

A Study of Factors Associated with Readmissions At A government Psychiatric Hospital

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Abstract Background: Most of the psychiatric illnesses have a chronic relapsing course. Readmission rate for discharged patients is estimated to be approximately 40-50% within a year of their discharge from the hospital. Readmission has a major role in reducing the quality of life and increasing the years of lost life. Several factors contribute towards readmissions. Understanding these factors will decrease the number of readmissions and cost to the patient and the hospital.

Aims and objectives: To study the factors associated with readmissions at Government Hospital for Mental care, Visakhapatnam. To study the association between the socio-demographic correlates illness & treatment variables and the number of readmissions.

Materials and methods: The study was conducted in the Government Hospital for Mental care, Visakhapatnam, a 300 beds exclusive psychiatric tertiary care referral center. It caters to the urban and rural population in and around the city of Visakhapatnam and the neighbouring states. The study sample was constituted of 610 patients who fulfilled the criterion of "readmission" - defined as admission of patient at government hospital for mental care, Visakhapatnam, who had at least one previous hospitalization at the same hospital. After counseling and obtaining consent from the patients and their attendants, a specially developed proforma for evaluation of factors associated with re admissions was administered. Data included socio-demographic, illness, and treatment variables.

Statistical analysis: Data was analyzed using SPSS trial version 13.0 for windows. Strength of associations was tested Pearson's Chi square test for the different variables and the multiple readmissions. Logistic regression analysis was done to determine the predictors of readmissions. The readmissions were grouped into two categories based on the number of readmissions i.e., the first group consisting of patients with less than three readmissions and the second group consisting of patients with three or more readmissions, based on previous studies.

Results & conclusion: Younger age at first admission (<35 years), male gender, married status, low economic status, and living together with family were associated with multiple readmissions among socio-demographic factors. Mood disorders, schizophrenia, and substance abuse among illness variables, Treatment non adherence was associated with multiple readmissions among treatment variables.

I. Introduction

During the last three decades deinstitutionalization of Mental Health Services led to faster transition from psychiatric hospitals to the community. The current emphasis in mental health is on brief hospitalization and providing community based services.² However a significant number of patients have had serious problems after being discharged from hospitals, which resulted in an increase in the number of psychiatric emergency referrals and readmissions.³ Estimated readmission rates for discharged patients is 40-50% within a year of their discharge from hospital¹. Readmission of in patients has been one of the most important problems in the field of psychiatry for the last decades^{4,5}. The problem has a major role in reducing the quality of life and increasing the years of lost life⁶. About two thirds of patients admitted to psychiatric services will probably be readmitted within a year⁷. Psychiatric readmissions are a consequence of a complex combination of factors that go beyond the severity of the psychiatric disease and include availability of services, quality of care and family or social support. Several studies have identified strong predictors of readmissions, such as poor treatment adherence^{8,9,10,11,12}, low level of education^{10,13}, deficient follow up after

hospital discharge¹³, involuntary admission^{14,15}, lack of social or family support^{10,16}, diagnosis of schizophrenia¹⁷, substance use disorders^{9,18}, stigma¹⁹, duration of length of index admission¹.

Readmissions are likely to reduce the probability of maintaining employment, lead to disturbance in family expectations and relationships. A better understanding of the factors related to psychiatric readmissions helps in better management and early interventions. Such knowledge can help the patients and the various health care service resources after discharge from hospital and to take necessary steps to reduce readmission.

Aims and objectives

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II. Materials And Methods

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Statistical analysis

Data was analysed using SPSS trial version 13.0 for windows. Strength of associations was tested Pearson's Chi square test for the different variables and the multiple readmissions. Logistic regression analysis was done to determine the predictors of readmissions. The readmissions were grouped into two categories based on the number of readmissions i.e.,the first group consisting of patients with less than three readmissions and the second group consisting of patients with three or more readmissions, based on previous studies.

III. Results:

Table 1 Socio Demographic Variables

VARIABLE	FREQUENCY	PERCENTAGE
1. Age at the time of admission		
15-25 yrs	219	35.9
26-35yrs	255	41.8
36-45yrs	117	19.2
46-55yrs	19	3.1
2. Sex		
Male	420	68.9
Female	190	31.1
3. Distance from hospital		
<100kms	326	53.4
>100kms	284	46.6
4. Religion		
Hindu	578	94.8
Christian	13	2.1
Muslim	19	3.1
5. Marital status		
Married	343	56.2
Unmarried	165	27.0

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Widowed	6	1.0
Separated	96	15.7
6. Economic Status		
Low	585	95.9
Middle	25	4.1
7. Education		
Primary	257	42.1
Secondary	208	34.1
Intermediate	84	13.8
Graduation	54	8.9
Post graduation	7	1.1
8. Living arrangement		
Family Status		
Joint family	277	45.4

Table 2 Illness Variables

VARIABLE	FREQUENCY	PERCENTAGE
1. Provisional diagnosis		
Substance use disorders	107	17.5
Schizophrenia	209	34.3
Mood disorder	213	34.9
Schizoaffective disorder	19	3.1
Organic disorder, Epilepsy	18	3
Others	24	3.9
Unspecified non organic psychosis	20	3.3
2. Duration of previous hospitalisation		
< than 10 days	60	9.8
11-20 days	233	38.2
21-30 days	136	22.3
>30 days	181	29.7
3. No. of previous discharges from hospital at request		
Once	90	14.8

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Twice	20	3.3
Nil	500	81.9
4. Substance abuse		
Alcohol	106	17.4
Tobacco	44	7.2
Alcohol & tobacco smoking	68	11.1
Alcohol, tobacco & cannabis	13	2.1
Alcohol, tobacco & others	7	1.1
Alcohol & others	6	1
None	366	60
5. Family history of Psychiatric illness		
First degree	87	14.3
Second degree	33	5.4
No Family history	490	80.3
6. Mental Health Status at Last Discharge		
Fully recovered	551	90.3
Partially recovered	59	9.7
No change	0	0
7. History of Suicide attempt leading to Acute Psychiatric re-admission		
	26	4.3

Table 3 Treatment Variables

1. Treatment Adherence		
Adherence	78	12.8
Non Adherence	532	87.2
2. Type of Discharge at last hospitalisation		
Planned	544	89.2
Unplanned	66	10.8
3. Number of Re-admissions		
<3	343	56.2
3 or more	267	43.8

**Table 4 Association Between Variables And No Of Admissions In The Two Groups
(<3 Admissions & 3 Or More Admissions)**

VARIABLE	GROUP 1	GROUP 2	P VALUE
1. Age at first admission			
35 years & above	239	235	0.000(<0.05)
36 years & above	104	32	
2. Sex distribution			
Male	232	188	0.463(<0.05)
Female	111	79	
3. Distance from the hospital			
Less than 100kms	181	145	0.706(>0.05)
More than 10kms	162	122	
4. Religion			
Hindu	324	254	
Christian	7	6	0.816(>0.05)
Muslim	12	7	
5. Marital Status			
Married	206	137	
Unmarried	98	67	0.00(<0.05)
Widowed	0	6	
Separated	39	57	
6. Economic status	318	267	0.000(<0.05)
Low	25	0	
7. Education			
Primary	116	141	
Secondary	143	65	

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Intermediate	51	33	0.000(<0.05)
Graduation	26	28	
Post graduation	7	0	
8. Living arrangement			
With Family	324	254	0.713(>0.05)
Without Family	19	13	
9. Provisional diagnosis			
Substance use disorders	47	60	
Schizophrenia	138	71	
Mood disorders (affective)	96	117	
Schizoaffective disorders	19	0	0.000(<0.05)
Organic disorders & Epilepsy	12	6	
Others	18	6	
Unspecified non organic psychosis	13	7	
10. Mental health at last discharge			
Fully recovered	317	234	
Partially recovered	26	33	0.048(<0.05)
No change	0	0	
11. Substance abuse			
Alcohol	41	65	
Tobacco smoking	18	26	

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Alcohol & tobacco smoking	43	25	0.000(<0.05)
Alcohol, tobacco & cannabis	6	7	
Alcohol, tobacco & others	0	7	
Alcohol & others	0	6	
None	235	131	
12. Family history of Psychiatric illness			
Present	75	45	0.112(>0.05)
Absent	268	222	
13. Treatment Adherence			
Adherent	52	26	0.001(<0.05)
Non Adherent	291	241	
14. Use of depot antipsychotics			
Yes	0	12	0.000(<0.05)
No	343	255	
15. History of discharge due to serious comorbid medical illness			
Yes	0	14	0.000(<0.05)
No	343	253	
16. Mode of last discharge			

Planned	317	227	0.004(<0.05)
Unplanned	26	40	
17. Type of admission			
Voluntary	335	267	0.12(<0.05)
Involuntary	0	8	
18. History of suicide leading to psychiatric illness			
Yes	0	26	0.000(<0.05)
No	343	267	

Table 5 Predictors Of Readmission After Logistic Regression Analysis Of The Factors Associated With Re Admission

VARIABLE	ADJUSTED B VALUE	STANDARD ERROR	P VALUE
Age at first admission	0.006	0.010	0.006
Number of previous episodes	0.004	0.052	0.002
Status at previous discharge	0.089	0.330	0.006
Treatment adherence	0.162	0.252	0.034

IV. Discussion

To compare the patients with a high number of readmissions and those with a low number, we used a conservative method basing on previous studies²⁰ on readmission, that included a large sample. The total sample was divided into groups, first group consisted of patients with less than three readmissions and the second group of patients with three or more readmissions. Results from our study confirm previous findings of a significant association between the age at first admission,²¹ and education of the patient²¹.

Multiple readmissions are associated with less than 35 years of age at first admission, low economic status and schooling up to primary school. Two thirds of the sample constitutes males which is supported by other studies^{1,21}.

In our study the distance of living from hospital has no significant association with multiple readmissions. This finding did not correlate with other studies "1. Unlike in the western studies the majority of our patients were married and were living with the family²². The predominance of patients with schizophrenia and affective disorders in the group with multiple readmissions is supported by other studies. There was a significant association between substance abuse and multiple readmissions. Family history of psychiatric illness and, history of suicide attempts have no significant association with multiple admissions. Suicidal patients are less likely to be readmitted in psychiatric hospital a finding supported in the literature.

We found a strong association between non adherence to treatment and multiple psychiatric readmissions as reported in the literature²². The most common reason for treatment non-compliance was patient refusing to take medicine and non-affordability of medicine. Majority of readmitted patients were not using depot anti-psychotic medication.

V. Conclusion

This study is an explorative study of readmissions and needs further detailed exploration of each factor related to psychiatric readmission.

Limitations

1. The conservative method of grouping patients into two categories based the number of previous hospitalisation may have reduced the strength of associations.
2. Details of the medications used by the patients prior to readmission were not included in the study, which would have influenced the treatment adherence and in turn, readmission.
3. Seasonal variations were not included as the study period was six months.

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