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A 10-YEAR STUDY OF LENGTH OF STAY OF PSYCHIATRIC ADMISSIONS IN A TERTIARY CARE HOSPITAL IN RAWALPINDI

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ABSTRACT

OBJECTIVE

To measure the frequency of demographic, diagnostic variables and Length of Stay (LOS) in an inpatient psychiatric facility

DESIGN

Retrospective chart review

PLACE AND DURATION OF STUDY

Institute of Psychiatry, Benazir Bhutto Hospital, Rawalpindi, Pakistan from January 2007 to December 2016.

METHOD

The medical records of all psychiatric admissions spanning the 10-year period were reviewed for Length of Stay (LOS) of patients. A Length of Stay (LOS) greater than 10 days was considered as a cut-off point. A consecutive sampling technique was used, and the study included patient data from all age groups.

RESULTS

In this study involving 3,975 psychiatric inpatients, nearly 70% of the admissions were female, with depressive disorder being the most prevalent diagnosis. Over the decade, there was a notable reduction in the average length of hospital stay, decreasing from 13 to 9 days. A significant proportion (18.2%) of patients left against medical advice, with a higher percentage among females (19.3%) compared to males (15.5%). Patients were categorised into five age groups, and the highest admissions occurred among those aged 16 to 30 years (52.3%). The data also revealed fluctuations in the mean length of hospital stay over the years, ultimately averaging less than two weeks. Psychiatric diagnoses included a range of disorders, with depressive illness, schizophrenia, and bipolar affective disorder being the most common, while certain disorders like anorexia nervosa were less frequently encountered.

CONCLUSION

Over the past decade, there has been a significant reduction in the average length of hospital stays for psychiatric patients. This highlights the need for further research to improve psychiatric care in resource-limited regions.

KEYWORDS

Hospitals, Psychiatric; Inpatients; Length of Stay; Medical Records; Retrospective Studies.

INTRODUCTION

Mental health is an essential component of any comprehensive healthcare plan. In Pakistan, a country facing myriad of challenges in its healthcare system, the provision of psychiatric care faces significant inadequacies. Among the critical indicators of this deficit is the alarmingly low number of psychiatric beds per capita, of approximately 6.9 ratio of psychiatric inpatient beds to 10,000 population.[1] In countries like Pakistan, which fall under Lower and Middle Income, there is a dearth of mental health annual budget, with Pakistan spending about 0.4 per cent of the overall health budget on its mental health.[1]

The dynamics of length of stay at psychiatric hospitals are influenced by several factors, including limited mental health infrastructure, societal stigma, and economic constraints. Patients often face prolonged admissions due to inadequate outpatient support, lack of community-based services, and insufficient follow-up care.[2] Additionally, financial barriers and family burdens can delay discharge, exacerbating overcrowding and straining already limited resources.[3,4] These challenges highlight the urgent need for systemic improvements in mental health care and societal attitudes to ensure timely and effective treatment for patients.

The lack of comprehensive data on psychiatric admissions and factors affecting prolonged hospitalisations in Pakistan makes it difficult to effectively address mental health needs. One study done in Canada showed a mean length of stay for psychiatric in-patients to be as high as ninety-six days and for a general hospital in patients to be approximately twenty days, whereas it was seen to be eighteen in Italy and fifty-five in Belgium.[5] The state of existing mental health services in low-income countries has been characterised as inadequate, inequitable and inefficient.[6] Research from Ethiopia showed chronic mental health conditions such as Schizophrenia, Bipolar Disorder to be associated with longer hospital stays.[7,8] The need for current research into the Length of Stay (LOS) in psychiatric facilities is pressing, especially in countries classified as underdeveloped, where mental health often remains marginalised within the broader healthcare landscape. A study conducted in Pakistan showed that the increasing healthcare cost resulted in economic burden with higher length of hospital stays.[8] While the average hospital stay in most countries is less than 40 days, there is a significant difference between low-, middle-, and high-income countries because of resource availability.[9]

The need for current research into the Length of Stay (LOS) in psychiatric facilities is particularly pressing. Understanding the dynamics of LOS in psychiatric care is crucial for optimizing the allocation of limited resources and enhancing the quality of mental health services.[6] This study aimed to investigate the length of stay (LOS) related to the category of diagnosis in order to better understand psychiatric care resource use in tertiary care facilities.

METHOD

A ten-year retrospective chart review of patients admitted to the psychiatric facility of Rawalpindi Medical University, Benazir Bhutto Hospital Rawalpindi was conducted. The medical records of all admissions spanning the period from January 2007 to December 2016 were reviewed. Length of Stay (LOS) greater than 10 days was considered as a cut-off point for lengthier stay. A consecutive sampling technique was used for the study sample. The study included patient data from all age groups.

Data Collection Procedure

The study commenced after getting approval from the Ethical Committee of Benazir Bhutto Hospital, Rawalpindi, dated 17/11/22. We analysed the records from the inpatient data entry registers from 2007 to 2016. These data were entered in a specially designed Google form. Age, gender, diagnosis, length of stay (LOS), outcome of stay were entered in the form online. Names and detailed address were not included in analysis to keep confidentiality.

Data Analysis

Data were analysed using Statistical Package for the Social Sciences (SPSS) v 26. For continuous variables like Length of Stay (LOS) in days we calculated using mean and standard deviation, while frequency and percentage were calculated for categorical variables such as age groups, gender, outcome of stay and psychiatric diagnosis.

RESULTS

A sample of n=3975 patients was collected through records of inpatient data registers. Our study showed that a vast majority, comprising almost 70%, was of female patients admitted over a span of ten years and Depressive Disorder was overall the most frequent diagnosis amongst the admitted patients. The pattern showed that the length of hospital stay reduced from 13 days to 9 days over the course of these years. The patients in our study were divided into five groups according to age (Table 1 and Table 2).

Table 1
Frequency of Age Groups with Gender (n=3975).

Age Categories	Male	Female	Frequency	Sum with Missing/Other
up to 15 years	20 (1.7%)	112 (4.0%)	132 (3.3%)	133
16 to 30 years	620 (52.6%)	1449 (52.1%)	2069 (52.3%)	2077
31 to 45 years	354 (30.1%)	783 (28.2%)	1137 (28.7%)	1141
46 to 60 years	140 (11.9%)	342 (12.3%)	482 (12.2%)	483
61 and above	40 (3.4%)	77 (2.8%)	117 (2.9%)	117
Missing Data	4 (0.3%)	17 (0.6%)	21 (0.6%)	24
Total	**1178**	**2780**	**3958**	**3975**

Table 2
Frequency of Left Against Medical Advice (LAMA) with respect to Gender and Age.

Gender	Yes	No	Responses other than Yes/No	Total	Missing Data
Male	183 (15.5%)	994 (84.4%)	-	1177 (99.9%)	1 (0.1%)
Female	536 (19.3%)	2237 (80.5%)	6 (0.2%)	2779 (100%)	1 (0%)
Other than M/F	5 (37.5%)	9 (64.3%)	-	14 (100%)	-
Total	724 (18.2%)	3243 (81.6%)	6 (0.2%)	3973 (99.9%)	2 (0.1%)
Age Groups					
Up to 15 years	33 (24.8%)	99 (74.4%)	-	132 (99.2%)	1 (0.8%)
16 to 30 years	368 (17.7%)	1704 (82%)	5 (0.2%)	2077 (100%)	
31 to 45 years	232 (20.3%)	907 (79.5%)	1 (0.1%)	1140(99.9%)	1 (0.1%)
46 to 60 years	75 (15.5%)	408 (84.5%)	-	483 (100%)	
61 and above	13 (11.1%)	104 (88.9%)	-	117 (100%)	
Missing Age	3 (12.5%)	21 (87.5%)	-	24 (100%)	
Total	**724 (18.2%)**	**3243 (81.6%)**	**6 (0.2%)**	**3973 (99.9%)**	**2 (0.1%)**

Psychiatric diagnosis in the sample included Bipolar Affective disorder, Schizophrenia, Mental and Behavioural disturbances due to Cannabis, Intellectual Disability, Borderline Personality Disorder, Depressive Illness, Other Substance Abuse, Epilepsy, Anorexia Nervosa, Dissociative Disorder and others (Table 3 and Table 4).

Table 3
Diagnosis Based on Gender Categories (n=3975).

Diagnosis	Male	Female	Others	Total
Depressive Illness	389 (33%)	1417 (51%)	4 (28.6%)	1812 (45.6%)
Bipolar Affective Disorder	198 (16.8%)	438 (15.8%)	2 (14.3%)	638 (16%)
Schizophrenia	199 (16.9%)	321 (11.5%)		520 (13.1%)
Dissociative Disorder	55 (4.7%)	232 (8.3%)	5 (35.7%)	292 (7.3%)
Mental and Behavioural Disturbance Due to Cannabis	96 (8.2%)	108 (3.9%)	-	204 (5.1%)
Borderline Personality Disorder	12 (1%)	90 (3.2%)	-	102 (2.6%)
Other Drug Abuse	74 (6.3%)	12 (0.4%)	-	86 (2.2%)
Intellectual Disability	25 (2.1%)	46 (1.7%)	-	71 (1.8%)
Epilepsy	23 (2%)	29 (1%)	-	52 (1.3%)
Anorexia Nervosa	1 (0.1%)	2 (0.1%)	-	3 (0.1%)
Others	70 (6.0%)	46 (1.5%)	1 (0.1%)	118 (3.1%)
Total	1142 (96.9%)	2741 (98.6%)	13 (92.9%)	3898 (98.1%)
Missing Data	36 (3.1%)	39 (1.4%)	1 (7.1%)	77 (1.9%)

Table 4
Diagnosis Based on Age Categories (n=3975).

Diganosis	up to 15 years	16 to 30 years	31 to 45 years	46 to 60 years	61 and above	Total
Depressive Illness	54 (40.6%)	836 (40.3%)	538 (47.2%)	309 (64%)	64 (54.7%)	1812 (45.6%)
Bipolar Affective Disorder	9 (6.8%)	327 (15.8%)	214 (18.8%)	73 (15.2%)	10 (8.6%)	638 (16%)
Schizophrenia	4 (3%)	323 (15.6%)	156 (13.7%)	27 (5.6%)	7 (6%)	520 (13.1%)
Dissociative Disorder	33 (24.8%)	204 (9.8%)	44 (3.9%)	6 (1.2%)	5 (4.3%)	292 (7.3%)
Mental and Behavioural Disturbance due to Cannabis	6 (4.5%)	107 (5.2%)	45 (3.9%)	29 (6.0%)	13 (11.1%)	204 (5.1%)
Borderline Personality Disorder	-	60 (2.9%)	38 (3.3%)	3 (0.6%)	1 (0.9%)	102 (2.6%)
Other Drug Abuse	-	50 (2.4%)	24 (2.1%)	9 (1.9%)	3 (2.6%)	86 (2.2%)
Intellectual Disability	7 (5.3%)	42 (2%)	18 (1.6%)	2 (0.4%)	2 (1.7%)	71 (1.8%)
Epilepsy	8 (6%)	31 (1.5%)	10 (0.9%)	3 (0.6%)	-	52 (1.3%)
Anorexia Nervosa			2 (0.2%)	1 (0.2%)	-	3 (0.1%)
Others	6 (4.5%)	59 (2.8%)	30 (2.6%)	16 (3.3%)	8 (6.9%)	118 (3.1%)
Total	127 (95.5%)	2039 (98.2%)	1118 (98%)	478 (99%)	113 (96.7%)	3898 (98.1%)
Missing Data	6 (4.5%)	38 (1.8%)	23 (2%)	5 (1%)	4 (3.3%)	77 (1.9%)

In the ten-year period of hospital admitted inpatients in psychiatry revealed that the LOS (length of hospital stay) was less than two weeks (Table 5).

Table 5
Mean and Standard Deviation of Hospital Stay in Days versus Years.

Year	Hospital Stay (Days) Mean [std. Dev]
2007	13.95 [10.186]
2008	12.72 [18.677]
2009	11.15 [8.342]
2010	13.59 [10.875]
2011	11.8 [10.887]
2012	8.36 [8.156]
2013	9.31 [8.207]
2014	9.52 [8.298]
2015	9.31 [9.201]
2016	6.21 [7.377]

DISCUSSION

Serious mental illness (SMI), which includes a variety of chronic conditions, accounts for approximately seven per cent of the total inpatients' stay, according to statistics from NHS England.[10] The duration of psychiatric hospital stays, known as Length of Stay (LOS), is a multifaceted and critical aspect of mental health care. Several studies from diverse healthcare settings shed light on the various factors associated with LOS and its implications for individuals with serious mental illnesses (SMI). Evidence accounts for chronic mental health conditions having longer length of stay, such as bipolar and schizophrenia, which is also consistent with our study.[11] Results of an Ethiopian study reveal that the most common discharge diagnoses were schizophrenia and other psychotic disorders (27.6%), and bipolar disorder (23.4%).[7]

As per expectations, depressive illness was the most frequent diagnosis among inpatients (45.6%), since this is also the greatest contributor to DALYs (disability-adjusted life years) in Pakistan.[12] In our sample, females made up the majority of inpatients (69.9%). This is in alignment with not only with larger data from Pakistan but also with worldwide observations, that show mental disorders, especially depressive illness, to be more prevalent in females as compared to males.[12]

Over the years, various studies prove that there has been a gradual decline in total length of stay in psychiatric inpatients, this is also consistent with our study, where the study done over span of a decade showed that average length of stay decreased from 13.9 days in 2007 to 6.21 days in 2016.[13] One of the systematic reviews from the United States done on inpatient psychiatric stays revealed that chronic mental health conditions such as schizophrenia and female gender account for longer LOS. It also showed that discharge against medical advice was considerably associated with shorter LOS, which is also consistent with our study, where the LOS reduced significantly in patients who Left Against Medical Advice (LAMA).[13]

Deinstitutionalisation of mental health-care has revolutionised psychiatric care in many Western countries, emphasising community-based services over long-term institutional admissions. Acute inpatient psychiatric care, which now accounts for a small part of total mental health care in the western world, is primarily concerned with stabilisation, safety, and speedy discharge, which results in lesser economic burdens.[13,14] However, in LMICs, the inpatient psychiatric facilities are still facing significant difficulties in segregation of acute inpatient psychiatric setups from the ones needing longer LOS for stabilised chronic psychiatric patients. In Pakistan, there is a lack of community-based mental health facilities, which is a situation common to its neighbouring country, India. LMICs not only lack in community mental health services, but also in research to evaluate the reforms and way forward.[15-18]

Understanding the factors influencing Length of Stay (LOS) in psychiatric care is paramount for optimising mental health services and ensuring effective care delivery for individuals with mental illness. This study's strengths lie in its large sample size and comprehensive ten-year timeframe, providing robust and longitudinal insights. Detailed diagnosis data further enriches understanding of psychiatric conditions. However, geographic restriction may affect generalisability. Another limitation is that our study does not seek any associations between the different psychiatric diagnoses and LOS. Nevertheless, the study's impacts are significant; it stimulates further research into gender disparities and LOS reduction, informs clinical enhancements, and advocates for improved community-based mental health services, especially in low- and middle-income countries (LMICs).

CONCLUSION

This is the first study from Pakistan which highlights the length of stay (LOS) along with various psychiatric diagnoses in the inpatient psychiatric facility spanning over the duration of ten years. This study indicates a reduction in average hospital stays from 13 to 9 days, with a substantial number of female patients (70%) and a prevalent diagnosis of depressive disorder. Leaving against medical advice was notable, particularly among females. Admissions were highest among those aged 16 to 30. Common diagnoses included depressive illness, schizophrenia, and bipolar affective disorder. These findings highlight the evolving psychiatric care landscape in Pakistan, necessitating further research to optimise services in underdeveloped regions and address the multifactorial nature of length of stay in psychiatric settings.

CONFLICT OF INTEREST

Author(s) declare no conflict of interest.

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DISCLOSURE

This research is not part of any thesis, dissertation, pilot project, or ongoing study.

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