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A Study of Pattern of Readmissions to Acute Psychiatric Unit A 9 Year Retrospective Study

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Abstract: *The aim of the study was to identify rates of readmission and factors associated with readmission to acute psychiatric unit.*

Methods: *First admissions (n=1276) to acute psychiatric unit in Government Hospital for mental care, Visakhapatnam in 2005 were identified and followed up retrospectively for the 9 year period 2005-2014.*

Results: *Thirty percent (387/1276) of first admission in 2005 had one or more readmissions during the study period. 2.7% had 4 or more readmissions in the nine year period. Younger age and diagnosis of affective disorders were identified as predictive factors for readmissions.*

Conclusion: *Our study showed small percentage of patients required multiple admissions. Younger patients and patients with affective disorders require intensive follow up in the community after discharge to prevent readmissions. We advocate provision of psycho education to both patients and their families.*

Key words: *Readmissions, Mental disorders, Hospitalisation, Psychiatric hospital.*

I. Introduction

Deinstitutionalisation of psychiatric patients aimed at community integration resulted in increased number of readmissions in psychiatric hospitals[1,2]. Readmissions are not only disruptive to the patient but also add tremendous burden to family and increase the cost of care to the healthcare providers [3]. Readmissions constitute significant percentage of total psychiatric hospital admissions[4].

Readmission rate has become one of the outcome indicators used to assess quality of psychiatric services. It is important to note despite optimal medication and psycho education, people with schizophrenia still relapse [5,6]. So there is no generalised consensus in using readmission rate as reliable parameter for measuring the quality of care[7,8]. However readmission statistics have methodological advantage as they are easy to obtain, highly reliable and easily quantifiable[9].

A number of studies were done to identify predictive factors contributing to readmissions. Studies reported male[1,4,10], younger age group, unemployed, living alone associated with increased risk of rehospitalisation[1,10]. Primary diagnosis of schizophrenia[1,10,11], affective disorders[9,12,13,14] and personality disorders are also identified as predictive factors of readmission. A US study found that length of hospital stay less than 10 days increases the risk of readmission[15]. In contrast, other studies found readmissions strongly associated with longer length of hospital stay[3,5,10]. According to one Canadian study the number of previous admissions was the only variable that consistently predicted readmissions[16].

Multiple readmissions could be the result of interactions of various factors relating to illness, co morbidities, socio- economical status and service provision. Accurately identifying all the factors contributing to the pattern of readmissions may be difficult but still an important tool in planning mental health services. By allowing for early and more appropriate identification of those at risk of readmission, thus enabling better planning for services including improved discharge plan and follow up[7].

The purpose of this study was to establish the rates of re admissions and factors associated with readmissions to acute psychiatric unit.

II. Methods

Study was conducted in the Government Hospital for mental care, Visakhapatnam which is a 300 bedded exclusive psychiatric hospital.

Study sample included all patients who were admitted for the first time during the period between 1st Jan 2005 to 31st Dec 2005 and were aged 18 yrs and above. Cases were identified from Admission Register and the sample comprised of 1276 patients. Case records were assessed retrospectively for the following nine year period until Dec 2014.

Data collected retrospectively included socio demographic details such as age, gender, marital status, years of education, occupation, socio economical status, distance from the hospital and clinical details such as

diagnosis, date of admission, date of discharge, number of readmissions, duration of hospital stay. For the purpose of study, diagnoses are categorised into four groups including schizophrenia, affective disorders, alcohol and substance use disorders and other disorders. Other disorders included acute and transient psychosis, epilepsy with psychosis, organic psychosis, mental retardation and personality disorders.

Rates of readmissions were calculated. Cases were categorised in terms of single versus readmissions and compared to determine those variables that may be associated with readmissions. Patients who were admitted to this hospital for the first time regardless of previous admissions outside the hospital were regarded as first admissions. Patients who are readmitted were compared with single admission group. Statistical analysis of the groups was carried out by using chi square test. Data was analysed using SPSS software.

III. Results

Socio demographic and clinical characteristics of the sample:

Total number of 1276 patients who were aged 18 yrs and above were admitted between 1st Jan to 31st Dec 2005. Sixty five percent (n=830) of first admissions in 2005 were males. Sixty two percent (n=791) were aged 25-44 yrs. 70% (n=898) were married and 38% (n=490) were manual/agricultural labourers and 36.6% (n=467) were unemployed. Forty eight percent had a primary diagnosis of schizophrenia (n= 610). And 26.8% (n=342) had the diagnosis of affective disorders.

Table 1 Comparison of single admissions with readmissions on socio demographic and clinical variables

Variables		Single admissions N (%)	Readmissions N (%)	Chi square value	df	P
Gender	Male Female	578 (65) 311 (35)	252 (65.1) 135 (34.9)	.001	1	0.973
Age at first admission	18-24 25-44 45-64	155 (17.4) 547 (61.5) 187 (21.1)	89 (23.0) 244 (63.0) 54 (14.0)	11.621	2	0.003
Marital status	Single Married Others	216 (24.3) 632 (71.1) 41 (4.6)	103 (26.4) 266 (68.7) 18 (4.9)	.793	2	0.673
Years of education	Illiterate 1-5 6-12 >13 Unknown	387 (43.5) 61 (6.9) 313 (35.2) 105 (11.8) 23 (2.6)	125 (32.3) 28 (7.2) 167 (43.2) 62 (16.0) 5 (1.3)	16.574	3	0.001
Occupation	Manual/agricultural Manual skilled Professional Student Unemployed	350 (39.4) 128 (14.4) 60 (6.7) 25 (2.8) 326 (36.7)	140 (36.2) 59 (15.2) 34 (8.8) 13 (3.4) 141 (36.4)	2.641	4	0.620
Socioeconomic status	Low Middle High	768 (86.4) 117 (13.2) 4 (0.4)	330 (85.3) 56 (14.5) 1 (0.2)	.379	1	.538
Distance to hospital	>150 KM 151-300 KM >300 KM	473 (53.2) 251 (28.2) 165 (18.6)	210 (54.3) 108 (27.9) 69 (17.8)	.145	2	0.930
Diagnostic criteria	Affective disorders Alcohol/substance use Schizophrenia Other disorders	217 (24.4) 123 (13.8) 437 (49.2) 112 (12.6)	125 (32.3) 54 (14.0) 173 (44.7) 35 (9.0)	10.341	3	0.016
Duration of stay at 1st admission	<20 days 21-40 days 41-60 days >60 days	299 (33.6) 371 (41.7) 133 (15.0) 86 (9.7)	106 (27.4) 181 (46.8) 57 (14.7) 43 (11.1)	5.45	3	0.141

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Table 1 show the characteristics of those who had no re admissions versus those who were readmitted during the study period. Younger patients aged 18-24 yrs (p= 0.003) and those who had 6-12 yrs of education (p= 0.001) at the time of first admission were more likely to be readmitted. Diagnosis of Affective disorders significantly associated with readmissions (p = .016). For the remaining socio demographic and clinical variables, no significant differences were found between groups.

Rate of readmissions:

Thirty percent (387/1276) of the first admissions in 2005 had one or more readmissions during the study period. 18% (n=230) had one readmission, 9.6% (n=123) had 2 to 3 readmissions and 2.7% (n=34) had 4 or more readmissions.

IV. Discussion

The reported rates of readmission vary considerably in the literature between 20% to 80%[9,12,3,13,22]. Methodological differences account for such wide variation. In this study 30% (387/1276) of first admissions in 2005 had one or more readmissions during nine year study period. 18% (230/1276) had one readmission, 9.6% (123/1276) had 2 or 3 readmissions and 2.7% (34/1276) had 4 or more readmissions.

Seventy percent (n=889) of the first admissions had no further readmissions during the study period of nine years. 2.7% (n=34) had 4 or more readmissions during the study period, which is less than the rate reported by the other studies [6,13]. Most of our patients were married (70.4%) contrary to the findings of other studies[1,10] and they are discharged back to their families. In India psychiatric community services are limited or mostly unavailable. Care in the community is mostly provided by the family. A study conducted in Chandigarh on first contact schizophrenic patients as part of WHO determinants of outcome project suggested better outcome of Indian sample from the west is partly attributable to tolerance and acceptance by family members[17]. Other studies also highlighted strong role of family support in preventing psychiatric readmissions[20]. Expressed emotions in the family are not assessed in this study which we propose to include in our future project. Current study did not have access to the data on outpatient clinic follow up. So it is not known whether the group without further readmissions remained in contact with the psychiatric services during the study period. Other factors like admissions to private psychiatric units and moving away from the region should also be considered.

Our study found that patients who had readmissions were significantly younger than who had single admission which is consistent with general consensus[1,4,10,11]. Literature shows earlier age of onset is associated with more severe psychopathology, course and poor outcomes. Hence they may require more frequent admissions. Findings of the present study show that gender is not related to readmissions. This is in contrast to other studies[1,4,10] which found that male gender predict readmissions. Variables such as socio-economical status and occupation did not show any relationship with recurrence of admissions. Many studies have shown .that recurrence is more related to characteristics of patient's family than patient's own social class. Family environment, level of expressed emotions, burden of coping with mentally ill family member in association with inadequate aftercare services are linked to recurrence[5,19].

Psychiatric diagnosis is one of the important factors in determining the readmissions. According to present study diagnosis of affective disorders significantly associated with readmissions. This result is comparable with other studies[9,12,13,14]. Nature and course of affective disorders which are characterised by multiple relapses and recurrences as well as significant inter episode psychopathology may require frequent admissions[20].

However, diagnosis of substance use was associated with high rate of readmissions in previous studies[1,7,10] but not replicated in this study. Other variables like distance from hospital and length of hospital stay during first admission did not show statistically significant association with readmissions.

Limitations:

- Retrospective design of the study.
- Lack of information on severity of illness, associated co-morbidities, adherence to treatment and outpatient follow up.
- Results of this study may not be generalised as the study is done in one state run hospital and did not include patients admitted to private hospitals who may have different socio demographical and clinical characteristics.

V. Conclusions

Findings of our study suggest younger patients and patients with affective disorders need intensive treatment programme and close follow up after discharge in an attempt to reduce readmissions. This may include psycho education for both patients and their families. There is need for the institution to improve its record keeping procedures by integrating outpatient and inpatient case records so that complete medical information is available in one place. This would facilitate in making necessary policy formulations which in turn enable better service provision to the patient.

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