



Retrospective Study on the Use of Restraints in an Acute Psychiatric Inpatient Unit

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Abstract

Background: This retrospective observational study investigates the utilization of restraints in the psychiatric inpatient unit of King Salman Armed Forces Hospital, Tabuk, KSA, over a 12-month period from October 1, 2022, to September 30, 2023. The study aims to discern patterns and factors associated with the use of restraints, shedding light on the demographics and circumstances surrounding restraining episodes.

Methods: Data for analysis were collected from medical records, incident reports, and electronic databases. A total of 17 patients who experienced 54 restraining episodes were included in the study. The analysis focused on patient characteristics, including age, gender, substance-related conditions, psychiatric diagnoses, seasonal variations, and the length of stay during admission.

Results: The majority of restrained patients were male (76.5%), aged 17 to 29 years (58.8%), and diagnosed with Bipolar Mood Disorder (41.2%). Notably, a significant association was found between substance-related conditions and the use of restraints ($X^2 = 26.724$, $p = 0.000$). Patients without substance-related conditions exhibited more diverse lengths of stay. A substantial relationship was identified between specific psychiatric diagnoses and the use of restraints ($X^2 = 65.718$, $p = 0.000$), particularly Bipolar Mood Disorder. Seasonal variations significantly influenced restraining episodes ($X^2 = 32.554$, $p = 0.000$), with higher occurrences during Autumn and Winter. The length of stay during admission was significantly associated with the occurrence of restraining episodes ($X^2 = 26.724$, $p = 0.000$), indicating a higher likelihood of restraints in patients with substance-related conditions and shorter lengths of stay.

Conclusion: This study provides comprehensive insights into the intricate dynamics of patient demographics, diagnoses, and environmental factors influencing the use of restraints in a psychiatric inpatient setting. The findings underscore the importance of tailored interventions for specific patient populations, with implications for improving patient care and fostering ethical practices within psychiatric inpatient units. Future research should explore the impact of targeted interventions and assess the effectiveness of strategies aimed at reducing restraint use in this population.

Keywords – observational, Circumstances, Restraining, Exhibited, comprehensive

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Background

Mental health disorders pose a significant global health challenge, with the burden of psychiatric illnesses contributing substantially to disability and impaired quality of life [1-3]. Within this landscape, acute psychiatric inpatient units serve as crucial settings for the management of individuals experiencing severe

mental health crises. Despite the importance of these units, instances of using physical restraints remain a contentious and complex aspect of psychiatric care.

Restraint use in psychiatric settings has garnered attention due to its ethical implications, potential for harm, and the broader discourse on patient rights [4-6]. Physical restraints involve the application of devices or manual methods to restrict a patient's movement, and their use is often seen as a last resort in managing behavior that poses an imminent risk to the individual or others [7, 8]. While restraints aim to prevent harm, they raise ethical concerns related to autonomy, dignity, and the potential for exacerbating distress in vulnerable individuals [9, 10].

The decision to employ restraints is multifaceted, influenced by a myriad of factors, including patient characteristics, psychiatric diagnoses, environmental conditions, and staff training [8]. Understanding the patterns and determinants of restraint use is crucial for optimizing psychiatric care, safeguarding patient rights, and minimizing potential harm [10-12].

The context of psychiatric inpatient care necessitates a delicate balance between ensuring the safety of patients and staff and upholding the fundamental principles of patient autonomy and dignity [2]. Previous research indicates considerable variability in restraint practices across psychiatric facilities, reflecting the complexity of factors influencing decision-making in the use of these interventions [8-10].

Individuals with mood disorders such as Bipolar Mood Disorder may exhibit impulsive and agitated behaviors during acute episodes, potentially leading to situations where restraint is deemed necessary [13, 14]. Similarly, patients with substance-related conditions may pose distinct challenges, as the interplay between substance use and psychiatric symptoms can complicate clinical management [7].

Moreover, external factors, including seasonal variations, may influence the dynamics within psychiatric inpatient units [10]. Understanding how these factors interconnect and contribute to the decision-making process surrounding restraint use is a critical step toward developing targeted interventions and enhancing the overall quality of psychiatric care [12].

Study Aim

The primary aim of this study is to investigate patterns and factors related to the use of physical restraints in the psychiatric inpatient unit of King Salman Armed Forces Hospital, Tabuk, KSA, over a 12-month period.

Study Rationale

Despite the growing body of literature on restraint use in psychiatric settings, there is a paucity of research specific to the context of King Salman Armed Forces Hospital in Tabuk, KSA. The unique socio-cultural and institutional factors influencing psychiatric care in this setting necessitate a dedicated exploration of restraint practices.

By examining patient characteristics, psychiatric diagnoses, seasonal variations, and other contextual factors, the study seeks to elucidate the complexities surrounding restraint use in this specific setting. The findings aim to contribute insights for clinicians, administrators, and policymakers to enhance the quality of psychiatric care, uphold patient rights, and promote ethical practices within acute psychiatric inpatient units.

Methodology

Study Design

A retrospective observational study design was employed to investigate the utilization of restraints in the psychiatric inpatient unit of King Salman Armed Forces Hospital, Tabuk, KSA. The study covered a 12-month period, from October 1, 2022, to September 30, 2023, retrospectively examining medical records, incident reports, and electronic databases.

Data Collection

The data collection process involved systematically retrieving information from multiple sources within the psychiatric inpatient unit. Patient records, incident reports detailing restraining episodes, and electronic databases containing relevant clinical data were accessed. A thorough examination of these sources provided a comprehensive dataset for analysis.

Inclusion Criteria

All patients who were subjected to restraint within the specified timeframe were included in the study. The inclusion criteria encompassed both male and female patients, spanning various age groups and psychiatric diagnoses. The study aimed to encompass a broad spectrum of cases to ensure a representative understanding of restraint utilization in the psychiatric inpatient setting.

Data Variables

Key variables extracted from the records included patient demographics (age, gender), psychiatric diagnoses, presence of substance-related conditions, details of restraining episodes (reasons, duration, time of occurrence), length of stay during admission, and seasonal variations in admission.

Data Analysis

Quantitative data analysis was conducted using statistical software. Descriptive statistics, such as frequencies and percentages, were utilized to characterize the demographic and clinical profiles of restrained patients. The chi-square test was employed to assess associations between categorical variables, such as the presence of substance-related conditions and the occurrence of restraining episodes. Statistical significance was set at a p-value of less than 0.05.

Ethical Considerations

This study adhered to ethical guidelines and principles. Approval was obtained from the Institutional Review Board of King Salman Armed Forces Hospital, ensuring the confidentiality and anonymity of patient information. Informed consent was not required as the study involved the retrospective analysis of existing medical records, and patient identities were protected. The confidentiality and security of patient data were paramount. Access to electronic databases and physical records was restricted to the research team, and all data were anonymized to protect patient privacy.

Results

This retrospective study included 17 patients, experiencing a total of 54 restraining episodes. In Table 1, which outlines the characteristics of the 17 patients included in the study, we observe a diverse range of demographic and clinical features. The majority of patients fall within the age range of 17 to 29 years, constituting 58.8% of the sample, with the remaining 41.2% falling between the ages of 30 to 60 years. The gender distribution indicates a higher prevalence of male patients, accounting for 76.5% of the cohort. Regarding substance-related issues, the data reveals that 88.2% of patients had no substance-related concerns, while 11.8% had a documented history of substance-related issues.

The diagnostic profile of the patients shows a varied spectrum of psychiatric disorders. Bipolar Mood Disorder is the most prevalent, affecting 41.2% of the patients, followed by Schizophrenia at 23.5%. Other diagnoses include Borderline Personality Disorder, MDD with Psychotic Features, Schizoaffective disorder, Schizophreniform disorder, and Substance-induced psychosis, each contributing to the overall clinical diversity of the cohort. Seasonal patterns of admission indicate a higher incidence during the Autumn season (35.3%), followed by Winter (29.4%), Spring (23.5%), and Summer (11.8%). The length of stay varies, with the majority of patients staying between 11 to 20 days (47.1%).

Table 2 characterizes the 54 restraining episodes. The age distribution of patients subjected to restraining episodes shows that a majority, 61.1%, fall within the age range of 17 to 29 years. Males again constitute the majority at 79.6%, reflecting a higher prevalence of restraining episodes in this gender group.

Substance-related factors play a role in 9.3% of cases, with the majority (90.7%) having no documented substance-related issues.

Bipolar Mood Disorder is the most frequently documented diagnosis in episodes of restraint, accounting for 46.3% of cases. Other prevalent diagnoses include Schizophreniform disorder, Schizophrenia, and Schizoaffective disorder, each contributing significantly to the overall pattern. Seasonal trends during episodes of restraint demonstrate a similar pattern to admissions, with the highest incidence occurring during Autumn (31.5%) and Winter (27.8%).

Examining the temporal aspect of restraining incidents, the data shows a relatively balanced distribution throughout the day, with the highest proportion occurring between 18:00 and 23:59 (37%). The reasons for restraint vary, with Physical Aggression being the most common (38.9%), followed by Aggression (22.2%) and Verbal Aggression (16.7%). The duration of restraint varies, with almost half of the cases lasting between 31 to 90 minutes (46.3%).

Table 3 provides a comprehensive analysis of the duration of restraining episodes in association with various patient and situational characteristics. Examining the relationship between the age of patients and the duration of restraint, the data reveals no statistically significant difference ($X^2 = 2.830$, $p = 0.243$). Patients aged 17 to 29 years experienced restraining durations of up to 30 minutes in 9.1% of cases, 31 to 90 minutes in 45.5% of cases, and 91 minutes or more in another 45.5% of cases. Similarly, patients aged 30 or more exhibited varied durations with 23.8% experiencing up to 30 minutes, 47.6% between 31 to 90 minutes, and 28.6% enduring 91 minutes or more.

The association between gender and the duration of restraint was not found to be statistically significant ($X^2 = 0.130$, $p = 0.937$). Both male and female patients demonstrated diverse durations of restraint, with 14% of male patients experiencing durations up to 30 minutes, 46.5% between 31 to 90 minutes, and 39.5% enduring 91 minutes or more.

Considering substance-related factors, there was no statistically significant association with the duration of restraint ($X^2 = 1.042$, $p = 0.594$). Patients without substance-related issues exhibited varied durations, with 16.3% enduring up to 30 minutes, 44.9% between 31 to 90 minutes, and 38.8% enduring 91 minutes or more. Patients with substance-related issues experienced durations of 60% between 31 to 90 minutes and 40% enduring 91 minutes or more.

Examining the association between the diagnosis and the duration of restraint revealed a statistically significant relationship ($X^2 = 23.979$, $p = 0.020$). Patients diagnosed with Bipolar Mood Disorder experienced diverse durations, with 16% enduring up to 30 minutes, 52% between 31 to 90 minutes, and 32% enduring 91 minutes or more. Other diagnoses exhibited varied patterns, emphasizing the nuanced relationship between diagnosis and the duration of restraint.

Seasonal patterns significantly influenced the duration of restraining episodes ($X^2 = 18.902$, $p = 0.004$). Patients restrained during Autumn and Winter showed a higher likelihood of enduring longer durations compared to those restrained in Spring and Summer.

The temporal aspect of restraining incidents, as reflected in the time of the day, did not yield statistically significant associations with the duration of restraint ($X^2 = 4.038$, $p = 0.672$). Incidents occurring during different time intervals displayed diverse durations.

Analyzing the reason for restraining, a significant association was found ($X^2 = 24.583$, $p = 0.006$). Notably, episodes related to aggression and verbal aggression were associated with longer durations of restraint, emphasizing the impact of the underlying reason on the duration of the intervention.

Finally, examining the length of stay of the patient in association with the duration of restraint revealed no statistically significant association ($X^2 = 7.559$, $p = 0.272$). Patients with varying lengths of stay demonstrated diverse durations of restraint.

Table 4 offers insights into the association between substance-related conditions and various patient and situational characteristics, shedding light on the nuanced interplay between these factors. Analyzing the relationship between age and substance-related conditions, the data indicates a trend towards statistical significance ($\chi^2 = 3.506$, $p = 0.061$). In the age group of 17 to 29 years, 84.8% of patients had no documented substance-related conditions, while 15.2% did. Conversely, all patients aged 30 or more had no substance-related issues.

Considering gender, no statistically significant association was found with substance-related conditions ($\chi^2 = 1.410$, $p = 0.235$). Females were uniformly devoid of substance-related conditions, while 11.6% of males exhibited such issues.

The relationship between diagnosis and substance-related conditions reveals a significant association ($\chi^2 = 54.000$, $p = 0.000$). Notably, patients diagnosed with Bipolar Mood Disorder, Borderline Personality Disorder, MDD with Psychotic Features, Schizoaffective disorder, Schizophreniform disorder, and Schizophrenia had no documented substance-related conditions, whereas all cases of Substance-induced psychosis were associated with substance-related issues.

Examining the seasonal patterns in association with substance-related conditions, a statistically significant relationship emerges ($\chi^2 = 14.243$, $p = 0.003$). During Autumn and Winter, a higher percentage of patients with substance-related conditions were observed compared to Spring and Summer.

The time of day when restraining incidents occurred did not exhibit a statistically significant association with substance-related conditions ($\chi^2 = 4.805$, $p = 0.187$). Restraining incidents during different time intervals displayed varied associations with substance-related conditions.

Analyzing the reason for restraining, no statistically significant association was found with substance-related conditions ($\chi^2 = 2.047$, $p = 0.843$). Various reasons for restraining, including aggression, agitation, physical aggression, self-harm, attempted absconding, and verbal aggression, showed diverse associations with substance-related conditions.

Regarding the duration of restraint, no statistically significant association was found with substance-related conditions ($\chi^2 = 1.042$, $p = 0.594$). Different durations of restraint, including up to 30 minutes, 31 to 90 minutes, and 91 minutes or more, exhibited varied associations with substance-related conditions.

The length of stay of the patient was significantly associated with substance-related conditions ($\chi^2 = 26.724$, $p = 0.000$). Patients with substance-related conditions were more likely to have longer stays, with 66.7% of those staying 1 to 10 days having substance-related conditions, compared to 4.2% in the same category without substance-related conditions. This pattern continues across different lengths of stay, indicating a strong association.

Table 5 provides a detailed examination of the association between the length of stay during admission and various patient and situational characteristics in the context of restraining episodes. Analyzing the relationship between age and length of stay, the data indicates no statistically significant association ($\chi^2 = 0.877$, $p = 0.831$). Patients aged 17 to 29 exhibited varied lengths of stay, with 12.1% staying 1 to 10 days, 39.4% staying 11 to 20 days, 18.2% staying 21 to 30 days, and 30.3% staying 31 days or more. Similarly, patients aged 30 or more also displayed diverse lengths of stay, with 9.5% staying 1 to 10 days, 52.4% staying 11 to 20 days, 14.3% staying 21 to 30 days, and 23.8% staying 31 days or more.

Considering gender, a statistically significant association with the length of stay was observed ($\chi^2 = 12.901$, $p = 0.005$). Female patients predominantly had longer lengths of stay, with 90.9% staying 11 to 20 days, while male patients showed more varied lengths of stay.

The relationship between substance-related conditions and the length of stay was highly significant ($\chi^2 = 26.724$, $p = 0.000$). Patients without substance-related issues had more diverse lengths of stay, while those with substance-related conditions predominantly stayed 1 to 10 days.

Analyzing the association between diagnosis and length of stay revealed a highly significant relationship ($X^2 = 65.717$, $p = 0.000$). Patients diagnosed with Bipolar Mood Disorder predominantly had longer lengths of stay, while other diagnoses displayed varying patterns.

Seasonal patterns were significantly associated with the length of stay ($X^2 = 32.554$, $p = 0.000$). Patients admitted during Autumn and Winter showed a higher likelihood of staying 11 to 20 days, while those admitted during Spring and Summer exhibited diverse lengths of stay.

The time of day when restraining incidents occurred did not exhibit a statistically significant association with the length of stay ($X^2 = 4.826$, $p = 0.849$). Restraining incidents during different time intervals displayed varied associations with the length of stay.

Examining the reason for restraining, a trend towards significance was observed ($X^2 = 23.824$, $p = 0.068$). Episodes related to aggression showed a tendency for longer lengths of stay.

No statistically significant association was found between the duration of restraint and the length of stay ($X^2 = 7.559$, $p = 0.272$). Different durations of restraint exhibited varied associations with the length of stay.

Table 1: Characteristics of included patients (n=17).

Parameter		Frequency (%)
Age, y	17 to 29	10 (58.8%)
	30 to 60	7 (41.2%)
Gender	Female	4 (23.5%)
	Male	13 (76.5%)
Substance-related	No	15 (88.2%)
	Yes	2 (11.8%)
Diagnosis	Bipolar Mood Disorder	7 (41.2%)
	Borderline Personality Disorder	1 (5.9%)
	MDD with Psychotic Features	1 (5.9%)
	Schizoaffective disorder	1 (5.9%)
	Schizophreniform disorder	1 (5.9%)
	Schizophrenia	4 (23.5%)
	Substance induced psychosis	2 (11.8%)
Season of admission	Autumn	6 (35.3%)
	Spring	4 (23.5%)
	Summer	2 (11.8%)
	Winter	5 (29.4%)
Length of stay	1 to 10 days	3 (17.6%)
	11 to 20 days	8 (47.1%)
	21 to 30 days	3 (17.6%)
	31 days or more	3 (17.6%)

Table 2: Characteristics of total episodes of restraining (n=54).

Parameter		Frequency (%)
Age, y	17 to 29	33 (61.1%)
	30 or more	21 (38.9%)
Gender	Female	11 (20.4%)
	Male	43 (79.6%)
Substance-related	No	49 (90.7%)
	Yes	5 (9.3%)
Diagnosis	Bipolar Mood Disorder	25 (46.3%)
	Borderline Personality Disorder	3 (5.6%)
	MDD with Psychotic Features	1 (1.9%)
	Schizoaffective disorder	6 (11.1%)
	Schizophreniform disorder	7 (13%)
	Schizophrenia	7 (13%)
	Substance induced psychosis	5 (9.3%)
Season	Autumn	17 (31.5%)
	Spring	12 (22.2%)
	Summer	10 (18.5%)
	Winter	15 (27.8%)
Time of the day when the restraining happened	00:00-05:59	6 (11.1%)
	06:00-11:59	13 (24.1%)
	12:00-17:59	15 (27.8%)
	18:00-23:59	20 (37%)
Reason of restraining	Aggression	12 (22.2%)
	Agitation	7 (13%)
	Physical Aggression	21 (38.9%)
	Self-harm	4 (7.4%)
	Tried to abscond	1 (1.9%)
	Verbal Aggression	9 (16.7%)
Duration of restraining	Up to 30 mins	8 (14.8%)
	31-90 mins	25 (46.3%)
	91 mins or more	21 (38.9%)
Length of stay of the patient	1 to 10 days	6 (11.1%)
	11 to 20 days	24 (44.4%)

	21 to 30 days	9 (16.7%)
	31 days or more	15 (27.8%)

Table 3: Duration of restraining in association with characters of total episodes of restraining (n=54).

Parameter		Duration of restraining			X ²	P-value
		Up to 30 mins	31-90 mins	91 mins or more		
Age, y	17 to 29	3 (9.1%)	15 (45.5%)	15 (45.5%)	2.830	0.243
	30 or more	5 (23.8%)	10 (47.6%)	6 (28.6%)		
Gender	Female	2 (18.2%)	5 (45.5%)	4 (36.4%)	0.130	0.937
	Male	6 (14%)	20 (46.5%)	17 (39.5%)		
Substance-related	No	8 (16.3%)	22 (44.9%)	19 (38.8%)	1.042	0.594
	Yes	0 (0%)	3 (60%)	2 (40%)		
Diagnosis	Bipolar Mood Disorder	4 (16%)	13 (52%)	8 (32%)	23.979	0.020
	Borderline Personality Disorder	0 (0%)	1 (33.3%)	2 (66.7%)		
	MDD with Psychotic Features	1 (100%)	0 (0%)	0 (0%)		
	Schizoaffective disorder	2 (33.3%)	4 (66.7%)	0 (0%)		
	Schizophreniform disorder	0 (0%)	0 (0%)	7 (100%)		
	Schizophrenia	1 (14.3%)	4 (57.1%)	2 (28.6%)		
	Substance induced psychosis	0 (0%)	3 (60%)	2 (40%)		
Season	Autumn	3 (17.6%)	10 (58.8%)	4 (23.5%)	18.902	0.004
	Spring	1 (8.3%)	0 (0%)	11 (91.7%)		
	Summer	2 (20%)	6 (60%)	2 (20%)		
	Winter	2 (13.3%)	9 (60%)	4 (26.7%)		
Time of the day when the restraining happened	00:00-05:59	1 (16.7%)	1 (16.7%)	4 (66.7%)	4.038	0.672
	06:00-11:59	2 (15.4%)	5 (38.5%)	6 (46.2%)		
	12:00-17:59	2 (13.3%)	9 (60%)	4 (26.7%)		
	18:00-23:59	3 (15%)	10 (50%)	7 (35%)		
Reason of restraining	Aggression	0 (0%)	1 (8.3%)	11 (91.7%)	24.583	0.006
	Agitation	2 (28.6%)	4 (57.1%)	1 (14.3%)		

	Physical Aggression	2 (9.5%)	13 (61.9%)	6 (28.6%)		
	Self-harm	2 (50%)	1 (25%)	1 (25%)		
	Tried to abscond	0 (0%)	1 (100%)	0 (0%)		
	Verbal Aggression	2 (22.2%)	5 (55.6%)	2 (22.2%)		
Length of stay of the patient	1 to 10 days	1 (16.7%)	2 (33.3%)	3 (50%)	7.559	0.272
	11 to 20 days	4 (16.7%)	15 (62.5%)	5 (20.8%)		
	21 to 30 days	2 (22.2%)	2 (22.2%)	5 (55.6%)		
	31 days or more	1 (6.7%)	6 (40%)	8 (53.3%)		

Table 4: Substance-related conditions in association with characters of total episodes of restraining (n=54).

Parameter		Substance-related		X ²	P-value
		No	Yes		
Age, y	17 to 29	28 (84.8%)	5 (15.2%)	3.506	0.061
	30 or more	21 (100%)	0 (0%)		
Gender	Female	11 (100%)	0 (0%)	1.410	0.235
	Male	38 (88.4%)	5 (11.6%)		
Diagnosis	Bipolar Mood Disorder	25 (100%)	0 (0%)	54.000	0.000
	Borderline Personality Disorder	3 (100%)	0 (0%)		
	MDD with Psychotic Features	1 (100%)	0 (0%)		
	Schizoaffective disorder	6 (100%)	0 (0%)		
	Schizophreniform disorder	7 (100%)	0 (0%)		
	Schizophrenia	7 (100%)	0 (0%)		
	Substance induced psychosis	0 (0%)	5 (100%)		
Season	Autumn	16 (94.1%)	1 (5.9%)	14.233	0.003
	Spring	12 (100%)	0 (0%)		
	Summer	6 (60%)	4 (40%)		
	Winter	15 (100%)	0 (0%)		
Time of the day when the restraining happened	00:00-05:59	6 (100%)	0 (0%)	4.805	0.187
	06:00-11:59	13 (100%)	0 (0%)		
	12:00-17:59	14 (93.3%)	1 (6.7%)		

	18:00-23:59	16 (80%)	4 (20%)		
Reason of restraining	Aggression	10 (83.3%)	2 (16.7%)	2.047	0.843
	Agitation	7 (100%)	0 (0%)		
	Physical Aggression	19 (90.5%)	2 (9.5%)		
	Self-harm	4 (100%)	0 (0%)		
	Tried to abscond	1 (100%)	0 (0%)		
	Verbal Aggression	8 (88.9%)	1 (11.1%)		
Duration of restraining	Up to 30 mins	8 (100%)	0 (0%)	1.042	0.594
	31-90 mins	22 (88%)	3 (12%)		
	91 mins or more	19 (90.5%)	2 (9.5%)		
Length of stay of the patient	1 to 10 days	2 (33.3%)	4 (66.7%)	26.724	0.000
	11 to 20 days	23 (95.8%)	1 (4.2%)		
	21 to 30 days	9 (100%)	0 (0%)		
	31 days or more	15 (100%)	0 (0%)		

Table 5: Length of stay (admission) in association with characters of total episodes of restraining (n=54).

Parameter		Length of stay (admission)				X²	P-value
		1 to 10 days	11 to 20 days	21 to 30 days	31 days or more		
Age, y	17 to 29	4 (12.1%)	13 (39.4%)	6 (18.2%)	10 (30.3%)	0.877	0.831
	30 or more	2 (9.5%)	11 (52.4%)	3 (14.3%)	5 (23.8%)		
Gender	Female	1 (9.1%)	10 (90.9%)	0 (0%)	0 (0%)	12.901	0.005
	Male	5 (11.6%)	14 (32.6%)	9 (20.9%)	15 (34.9%)		
Substance-related	No	2 (4.1%)	23 (46.9%)	9 (18.4%)	15 (30.6%)	26.724	0.000
	Yes	4 (80%)	1 (20%)	0 (0%)	0 (0%)		
Diagnosis	Bipolar Mood Disorder	1 (4%)	11 (44%)	8 (32%)	5 (20%)	65.717	0.000
	Borderline Personality Disorder	0 (0%)	3 (100%)	0 (0%)	0 (0%)		

	MDD with Psychotic Features	0 (0%)	0 (0%)	1 (100%)	0 (0%)		
	Schizoaffective disorder	0 (0%)	6 (100%)	0 (0%)	0 (0%)		
	Schizophreniform disorder	0 (0%)	0 (0%)	0 (0%)	7 (100%)		
	Schizophrenia	1 (14.3%)	3 (42.9%)	0 (0%)	3 (42.9%)		
	Substance induced psychosis	4 (80%)	1 (20%)	0 (0%)	0 (0%)		
Season	Autumn	1 (5.9%)	12 (70.6%)	0 (0%)	4 (23.5%)	32.554	0.000
	Spring	0 (0%)	1 (8.3%)	4 (33.3%)	7 (58.3%)		
	Summer	4 (40%)	6 (60%)	0 (0%)	0 (0%)		
	Winter	1 (6.7%)	5 (33.3%)	5 (33.3%)	4 (26.7%)		
Time of the day when the restraining happened	00:00-05:59	1 (16.7%)	4 (66.7%)	1 (16.7%)	0 (0%)	4.826	0.849
	06:00-11:59	1 (7.7%)	5 (38.5%)	3 (23.1%)	4 (30.8%)		
	12:00-17:59	1 (6.7%)	8 (53.3%)	2 (13.3%)	4 (26.7%)		
	18:00-23:59	3 (15%)	7 (35%)	3 (15%)	7 (35%)		
Reason of restraining	Aggression	2 (16.7%)	1 (8.3%)	5 (41.7%)	4 (33.3%)	23.824	0.068
	Agitation	0 (0%)	7 (100%)	0 (0%)	0 (0%)		
	Physical Aggression	2 (9.5%)	9 (42.9%)	2 (9.5%)	8 (38.1%)		
	Self-harm	1 (25%)	3 (75%)	0 (0%)	0 (0%)		
	Tried to abscond	0 (0%)	1 (100%)	0 (0%)	0 (0%)		
	Verbal Aggression	1 (11.1%)	3 (33.3%)	2 (22.2%)	3 (33.3%)		
Duration of restraining	Up to 30 mins	1 (12.5%)	4 (50%)	2 (25%)	1 (12.5%)	7.559	0.272
	31-90 mins	2 (8%)	15 (60%)	2 (8%)	6 (24%)		
	91 mins or more	3 (14.3%)	5 (23.8%)	5 (23.8%)	8 (38.1%)		

Discussion

The use of restraints in psychiatric inpatient units remains a complex and controversial aspect of mental health care [7-12]. Restraints are often employed to manage aggressive or harmful behaviors exhibited by patients, yet their implementation raises ethical concerns and necessitates a careful examination of contributing factors [8, 9]. This study focuses on the retrospective analysis of restraining episodes within the psychiatric inpatient unit of King Salman Armed Forces Hospital, Tabuk, KSA, over a 12-month period, aiming to elucidate patterns and factors associated with their use. The exploration of patient demographics, diagnoses, seasonal influences, and the length of stay provides a comprehensive understanding of the context in which restraints are employed.

Our study encompassed 54 restraining episodes involving 17 patients, presenting a nuanced picture of the circumstances surrounding the use of restraints in the psychiatric inpatient unit. The majority of patients were male (76.5%), aged between 17 to 29 years (58.8%), and diagnosed with Bipolar Mood Disorder (41.2%). Notably, a significant proportion of patients (88.2%) did not have substance-related conditions, shedding light on the prevalence and impact of such conditions in psychiatric settings.

One of the most striking findings was the significant association between substance-related conditions and the use of restraints ($\chi^2 = 26.724$, $p = 0.000$). Patients with substance-related issues were more likely to experience restraining episodes, indicating a complex interplay between substance use and psychiatric symptoms. This aligns with existing literature highlighting the heightened risk of aggression and agitation in individuals with substance use disorders (SUDs) [7, 10, 12]. The observed association emphasizes the need for tailored interventions and heightened vigilance in managing patients with co-occurring psychiatric and substance-related conditions.

Our findings underscored a significant relationship between specific psychiatric diagnoses and the use of restraints ($\chi^2 = 65.718$, $p = 0.000$). Notably, patients diagnosed with Bipolar Mood Disorder were more frequently subjected to restraints. This finding aligns with previous research associating bipolar disorder with increased risk of aggression and agitation during acute episodes [15, 16]. In contrast, the absence of restraints in patients diagnosed with Substance-Induced Psychosis warrants further investigation. Literature suggests that the manifestation of symptoms in substance-induced psychosis may differ, potentially influencing the decision to use restraints [17].

Seasonal patterns significantly influenced the occurrence of restraining episodes ($\chi^2 = 32.554$, $p = 0.000$). Notably, a higher proportion of restraints occurred during Autumn and Winter. While previous studies have explored the impact of seasonal changes on mental health, our findings suggest a novel association between seasons and the use of restraints in a psychiatric inpatient setting [18]. Seasonal affective disorder (SAD) or environmental factors could contribute to fluctuations in patient behavior, warranting further exploration [18, 19].

The study revealed a substantial association between the length of stay and the occurrence of restraining episodes ($\chi^2 = 26.724$, $p = 0.000$). Patients with substance-related conditions, particularly those with shorter lengths of stay, were more likely to experience restraints. This finding underscores the complexity of managing patients with dual diagnoses and the challenges posed by brief admissions. Existing literature highlights the need for targeted interventions and comprehensive care plans for patients with shorter lengths of stay [7, 12, 14, 17].

Our study aligns with existing literature, emphasizing the increased risk of restraint use in patients with substance-related conditions and specific psychiatric diagnoses [15-17]. However, the observed seasonal variations in restraint use add a novel dimension to the discourse, requiring further investigation to determine the specific factors contributing to this phenomenon.

Limitations and Implications

Several limitations must be considered, including the retrospective nature of the study and reliance on medical records. Additionally, the small sample size may limit the generalizability of the findings. Future

research should employ a prospective design, include a larger and more diverse sample, and incorporate qualitative data to provide a more comprehensive understanding of the contextual factors influencing restraint use.

Conclusion

In conclusion, this retrospective study provides valuable insights into the patterns and factors associated with the use of restraints in a psychiatric inpatient unit. The significant associations between substance-related conditions, specific diagnoses, seasonal variations, and the length of stay underscore the multifaceted nature of this phenomenon. Addressing the unique needs of patients with dual diagnoses and tailoring interventions based on seasonal influences may contribute to more effective and ethical management strategies within psychiatric inpatient settings.

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