

Medical Leave Granted to Psychiatric Inpatients—A One-year Retrospective Review

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Abstract

Introduction: Of the 676 patients warded in 1998 at the National University Hospital (NUH) Department of Psychological Medicine, over a third ($n = 268$) required certification of absence from work. Duration of inpatient stay and immediate post-discharge medical leave were examined for this group. These durations were correlated against the patients' diagnoses and their demographic variables. The mental health morbidity of teachers was specifically studied. **Materials and Methods:** In this retrospective study, we used medical certificate counterfoils to determine the lengths of admission and post-discharge medical leave duration. ANOVA and Kruskal-Wallis tests of the SPSS computer package were used for statistical analysis. **Results:** The sex and marital status of these patients did not affect either duration significantly. However, those 45 years and older were granted longer outpatient medical leave. Patients diagnosed with mood and psychotic disorders required longer inpatient stay and were granted longer outpatient medical leave, as compared with other diagnostic groups. It was found that the teachers admitted were largely 45 years and older, had a diagnosis of depression and required extended periods of outpatient medical leave compared to other occupational groups. **Conclusions:** The mean number of days of inpatient stay and outpatient medical leave may serve as a helpful guideline of current practice. As introduced in this paper, the use of medical certificate counterfoils is a simple yet effective way of measuring days off-work. With the inclusion of those psychiatric patients not working and the medical leave granted long after discharge, calculations of the economic costs of specific mental disorders to Singapore can then be attempted.

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Key words: Economic costs, Inpatient stay, Mental illness, Outpatient medical leave, Teachers

Introduction

The Department of Psychological Medicine, National University Hospital (NUH) has a 26-bedded inpatient unit. This study retrospectively examines the medical leave granted to all admitted patients over a one-year period in 1998. It is the first local study of this type done on such a large pool of psychiatric patients. There is also a dearth of similar data on non-psychiatric patients in the local context as well. Indeed, measurements of the economic costs of mental illness as a whole in the international literature are not frequently reported. Most concentrate only on either schizophrenia^{1,2} or depression.^{3,4} This study, however, cuts across different diagnostic categories. It attempts to correlate the duration of medical leave with a wide range of psychiatric disorders and various demographic variables of the patients. Significant findings on the mental health morbidity of teachers as a specific occupational group are also highlighted.

At present, data on psychiatric inpatient stay are being gathered for potential implementation of CASEMIX. Future large-scale studies may employ the same, simple methodology that we have used in our study, i.e. the use of medical certificate counterfoils to count the number of days off work. These data may be used to calculate the economic costs of mental illness in a developing country like Singapore.

Aims

The chief aims of the study were:

- a) to profile demographically, those patients admitted to the ward who required medical certification of admission, with or without subsequent outpatient medical leave;
- b) to investigate whether diagnosis, occupation or other demographic variables affected the length of hospitalisation or subsequent medical leave granted;
- c) to determine the mental health morbidity of teachers as a specific occupational group.

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Materials and Methods

The period of study was from 1 January 1998 to 31 December 1998. Data such as principal diagnosis and demographic details of age, sex, marital status and occupation were recorded from case-notes and medical certificate counterfoils. If an individual was admitted more than once, the inpatient stay duration was the sum of all the admission lengths. Similarly, the outpatient medical leave and total medical leave durations for these multi-admission patients were also added up. In none of those 31 patients with more than one admission did the primary diagnosis change between admissions.

In this study, we divided the diagnoses into 7 broad categories, based on the International Classification of Diseases 10th version (ICD-10):

- 1) depressive disorders,
- 2) mania and bipolar affective disorders,
- 3) schizophrenia,
- 4) other psychotic and delusional disorders,
- 5) adjustment and acute stress disorders,
- 6) mental and behavioural disorders due to psychoactive substance use, and
- 7) other miscellaneous psychiatric conditions.

With regard to occupation, patients were grouped according to the subdivisions in the last Population Census.⁵ In addition, categories were created for students and national servicemen. Based on preliminary findings, teachers were also specifically coded for, as they constituted a significant group with depression. Data on the length of medical leave covering the periods of inpatient stay and the immediate post-discharge medical leave were analysed using the appropriate statistical tests. As the distribution of all three measures of inpatient stay, outpatient medical leave and total medical leave durations were clearly not Gaussian (Fig. 1), non-parametric tests were used. The Kruskal-Wallis and one-way ANOVA tests were employed to determine whether the observed differences in the duration of medical leave between different occupational groups and diagnostic categories were statistically significant or not.

Results

There were 676 patients admitted to the ward in 1998, with 39.6% of these admitted cases requiring medical certificates to be issued. This was the study population ($n = 268$). Males accounted for 45.9% ($n = 123$) and females accounted for 54.1% ($n = 145$) of those granted medical leave. Where marital status was concerned, 49.3% were single ($n = 132$), 41.4% were married ($n = 111$) and 1.1% were divorced ($n = 3$). The age range was from 11 to 66 years with a mean of 33.0 years. Thirty-one patients in our sample required readmission during the year of study

Note: The box represents the interquartile range which contains the 50% of values. The whiskers are lines that extend from the box to the highest and lowest values excluding the outliers. The dark bold line across the box indicates the median.

Fig. 1. Boxplot of inpatient stay, outpatient medical leave and total medical leave durations.

and the number of admissions of the study population is shown in Table I.

In this paper, we examined the durations of medical leave granted in terms of the inpatient stay duration, immediate post-discharge medical leave duration, and their total, the total medical leave duration.

The frequency distribution of patients according to occupation is shown in Table II.

TABLE I: FREQUENCY OF ADMISSIONS IN THE STUDY POPULATION

	No. of admissions					Total
	1	2	3	4	≥5	
No. of patients	237	23	6	2	0	268
% of patients	88.4	8.6	2.2	0.7	0	100

TABLE II: FREQUENCY OF OCCUPATIONAL GROUPS

Occupational group	No. of patients	% of patients
Legislators/Professionals/ Semi-professionals (less teachers)	74	27.6
Teachers	22	8.2
Clerical/Service/Sales workers	65	24.3
Skilled/Semi- and unskilled workers	41	15.3
Students	43	16.0
Full-time national servicemen	9	3.4
Unknown or other occupation	14	5.2
Total	268	100.0

TABLE III: FREQUENCY OF DIAGNOSES AND LENGTH OF INPATIENT STAY, OUTPATIENT MEDICAL LEAVE AND TOTAL MEDICAL LEAVE DURATIONS BY DIAGNOSTIC GROUP (KRUSKAL-WALLIS TEST)

Diagnoses	No. of patients (%)	Inpatient stay duration	Outpatient medical leave duration	Total medical leave duration
		Mean (days)	Mean (days)	Mean (days)
Depressive disorders	97 (36.2)	10.3	6.8	17.1
Mania and bipolar affective disorders	27 (10.1)	13.8	6.0	19.8
Schizophrenia	30 (11.2)	14.7	6.8	21.5
Other psychoses and delusional disorders	25 (9.3)	10.4	8.6	19.0
Adjustment and stress disorders	43 (16.0)	6.4	3.4	9.9
Mental and behavioural disorders due to psychoactive substance use	19 (7.1)	8.5	5.1	13.6
Others	27 (10.1)	13.9	4.6	18.5
Total	268 (100)	10.8	6.0	16.8
Chi square		39.77	19.61	35.65
Degrees of freedom		6	6	6
Significance level		0.00	0.00	0.00

The frequency distribution of patients according to diagnostic categories is shown in Table III. Both sexes were equally distributed in the different diagnostic groups.

The sex and marital status of the patients had no bearing on the inpatient, outpatient and total medical leave durations. However, the duration of medical leave after discharge for patients 45 years and older was significantly longer when compared with those younger than this age (mean = 7.3 days) (Kruskal-Wallis test, Chi square = 5.3, 1 df, $P = 0.02$).

When diagnoses were considered, there were significant differences in the mean ranks of all three measures of inpatient stay, outpatient and total medical leave durations (Kruskal-Wallis tests, 6 df and $P < 0.01$ for all). All three durations were consistently longer in the mood and psychotic conditions compared with the adjustment/stress and substance abuse/dependence disorders (Table III). Do note that while the Kruskal-Wallis test employs a ranking system, the mean ranks have been omitted in the Table, with the means displayed instead, as the latter is easier to interpret and makes the Table more reader-friendly.

However, with each of the durations taken as the dependent variable in the one-way ANOVA test, there was no significant difference found in any of the three durations when the diagnoses of depression, other mood disorders, schizophrenia and other psychotic / delusional orders were compared against one another.

The patients' occupational groups had significant bearing on the outpatient medical leave duration, but not on the inpatient and total medical leave durations. Teachers had the highest mean rank outpatient medical leave length at 178.0 (mean of 9.3 days) compared with all other occupational groups (Kruskal-Wallis test, Chi square =

12.5, 6 df, $P = 0.05$). Approximately two-thirds ($n = 15$) of the teachers were 45 years and older and two-thirds ($n = 15$) were diagnosed with depression.

Discussion

Frequently, psychiatric research employs small study samples. The sample used in this study was large enough ($n = 268$) to permit useful analysis to be made.

In a study done in the USA, Huntley et al⁶ identified five variables that significantly predict the length of psychiatric inpatient stay. They were a primary diagnosis of schizophrenia, the number of previous admissions, a primary diagnosis of a mood disorder, age, and a secondary diagnosis of an alcohol or other drug-related disorder. Richter,⁷ however, reported that age and diagnosis do not account sufficiently for the variation of length of inpatient stay in Germany. Our study supports the findings of Huntley et al, in that, the duration of inpatient stay of our patients was significantly longer for those with a diagnosis of a psychotic or mood disorders. However, we found that age did not affect the length of inpatient stay, although it did so for the length of outpatient medical leave granted.

In contrast, a study which restricted itself to depression only⁸ showed significant influence of age, marital status, female gender, as well as severity and type of depression, on the duration of inpatient treatment. When we studied the depressed inpatients in our sample, we found no significant difference due to gender, although age and marital status caused significant differences.

Finally, a British study revealed that social support at work appears to protect against short spells of psychiatric sickness absence. Conversely though, it also showed how emotional support at home may influence absence-related

behaviour and encourage a person to take absence at a time of illness.⁹

Our study showed that patients with mood disorders were absent from work for as long as the psychotic patients. This seems to give credence to the customary categorisation of both these groups of disorders as major psychiatric illnesses. As would be expected, patients with non-mood/psychotic conditions required shorter inpatient stays and outpatient and total medical leave durations.

Some previous studies done overseas have highlighted the mental health problems of teachers.^{10,11} The findings of our study suggest that if teachers needed psychiatric admission, depression was the most frequent reason. It also showed that these teachers belonged largely to the ≥ 45 years age group.

Limitations

Being a retrospective study necessarily presented some limitations in result acquisition. The study focussed only on medical leave granted to patients who had been admitted. It made no attempt to track these patients during their outpatient follow-up, as records of medical leave granted to outpatients were not reliably kept. Thus, further medical leave taken by these patients has not been included. A very small minority of patients, who declared themselves to be unemployed or housewives, eventually asked for medical certificates and had to be included.

Some patients did not want to give their employers medical certificates from a psychiatric ward and opted instead to consume vacation leave. Teachers who were admitted during the school holidays similarly did not require medical certification of admission. These individuals were thus not included in this study. The largest group, however, that we did not study, would have actually contributed highly significantly to economic losses due to mental illness. This was the group that was so badly affected by their illness that they were unable to work at all. Thus, they did not require medical certification of absence from work. Perhaps a follow-up study might consider this pool of patients.

For the reasons above, the total medical leave consumed by the patients would therefore have been an underestimate. Any calculation of economic costs would need to take such factors into consideration.

Conclusion

With regard to the allocation of medical leave, this study was mainly descriptive in nature. It is not intended to prescribe medical leave entitlement for each condition, although it may serve as a helpful guideline of current

practice. For instance, should a patient's medical leave far exceed expected norms, this should alert clinicians to possible biopsychosocial confounding factors. In this respect, the significantly longer outpatient medical leave granted to older depressed teachers might warrant further attention.

Calculations of the economic costs of mental illness have not been attempted in Singapore. As introduced in this paper, the use of medical certificate counterfoils is a simple yet effective way of measuring days off-work. Future research should consider subsequent outpatient leave taken long after discharge for a more accurate determination of total absence from work. It could also focus on the pool of patients so incapacitated as not to be able to work at all. Calculations of the true economic costs of specific mental disorders to Singapore can then be attempted.

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