more risky for amount and duration of restraint. Non-clinical institutional factors were a determining factor in the use of restraint.

Key Words: Restraint, aggressive patient, mental health hospital

INTRODUCTION

Keeping a patient in room so that he/she can't leave the room is known as seclusion. Mechanical or physical interventions that inhibit a patient's movement within the secluded area are known as restraints; medical treatment in addition to the standard daily treatment administered to prevent violence or violent behavior is known as chemical restraint (HCFA, 1999; Busch and Shore, 2000; Schreiner et al., 2004).

The objectives of these restrictions are to prevent suicidal behavior, to obtain control of symptoms like anxiety, restlessness, paranoia, hallucinations, and violence, to keep the patient away from situations that trigger paranoid ideation, and to diminish extreme sensitive loading (Gutheil, 1987; Kaltiala-Heino et al., 2003). Yet, whether the use of seclusion-restraint always meets these criteria is debatable. On one side of the debate there are those that view these procedures as methods that prevent dangerous behavior and ensure safety. On the other side

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there are those that maintain that seclusion and restraint do not contribute to treatment, that they are a form of corporal abuse and rape used with the intention to control and oppress, and that they actually interfere with adaptation to treatment (Chamberlin, 1985; Fisher, 1994; Blanch and Parrish, 1990; Cashin, 1996). The literature does not contain any controlled studies comparing the effects of seclusion/restraint with other options in emergency wards, nor standards for their application (Fisher, 1994; Crenshaw et al., 1997; Busch, 2005). Due to the influence of campaigns targeted to abolish their use, regulations of professional organizations and codes in many American states don't consider seclusion/restraint a treatment option, and seclusion/restraint and additional medical therapies are recommended only for emergencies as a last resort (APA, 1999; HCFA, 1999; Martinez et al., 1999; NASMHPD, 1999; OMHSAS, 1999).

The rate of violence in psychiatric wards is 2-fold higher than in other medical treatment departments. Mental health professionals' risk of exposure to violence in the work environment is reported in many publications (Black et al., 1994; Snyder, 1994; Erdos and Hughews, 2001; Flannery et al., 2001; May and Grubbs, 2002; Presley and Robinson, 2002). There is a consensus that emergency clinics and acute psychiatry wards are high-risk work environments and there is a need for precautions, especially with respect to violent patients. On the other hand, seclusion/restraint does not necessarily protect patients or employees, and may actually increase the risks, cause injury or death, results in legal/and or criminal charges, and are expensive (Petit, 2004; Glover, 2005; Hill and Petit, 2005).

In a study conducted in Pennsylvania, although the number and duration of seclusion-restraint decreased 5-24 fold as a result of reduction efforts, there was no significant change in the number of injured workers, which strengthened the argument against the use of such procedures (Fisher, 2003; Schreiner et al., 2004; Glover 2005; Smith et al., 2005; NETI, 2006). Abolition of seclusion/restraint may seem like a radical and unrealistic target to some, but the Pennsylvania study shows that it is possible to do so and that these use of these procedures can at least be reduced considerably (Busch, 2005). Without the support of healthcare administrators the success of efforts to reduce the use of seclusion/restraint is unlikely (Dunbar et al., 1997; Jensen et al., 1998; Fisher, 2003). Davidson et al. (1984) showed that a reduction in seclusion/restraint is possible, even if the sole intervention is the support of administration. Team leadership is also defined as an important factor (Visalli and McNasser, 2000).

Fisher maintains that, "non-clinical, institutional factors, such as cultural prejudices, workers' understanding of duty, and attitudes of hospital management are more influential on the use of seclusion and restraint than common and clinical factors". Minnick et al. also recommend the development of nation-wide strategies with the aim of creating positive environments and cultures that would result in a reduction in the use of seclusion/restraint procedures. Both views still maintain their validity (Fisher, 1994; Minnick et al. 1998; Fisher, 2003). It is shown that campaigns to raise public consciousness efforts to diminish the myth that seclusion/restraint procedures protect against violence and the cultural change assuring them to be seen "not as a method of treatment, on the contrary, as failure" reduced procedures rapidly (Sunder et al., 1994; Cruz et al., 1997; Dunbar et al., 1997; Raja et al., 1997; Jensen et al., 1998; Palmer et al., 1999; Busch, 2005).

It is apparent that seclusion/restraint reduction programs will require detailed records of each seclusion/restraint and an analysis of the emerging database. Research has shown that the decision to use restraint is more likely to be made for patients that have previously been restrained and that many crises are experienced during the transition from day to night shift. Reducing tension on the ward and preventive measures taken during shift changes reduced both crises and the use of restraint (Schreiner et al., 2004).

Because there are no seclusion rooms at Bakırköy Hospital for Mental and Neurological Diseases (BHMND), the primary restriction method is mechanical restraint. In January 2006 a program with the aim of reducing the frequency of restraint use began and, as a first step, a directive concerning indications for the use of restraint and application principles was published. According to the directive, the use of restraint was considered a last resort when verbal or medical conciliation proved ineffective, the cause for restraint had to be explained to the patient, and the procedure had to end as quickly as possible. The directive also recommends avoiding the use of restraint with a strait jacket, restraining only to a bed, to frequently evaluate the patient face to face (every 15 minutes by the nurse, every hour by the physician), to perform relief of circulation every 2 hours, and keeping unrestrained patients separated from restrained patients. The directive mandates that the decision to restrain be made by a doctor, or in emergency situations, a patient restrained by a nurse must be evaluated by a doctor as soon as possible, and data related to the use of restraint be recorded. In addition, it is mandatory to record all

necessary information in each patient's medical file and ward restraint record book. In the first section of the ward restraint record book the following data are recorded: Patient name/last name, name of the ward, file protocol number, date, time restraint began and ended, method of restraint (restrained to bed, restrained to bed by strait jacket), points of restraint (wrists, ankles, chest, other), additional treatment during restraint, and name/last name and signature of the doctor that ordered the restraint. The second section contains notes by the nurse or doctor about the patient's physical comfort and well being, whether he/she has had food, drink or bathroom needs during restraint, and observations every 15 minutes. In addition, blood pressure, pulse, temperature, and respiration rate, which must be measured every hour, are recorded.

The present study aimed to determine the rate of mechanical restraint use for all patients in the hospital 4 months after the directive was put into practice, between 15 May and 14 June 2006. It was also aimed to obtain a database for use in the hospital's (the largest regional mental hospital in Turkey) restraint reduction/abolition efforts, to assess the progress towards this goal, to enhance precautions to be taken by identifying variables related to the use of restraint, and to evaluate the obtained results according to international restraint variables (Bilici, 2007).

METHOD

Sample

The study was conducted at BHMND, a regional hospital that educates specialists in addition to health services in the most populous city of Turkey (Istanbul; population: 12 million), serving the largest population (18 provinces/approximately 25 million people). Patients that cannot be treated at regional facilities and that have serious psychotic disorders are referred to BHMND to be treated as inpatients. Adolescents, forensic cases, and patients with psychotic disorders due to drugs/alcohol are admitted to related wards according to gender. Adult psychotic patients, aside from those with the above-mentioned characteristics, are admitted to wards according to their gender and order of arrival, without any particular selection. All inpatients that were mechanically restrained during a 1-month period (628 beds in 14 wards) were included in the study. Forensic (97), adolescent (35), and alcohol-drug psychosis (20), as well as all other wards in the hospital were included in the evaluation of restraint use; however, these wards were not included in the comparison between wards, since the characteristics of their patients, conditions of admittance, and length of stays in these wards were different. In all, the study included 3 female and 6 male acute psychosis wards (476 beds) to which patients were admitted according to order of arrival (without any kind of selection); thus, they were homogenous in terms of the patients that were compared.

MATERIALS

Semi-Constructed Interview and Information Form (SCIF)

This form was prepared by the researchers and contains 3 sections: 1) Sociodemographic data; 2) Data about past violent behavior, suicidal behavior, cause of admittance, number of admittances, and alcohol/drug use; 3) Data on the use of restraint.

Form for Acute Psychiatric Wards

This is a chart on which total number of beds, newly admitted patients, nurses working during work hours and watch, attendants, chiefs of the clinic, chief assistants, specialists, and residents were recorded. The form was prepared by the researchers.

Brief Psychiatric Rating Scale (BPRS)

This scale was developed by Overall and Gorham (1962), was later expanded by Lukoff et al. (1986, 1993), and was translated into Turkish by Soykan (1989).

Administration of all the forms was carried out by a single researcher. Patients were interviewed within 24 hours of being restrained and the SCIF and BPRS were administered. If a patient was restrained more than once, he/she was interviewed within 24 hours of each restraint. Data on subsequent restraints was collected thusly.

STATISTICAL ANALYSIS

Chi-square test was used during data inventory and analysis, and when categorical data were compared to other categorical data. When comparing quantitative rates of the 2 groups that formed the total study sample, t-test was used for independent groups, as the number was adequate. When the number of groups was greater than two (for example, for wards), non-parametric Kruskal-Wallis or one-way ANOVA were used for comparisons, and the Scheffe test was used as the post-hoc test. When examining the differences between 2 quantitative variables with the same units within a group, the

TABLE 1. Distribution of all acute psychotic patients in the study wards.

Ward	Total patients hospitalized in a 1-month period			Total number of patients in the study sample			Total number of patients in the study wards	
	Total number of patients	Number of restrained patients	% in all restraints	Loss	Number of restrained patients	Patient %	Number of restrained patients	Patient %
1. Adult Female Ward	96	22	11.3	-	22	12.08	22	14.0
2. Adult Female Ward	97	31	16.0	1	30	16.4	30	19.1
3. Adult Female Ward	89	19	9.8	1	18	9.8	18	11.5
1. Adult Male Ward	69	20	10.3	2	18	9.8	18	11.5
2. Adult Male Ward	59	24	12.4	3	21	11.5	21	13.4
3. Adult Male Ward	63	16	8.2	1	15	8.2	15	9.6
4. Adult Male Ward	65	10	5.2	1	9	4.9	9	5.6
5. Adult Male Ward	67	15	7.7	1	14	7.6	14	8.9
6. Adult Male Ward	73	10	5.2	-	10	5.4	10	6.4
Mediate Total	678	167	-	10	157	-	157	100
Adolescent Female Ward	23	5	2.6	1	4	2.1	-	-
Adolescent Male Ward	26	6	3.1	1	5	2.7	-	-
Alcohol-Drug Psychosis Ward	25	10	5.2	-	10	5.4	-	-
Non-Detained Male Forensic Ward	22	1	0.5	-	1	0.5	-	-
Detained Male Forensic Ward	36	5	2.6	-	5	2.7	-	-
Total	810	194	100.0	12	182	100.0	157	100

paired-t test was used. Pearson's correlation coefficients were used when looking at the relationship between rational quantities, Spearman's correlations were used for evaluating the relationships between artificial quantities, and between artificial quantities and other quantities. For all tests, $P = 0.05$ was considered significant.

RESULTS

In the 14 wards studied there were a total of 810 acute psychotic patients admitted during a 1-month period; the total number of patients that were restrained in the hospital was 194 (23.9%). Because 12 of the restrained patients were discharged for different reasons in less than 24 hours, only 182 were evaluated. Patients that were admitted to the forensic psychiatry, alcohol/drug psychosis, and adolescent psychiatry wards were used for the general hospital evaluation, but comparisons between wards were made on for only 157 patients from 9 wards (Table 1). Of the 182 patients used in the general evaluation, 74 (40.6%) were female and 108 (59.3%) were male. Of the 628 patients that were not restrained, 248 (39.5%) were female and 388 (60.5%) were male, and the difference between genders was not significant. Restrained patients (mean age: 34.0 ± 11.5 years) were significantly younger ($t = 4.91$, $P < 0.001$) compared to the total patient sample (mean age: 40.15 ± 12.26 years). The youngest and oldest patients to be restrained were 15 and 77 years old, respectively (mean age: 34.0 ± 11.5 years). Mean age of the female patients was 36.3 ± 12.4, versus 32.5 ± 10.7 years for the male patients, and the difference between genders was significant ($t = 2.211$, $P < 0.05$).

When wards were compared according to the rate of restraint use (restrained patients/total patients), the highest rate (40.7%) was observed in the 2nd male ward and lowest rate (13.7%) was in the 6th male ward. No difference was observed between female wards in terms of the rate of restraint use, but among the male wards the difference was significant. Additionally, according to advanced chi-square analysis the highest rate of restraint use was observed in the 2nd male ward and lowest rate was in the 6th male ward; the difference was significant. When all adult wards were compared a significant difference between restraint rates was observed; the difference was considered to have originated with ward 2 (Table 2).

In all acute wards patients spent a total of 1524.3 hours in restraint during the 1-month period. When the wards' restraint databases were evaluated, major differences were seen. The ward with the highest total number of restrained

TABLE 2. Comparison of wards in terms of restraint rates.

Ward	Number of Patients	Restrained Patients	Unrestrained Patients	In-ward restraint rate (%)	Inter-ward chi square	Inter-ward P	Inter-ward chi square	Inter-ward P
1. Adult Female Ward	96	22	74	22.9				
2. Adult Female Ward	97	31	66	31.9	3.27	NS		
3. Adult Female Ward	89	19	70	21.3				
1. Adult Male Ward	69	20	59	28.9				
2. Adult Male Ward	59	24	35	40.7				
3. Adult Male Ward	63	16	47	25.3			19.72	< 0.05
4. Adult Male Ward	65	10	55	15.4	16.33	< 0.01		
5. Adult Male Ward	67	15	52	22.3				
6. Adult Male Ward	73	10	63	13.7				
Mediate Total	678	167	511	24.6				
Adolescent Female Ward	23	5	18	21.7				
Adolescent Male Service	26	6	20	23.1				
Alcohol-Drug Psychosis Ward	25	10	15	40.0				
Non-Detained Male Forensic Ward	22	1	21	0.5				
Detained Male Forensic Ward	36	5	31	13.8				
TOTAL	810	194	616	23.9				

NS: Not significant.

patients (n = 30), total duration of restraint (533.75 hours), risk of restraint for patients (2.49), mean duration of restraint (17.8 hours), longest restraint (150 hours) and duration of restraint per person (5.21 hours) was the 2nd female ward. On the other hand, the lowest number of restrained patients (n = 9) was noted in the 4th male ward, and the lowest total duration of restraint (18 hours), risk of being restrained (0.25), mean duration of restraint (81.58 hours) was in the 6th male ward (Table 3).

The mean total number of restraints for all restrained patients was 2.5 for females and 2.3 for males. The difference is not significant. Mean total duration of restraint was 12.9 hours for females and 6.05 hours for males ($P < 0.01$). Females were restrained longer during their hospital stay (Table 4).

In all, 84% of the patients that were restrained had a history of violent behavior, whereas 11% did not and data could not be obtained for 4.9%. Of the patients that were restrained, 34% had behaved violently towards people, 2.2% towards property, and 47.8% towards people and property. In total, 17.6% of restrained patients exhibited mild violent behavior, 50.5% medium, 14.8% serious, and 1% acted extremely violent. When the rate of past violent behavior and total duration of restraint were compared between wards no significant difference was observed.

Of 182 restrained patients, 88 (48%) had a psychotic disorder and 89 (49%) had a mood disorder. Of the remaining 5 restrained patients, 3 had alcohol addiction, drug (cannabis) intoxication, and conduct/behavior disorder diagnoses, and 2 did not have a DSM Axis I diagnosis. The most frequent diagnosis was bipolar disorder-manic episode (n = 64, 35%), followed by schizophrenia (n = 33, 18%) and psychotic disorder NOS (n = 27, 15%). When DSM Axis II diagnoses were considered, mental retardation was observed in 12 patients, antisocial personality disorder in 7, and other personality disorders in the others. When Axis I diagnoses, number of restraints, and mean restraint duration were compared with the t test, no significant differences were observed. The number of doctors, nurses, and attendants in the wards, according to day and night shifts, and the ratio of employees/patients were determined. No difference between the wards according to these variables and no relationship between these variables and the use of restraint were observed (Table 6).

In all wards studied, 43.82% ± 0.427% of restraints were applied during daytime hours and the rest during nights or weekends. Mean total duration of restraint during regular working hours was 3.5 hours, versus 4.9 hours during after hours, and the difference was significant ($t = 2.332$, $P < 0.05$). The only ward that diverted from the

TABLE 3. Patient risk of restraint, mean restraint duration, and mean restraint duration per person.

Ward	Number of Patients	Number of Restrained Patients	Total Restraint Duration (hours)	Patient Restraint Risk	Mean Restraint Duration per Person (hour) (ward total restraint duration/total restraint number)							
					Mean	SD	Minimum	Maximum	Mean	SD	Minimum	Maximum
1. Adult Female Ward	96	22	239	2.49	10.86	12.83	2.00	54.50	3.96	2.76	1.50	14.50
2. Adult Female Ward	97	30	533.75	5.50	17.79	29.16	.25	150.00	5.21	3.94	.25	15.00
3. Adult Female Ward	89	18	166	1.87	9.22	6.55	1.00	20.00	4.81	3.14	1.00	12.00
1. Adult Male Ward	69	18	121.5	1.76	6.75	7.98	.50	33.00	2.36	1.35	.50	4.50
2. Adult Male Ward	59	21	90.5	1.53	4.90	4.53	.50	20.50	2.95	1.78	.50	8.00
3. Adult Male Ward	63	15	81.5	1.29	5.43	6.06	1.00	25.00	2.68	1.38	1.00	6.50
4. Adult Male Ward	65	9	60.5	0.93	6.72	10.96	.50	32.50	2.89	2.79	.50	8.50
5. Adult Male Ward	67	14	64	0.96	4.57	5.16	.50	16.00	1.64	.72	.50	3.00
6. Adult Male Ward	73	10	18	0.25	1.80	1.25	1.00	4.50	1.58	.85	1.00	3.50
Mediate Total	678	157	1374.75	0.23	8.83	15.20	.25	150.00	3.43	2.80	.25	15.00
Adolescent Female Ward	23	4	13	0.57	3.25	2.90	.50	6.00	1.28	1.00	.50	2.75
Adolescent Male Ward	26	5	56	2.15	11.20	10.44	1.50	23.50	2.12	.65	1.33	2.75
Alcohol/Drug PS	25	10	51.5	2.06	5.15	7.19	.50	23.00	1.55	.77	.50	3.00
Non-Detained Male Ward	22	1	6.5	0.30	6.50	0	6.5	6.5	6.50	0	6.5	6.5
Detained Male Ward	36	5	22.5	0.63	4.50	3.24	1.50	8.00	3.08	2.92	.75	8.00
General Total	810	182	1524.25	0.22	8.83	15.28	.25	150.00	3.25	2.72	.25	15.00

general trend was the 6th male ward, in which it was observed that the total duration of restraint during working hours was longer than after hours.

In total, 50% of the female patients, 61% of the males, and 56.6% percent of all patients were restrained at least once, and the rate of 6 or more restraints during the hospital stay was 10.4%. No significant difference was found between the number of males and females that were restrained. For those restrained more than once, reasons for the first 3 restraints were examined and the results were as follows: For the first restraint, 39.2% were due to active violence towards people, 28.1% due to the possibility of violence towards people, and 30.3% due to non-compliance with the rules of the ward. These percentages changed to 36.5%, 26%, and 36.6% for the second restraint, and 35%, 26%, and 36.6 % for the third restraint, respectively (Table 5).

BPRS scores determined within 24 hours of being restrained for the first time ranged from 19 to 71 (mean: 44.4 ± 9.704). A significant relationship between each ward's total restraint duration and total number of restraints, and BPRS scores was not observed. Significant but weak relationships between BPRS score, and mean restraint duration ($r = 0.153$, $P < 0.05$) and number of restraints ($r = 0.259$, $P < 0.001$) were observed.

No significant relationship was observed between the number of specialists, assistants, nurses, and attendants, and total number of restraints and total duration of restraint.

DISCUSSION

Seclusion and restraint are different. Their goals and results are also different. They should not be considered similar methods and should not be used interchangeably (Tsemberis and Sullivan, 1988). As there are no personal seclusion rooms at BHMND, the results of the present study should be expected to be different than those from hospitals with seclusion rooms. We maintain that with the present study, it is more useful to perceive the results of restraint at BHMND, in general, as restriction; therefore, the discussion includes research on both seclusion and restraint.

One of the limitations of the present study is that it was not possible to determine whether there was any

TABLE 4. Total number of restraints, total restraint duration, and comparison of mean restraint duration according to gender (t test).

	Gender	N	Average	Standard deviation	t	P
Total Number of Restraints	Female	74	2.5405	2.61287	.690	NS
	Male	108	2.2778	2.38309		
Total Restraint Duration	Female	74	11.1319	12.51478	3.560	< 0.001
	Male	108	5.4167	6.58464		
Mean Restraint Duration Per Person	Female	74	4.5304	3.40521	5.019	< 0.001
	Male	108	2.3880	1.65989		

NS: Not significant.

change during the 4 months following the directive's issuance, because the records before the restriction reduction program was initiated did not form a comparable database. Nonetheless, our data is expected to provide a comparative database for feature research.

The fact that restrained patients could not be compared to unrestrained patients, in terms of various variables, is another limitation of the present study. The cause of this limitation was that we directed all our attention towards gathering data on restrained patients, as our aim was to report on the current situation and to form a database for feature use.

In the present study significant relationships were not observed between sociodemographic characteristics like gender, education, marital status, with whom the patient lived, work status, whether males performed military duty or not, and social security, and the number of restraints and mean duration of restraint per patient.

Mean age of the female patients (36.2 years) was significantly higher than that of males (34.6 years). Younger patients were restrained for shorter periods of time and the difference in restraint duration between younger and older patients was significant. This result is similar to Smith et al.'s results (2005).

The finding that most patients were restrained only once (56.6%) is compatible with the results of Thompson (1986) and Üçok (1996). As in Phillips and Nasr's study (1983), the rate of 6 or more restraints for all patients in the present study was 10%. Female patients were restrained 2.5 times, on average, versus 2.3 times for males; the difference was not significant. While in Smith et al.' study (2005) the number of restraints and restraint duration were not different between the genders, in Forquer et al.'s study (1996) the use of seclusion and restraint was higher among male patients. It was determined that the mean number of restraints in BHMND was lower (3.8) than Kaltiala-Heino et al.'s results.

Mean total restraint duration in the present study was 8.8 ± 15.3 hours, whereas it was 19.4 hours in Kaltiala-Heino et al.' study (2003). On the other hand, Smith et al. (2005) reported a mean total restraint duration of 12 hours in 1992, which decreased to 1.9 hours in 2000, with the program applied. In Tunde-Ayinmode and Little's study (2004), while the total duration of seclusions ranged between 1 and 49 hours, mean restraint duration was 9 hours. The fact that their mean restraint duration was lower than in other reports inspires hope for BHMND, which is in the beginning phase of its restraint reduction program.

Although the number of restraints according to gender was not different, female patients, on average, were restrained for significantly longer periods of time, regardless of the fact that male patients behaved more violently. In consideration that women are more emotionally expressive when communicating about their problems and that the most common reason for restraining in BHMND was making excessive noise, female patients may have been restrained for longer periods of time in an effort to establish silence and order within the wards.

Although Crenshaw et al. (1997) reported that mentally ill patients that committed a crime in the past were restrained more often and for longer periods of time, in the present study no significant relationship was observed between a history of violent behavior, and number of times and duration that patients were restrained. Apart from that, the number of restraints and restraint duration in the forensic wards was not longer than in other wards.

Among the diagnoses of restrained patients, most were psychotic disorders, followed by mood disorders; however, if psychotic disorders NOS were considered separately, bipolar disorder was the most frequent, followed by schizophrenia. Üçok et al. (1996) reported similar results, but Tunde-Ayinmode and Little (2004), and

TABLE 5. Reasons for the first 3 restraints and total number of restraints.

Reason for Restraint	1. Number of Restraints	2. Number of Restraints	3. Number of Restraints	Total Number of Restraints
Patient Total	182	78	51	311
Active Violence Towards People				
Violent Behavior Towards Other Patients	59 (14.3%)	15 (9.3%)	15 (12.2%)	89 (11.9%)
Violent Behavior Towards the Treatment Team	73 (17.7%)	30 (18.6%)	18 (14.7%)	121 (17.4%)
Self-injury	30 (7.2%)	14 (8.6%)	10 (8.1%)	54 (7.8%)
Violence Towards People	162 (39.2%)	59 (36.5%)	43 (35.0%)	264 (37.1%)
Probable Violence Towards People				
Threatening to Behave Violently	75 (18.2%)	25 (15.5%)	20 (16.3%)	120 (17.3%)
Violence Towards Property	41 (9.9%)	17 (10.5%)	22 (18.0%)	80 (11.5%)
Probable Violence Towards People	116 (28.1%)	42 (26%)	42 (34.3%)	200 (28.8%)
Reasons Related to the Ward Environment				
Excessive Noise-Behavioral Disorder	100 (24.3%)	49 (30.4%)	34 (27.8%)	183 (26.4%)
Attempt to Leave Ward Without Permission	25 (6.0%)	10 (6.2%)	0	35 (5.0%)
Other	8 (1.9%)	1 (0.6%)	3 (2.4%)	12 (% 2.7%)
Reasons Related to the Ward Environment	133 (32.2%)	60 (37.2%)	37 (30.2%)	230 (34.1%)
Reasons for Restraint TOTAL NUMBER	411 (100%)	161 (100%)	122 (100%)	694 (100%)

Kaltiala-Heino et al (2003) reported that the majority of diagnoses among restrained patients was schizophrenia, followed by bipolar disorder. Forquer et al. (1996) also reported that a schizophrenia diagnosis was related to gretaer risk for seclusion and restraint.

These different results can be, depending on inpatient diagnoses, characteristics of every hospital. On the other hand, the decision to restrain has more to do with patient behavior and the attitudes of hospital employees than with patient diagnoses.

When we looked at the additional therapies administered during the first 3 restraints, no additional therapy was administered during 202 of the 311 restraints (65%). Those patients that did receive additional treatment received typical antipsychotics (81.6%) (83% haloperidol, 12% chlorpromazine). In all, 12 patients (11%) received benzodiazepine and 8 (7.3%) received atypical antipsychotics. In Cannon et al.' study, which examined different types of chemical restraint, they reported that haloperidol was given to 82% of the patients, midazolam was given to 82% of the patients, and diazepam was given to 59%. As additional chemical therapy, other than that used for standard daily treatment, to prevent violence or violent behavior is not recommended (Curie 2005), and neuroleptic malign syndrome and other risks due to agitation in restrained patients are possible, it is reassuring to report that during the present study no additional chemical therapies were used.

When reasons for using restraint were examined as a group, active violence towards people was the most frequent (37.1%), followed by issues related to ward environment (34.1%) and the probability of violence towards people (28.8%). When subheadings for the reasons for the first 3 restraints were reviewed the most frequent was excessive noise making and behavioral disorders (26.4), followed by violent behavior towards the treatment team (17.4%), threatening to act violently (17.3%), violent behavior towards other patients (11.5%), self-injury (7.8%), and attempting to leave the ward without consent (5%).

Among the reasons for using restraint, active violent behavior accounted for close to 40%. When probable violence towards people was added, 66.6% of the restraints were because of active or probable violence towards humans. Among the reasons to use seclusion/restraint, violence or the threat of violence stand out as the most widely accepted when all other measures to control patients prove to be insufficient. Brown and Tooke (1992) analyzed 17 studies on the reasons for seclusion and reported that violence was the most important reason only in 2 studies, the threat of violence in 1 study , and in 6 studies the most important reason was agitation. Üçok et al. (1996), and Tunde-Ayinmode and Little (2004) reported that the most frequent reason to use restraint was to prevent patients from inflicting self-harm or harming others. Swett (1994) reported that the threat of violence was the most frequent reason for using seclu-

TABLE 6. Number of employees per ward and the employee/bed ratio.

	Number of Beds	Day Nurses	Day Attendants	Nurses on duty	Attendants on duty	Specialist Psychiatrists	Psychiatry Assistants
1. Female Ward	60	5 (8.3%)	4 (6.7%)	2 (3.3%)	2 (3.3%)	6 (%10%)	5 (8.3%)
2. Female Ward	62	5 (8.1%)	6 (9.7%)	2 (3.2%)	2 (3.2%)	4 (6.5%)	5 (8.1%)
3. Female Ward	67	6 (8.6%)	6 (8.6%)	2 (2.9%)	2 (2.9%)	4 (5.9%)	5 (7.5%)
1. Male Ward	48	4 (8.3%)	4 (8.3%)	2 (4.1%)	2 (4.1%)	4 (8.3%)	3 (6.3%)
2. Male Ward	48	5 (10.4%)	6 (12.5%)	2 (4.1%)	2 (4.1%)	4 (8.3%)	4 (8.3%)
3. Male Ward	48	5 (10.4%)	5 (10.4%)	2 (4.1%)	2 (4.1%)	5 (10.4%)	7 (14.6%)
4. Male Ward	48	6 (12.5%)	6 (12.5%)	2 (4.1%)	2 (4.1%)	2 (4.1%)	6 (12.5%)
5. Male Ward	46	4 (8.7%)	5 (10.9%)	2 (4.3%)	2 (4.3%)	3 (6.5%)	6 (13.0%)
6. Male Ward	49	5 (10.2%)	5 (10.2%)	2 (4.1%)	2 (4.1%)	4 (8.2%)	4 (8.2%)
Adolescent Female Ward	16	2 (12.5%)	2 (12.5%)	1 (6.2%)	1 (6.2%)	3 (18.8%)	2 (12.5%)
Adolescent Male Ward	19	2 (10.5%)	2 10.5%)	1 (5.3%)	1 (5.3%)	3 (18.3%)	2 (10.5%)
Alcohol-Drug Psychosis Ward	20	2 (10.0%)	2 (10.0%)	1 (5.0%)	1 (5.0%)	3 (15.0%)	2 (10.0%)
Forensic Ward for Non-detained Male	55	7 (12.7%)	3 (5.4%)	1 (1.8%)	2 (3.6%)	3 (5.4%)	2 (3.6%)
Detained Male Forensic Ward	42	5 (11.9%)	2 (4.7%)	1 (2.4%)	1 (2.4%)	3 (7.1%)	2 (4.7%)
Total	628	63 (10.0%)	58 (9.2%)	23 (3.6%)	24 (3.8%)	51 (8.1%)	55 (8.8%)

sion and restraint. Actually, in many studies what stands out are reasons having to do with the ward environment (Soloff and Turner, 1981; Hammill et al., 1989; Brown and Tooke, 1992; Heilburn et al., 1995; Walsh and Randell, 1995). Reasons for using seclusion/restraint related to the ward environment include patients walking around restlessly, acting noisily and disturbingly, exhibiting sexual behavior, such as removing clothing or masturbating, and attempting to leave the ward, which are considered non-violent excitation. The 1/3 rate as ward-related reasons is not to be underestimated. Of course an agitated patient behaving in a manner that is disturbing to the ward that does include violence or the potential for violence should be dealt with in a less restrictive and more therapeutic manner. Moreover, it is not definitively known whether these patients will in fact become violent if not restrained. Kaltiala-Heino et al. (2000) reported that coercion and restrictions are used excessively in psychiatric units.

In the present study 44% of restraints occured during work hours and 56% during watch. Total restraint duration during work hours was 3.5 hours, on average, and 5 hours during watch; the difference was significant. It's not surprising that there were more restraints and for longer periods of time during watch hours, considering that there were fewer doctors, nurses, and attendants per person during watch hours. In addition, other studies have reported that seclusion and restraint are more frequent during working hours (Phillips and Nasr 1983; Tunde-Ayinmode and Little 2004; Smith et al. 2005;). Smith et al. (2005) reported that restraint duration was not different between weekdays and weekends. Studies that evaluated the use of restraint according to the time of day reported that behaviors indicative of the need for restraint increased during daily routine's transition hours, and that the potential for violence and the need for restraint decreased during the hours when patients and workers expected less from each other (Way, 1986; Silver and Yudofsky, 1987).

Morrison and Lehane (1995) studied patient/employee ratios and determined that more seclusion was used when there were fewer employees present. The possible relationship between the hour of the day and the use of seclusion/restraint was examined in many studies, but one examined the patient-employee ratio and observed that more seclusion and restraint was used during evening watches, independent of patient-employee ratios (Way et al., 1992). The fact that in the present study patients were restrained more frequently and for longer periods of time during watch was probably due to the greater number of employees present during work hours. It can be concluded that during watch hours, doctors and nurses that are anxious about the lack of control are more likely to use restraint and for longer periods of time.

BPRS was administered to all patients within 24 hours of being restrained and the mean score was 44.4.

When BPRS scores were compared with total number of restraints and restraint duration, the differences between wards were not significant. Significant but weak correlations (r = 0.15 and r = 0.26) were observed between BPRS score, and mean restraint duration and number of restraints.

At BHMND the difference between the lowest and highest restraint rates was approximately 3-fold (13.7%-40.7%). This difference increased to 9.2-fold in regard to duration of restraint (18-166 hours). The rate of restraint, the duration of restraint, and the duration of restraint per person were high in female patients. Restraint duration in the 2nd adult female ward and 2nd adult male ward were higher than in the other wards. During the course of the present study these wards were newly established. The team of the former used to work in a male psychosis ward and the team of the latter in a ward for non-psychotic patients. Although no difference was observed between the wards' health workers in terms of general work experience, the fact that 1 ward team had less experience dealing with acute female patients and that the other team had less experience dealing with acute psychotic patients might have influenced the results. As it is known, female patients' behaviors under the influence of psychosis show differences, on the other hand, clinical experience is more significant than theoretical knowledge in dealing with a violent patient.

In 2 female wards and in 1 male ward total restraint duration outside working hours was statistically significantly longer than in the other wards. This could be interpreted as the result of the teams' difficulty dealing with violent patients during watch hours. All these differences are thought to be related to ward workers, but a significant relationship was not observed between these variables, and total number of restraints, and total and mean restraint duration.

In the present study the number of times patients were restrained and the rate at which they were restrained at BHMND were observed to be average, compared to international standards. The risk of a patient being restrained and restrained for a long period of time increased if the patient was female, older, and had psychotic symptoms. After work hours present a greater risk that patients will be restrained more often and for longer periods of time.

Fisher (1994) suggested that non-clinical factors —cultural prejudices, workers' mentality of duty, and attitudes of hospital management— have a greater effect than common and clinical factors on seclusion and restraint rates. In the present study, although patients were admitted to the wards in order of arrival without selection, and differences were not determined between wards in terms of patient BPRS scores or all other data pertaining to patients, significant differences were observed between the wards' use of restraint, in terms of their number and duration. That being the case, it's thought that all mental health employees' (doctors being the most important) prejudices, clinical administration mentalities, experiences, behaviors, and attitudes stand out as the leading factor of change.

We think that a series of studies need to be conducted in order to reduce and abolish patient restraint in Turkey.

1) Seclusion and restraint standards need to be established and all necessary requirements need to be completed and made effective throughout Turkey.

2) All mental health workers, primarily emergency outpatient clinic and acute psychiatry ward workers, need to be trained in order to change attitudes in that direction and to gain skills.

3) Monitoring programs need to be established in order to reduce the use of seclusion and restraint.

Another way to reduce seclusion-restraint is to regulate drug treatment aimed at violence prevention. The general principle should be not to say, "we tried everything". When classical treatments are exhausted, a series of drug trials can be employed. For example, the observation that clozapine reduces violent behavior, independent of it's antipsychotic effect, should be considered as something important. For many patients significant success was achieved by adding topiramate to the standard drug treatment and by using combination mesoridazine-amantadine for patients that don't tolerate or respond to clozapine treatment; adding ECT to clozapine also proved to be helpful (Fisher, 2003).

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