Mental Illness and Public Health: Exploring the Role of General Hospital Physicians at a Teaching Hospital in Jamaica

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ABSTRACT

Objectives: *Against the public health implications of untreated mental illness among general hospital inpatients, this study aimed firstly to examine hospital physicians' level of referral to a psychiatric service, and secondly, to explore the extent of these doctors' knowledge of psychiatric issues by comparing their reasons for referring patients with patients' final psychiatric diagnoses.*

Methods: *Over a one-year period, data were collected on all patients referred to a consultation liaison psychiatric service at a multi-disciplinary teaching hospital. Reasons for referral and final psychiatric diagnosis were recorded. Official hospital census data were also used in the calculation of referral rates. Chi-square or Fisher's Exact tests were used as appropriate to explore potential associations between reasons for referral and psychiatric diagnosis. Statistical significance was taken at the 0.05 level.*

Results: *The referral rate was 1.5%. Strange and disruptive behaviour as reasons for referral were strongly associated with the presence of underlying medical conditions as the cause of mental disturbance. Anxiety and psychotic symptoms as reasons for referral were associated with anxiety and psychotic disorders respectively. Depression was often given as a reason for referral when clinical depression was absent, but adjustment issues were prominent.*

Conclusions: *The psychiatric service was underutilized. Generally, the psychiatric knowledge of physicians was fair. However, closer attention to underlying medical conditions as a potential cause for psychiatric disturbance, as well as to the difference between maladjustment and depression, seems warranted. It is possible that clinicians were less able to detect mild to moderate cases of psychiatric illness.*

Keywords: General hospitals, mental disorders, preventive psychiatry, public health, referral and consultation

Enfermedades Mentales y Salud Pública: Explorando el Papel de los Médicos del Hospital General en un Hospital Docente de Jamaica

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RESUMEN

Objetivos: *Haciendo frente a las implicaciones que para la salud pública tienen las enfermedades mentales sin tratamiento entre los pacientes hospitalizados en el hospital general, este estudio se propuso en primer lugar examinar el nivel alcanzado por los médicos del hospital con respecto a la remisión de pacientes a un servicio psiquiátrico; en segundo lugar, se busca explorar el alcance de los conocimientos de estos doctores con respecto a los problemas psiquiátricos, comparando sus razones para la remisión de pacientes con los diagnósticos psiquiátricos finales de los pacientes.*

Métodos: *Por un periodo de un año, se recopilaron datos de todos los pacientes remitidos al servicio de psiquiatría de enlace de consulta en un hospital docente multidisciplinario. Se registraron las razones para la remisión y el diagnóstico psiquiátrico final. También se usaron datos del censo hospitalario oficial en el cálculo de las tasas de remisión. La prueba de chi-cuadrado la prueba de Fisher fueron usadas como medios apropiados para explorar las asociaciones potenciales entre las*

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razones para la remisión y el diagnóstico psiquiátrico. La importancia estadística se tomó al nivel 0.05.

Resultados: *La tasa de remisión fue 1.5%. Los comportamientos problemáticos y raros como razones para la remisión estuvieron fuertemente asociados con la presencia de condiciones médicas subyacentes como la causa de la perturbación mental. La ansiedad y los síntomas sicóticos como razones para la remisión estuvieron asociadas con la ansiedad y desórdenes sicóticos respectivamente. La depresión fue señalada a menudo como una razón para la remisión cuando la depresión clínica estaba ausente, pero los problemas de adaptación tenían preeminencia.*

Conclusiones: *El servicio psiquiátrico estuvo subutilizado. Por lo general, el conocimiento psiquiátrico de los médicos era aceptable. Sin embargo, mayor atención merecen las condiciones médicas subyacentes así como causa potencial del trastorno psiquiátrica, así como la diferencia entre la inadaptación y la depresión. Es posible que los médicos clínicos fueran menos capaces de detectar los casos leves a moderados de enfermedad mental.*

Palabras claves: Hospitales generales, trastornos mentales, psiquiatría preventiva, salud pública, remisión y consulta.

West Indian Med J 2010; 59 (6): 663

INTRODUCTION

The threat to public health posed by mental disorders is well recognized. According to the WHO (1), at any given time, ten per cent of the world population is suffering from a mental disorder. This high prevalence of mental disorder translates into high rates of individual distress and dysfunction, as well as a negative impact on families, societies, productive enterprises and economies. The burden caused by psychiatric disorders is exemplified by the fact that, compared with other chronic illnesses, depression has been found to result in a significantly greater reduction in overall health status (2). In addition, one third (3) of all years lost to disability (YLD) worldwide result from neuropsychiatric disorders. The high prevalence of, and dysfunction associated with, mental disorders have resulted in high direct (*eg* medical expenses) and indirect (*eg* loss of productivity) costs with annual estimates of 79 and 71 billion dollars, respectively, in the United States of America [USA] (4). In Jamaica, untreated depression is estimated to result in up to 1.5 times the costs involved in its treatment (5). The use of health services for medical complaints is also significantly higher among patients with comorbid mental disorders compared to patients without such comorbidities (6).

Early and appropriate treatment of psychiatric illnesses should help reduce the many problems with which they are associated at the individual, family and societal levels. In order for this to occur in a meaningful way, even physicians without specialist psychiatry training must be able to detect the possible presence of mental health issues being confronted by their patients, and to refer them for appropriate specialist management. There are, however, a number of factors which act as barriers to psychiatric referrals. These include inadequate psychiatric knowledge (7, 8), the belief that psychiatric intervention would be unhelpful (9) and a largely unsubstantiated fear of offending and stigmatizing patients by referring them to a psychiatrist (10−12).

Consultation-liaison psychiatric services attempt to bring a more holistic approach to the management of patients being primarily managed by other medical specialties. As part of the treatment team or as a resource for providing psychiatric evaluations and offering ongoing psychiatric education, they attempt to enhance sensitization to mental and emotional issues and, in so doing, to bridge the divide between psychiatric and non-psychiatric medical practice.

In the general hospital setting, referrals to consultation-liaison services by non-psychiatric specialties bring to the attention of mental health service providers, patients whose mental and emotional problems might otherwise have gone unaddressed. As many as twenty-four to thirty per cent of general hospital inpatients have been found to have psychiatric morbidity (8, 13). Because psychiatric conditions are not uncommon among persons with physical illnesses, consultation liaison teams play an important role overall in tackling the growing threat to public health posed by mental illnesses and their sequelae. The integration of mental health services into general health services including general hospitals is, in fact, one of the overarching tenets for the optimal organization of mental health services put forward by the World Health Organization (14).

Despite their objective of providing appropriate psychiatric services to patients from other medical specialties, consultation-liaison services which depend primarily on patient referrals miss seeing many patients who would benefit from their expertise. Twenty-four to thirty per cent (8, 13) of general hospital inpatients have psychiatric morbidity and approximately 12% (15) require psychiatric referral. However, referral rates have been reported as low as 0.9% (16).

The rate of referral to consultation liaison services is a useful indicator of the sensitization of hospital physicians to psychiatric issues and their skill at detecting these problems. Another indicator is the extent to which hospital physicians' perceptions of patients' mental health issues coincide with

diagnoses made by trained psychiatrists. Thus, an examination of the concurrence between reasons for referral and the final psychiatric diagnosis by a consultation liaison team is a valuable exercise.

This paper examines the referral rates to a consultation-liaison psychiatry service and the relationship between reason for referral and final psychiatric diagnosis at a multidisciplinary teaching hospital in Jamaica. We hypothesized that, as has been observed in other studies elsewhere in the Caribbean (7) and the world (15, 16), an underutilization of psychiatric services would be demonstrated. We further hypothesized that in keeping with the recognized barrier to psychiatric referral of inadequate psychiatric knowledge (7, 8), clinicians would be unable to distinguish between clinical parameters of specific psychiatric illnesses. Findings from this research should help inform strategies for enhancing physicians' ability to make appropriate clinical decisions for patients with mental and emotional issues.

SUBJECTS AND METHODS

This study was approved by the appropriate Institutional Review Board, having conformed with established ethical standards and principles.

Over a one-year period, data on all patients referred to a Consultation Liaison Psychiatry service at a multidisciplinary teaching hospital were prospectively collected along the following parameters: referring service, age and gender of patient, stated reason for referral.

Final psychiatric diagnosis was determined by a consultation liaison psychiatrist [these were Axis I diagnoses made using the diagnostic criteria of the Diagnostic and Statistical Manual for Mental Disorders, 4th edition; *ie* DSM-IV TR] (17).

Along with official hospital census data, the data collected were used to calculate referral rates overall and according to specific clinical services. Analyses exploring the possible association between reasons for referral and final psychiatric diagnosis were also made. In these analyses, data suitable for contingency tables were evaluated using the chi-square test to assess homogeneity of proportions observed and independence concerning possible statistical significance of associations. The Fisher's Exact test was also used whenever assumptions for correct use of the chi-square test were not being met. The Phi coefficient and binary logistic regression were also used to evaluate the strength of any significant associations identified by the chi-square or Fisher's Exact tests. In the case of binary logistic regression, age, gender and referring service were included as covariates in each of the associations explored and odds ratios were calculated from the regression models. Version 12.0 of the Staistical Package for the Social Sciences (SPSS Inc, Chicago, IL, USA) was the computer software used to do these analyses and the statistical significance was taken at the 0.05 level.

RESULTS

Two hundred and one patients were referred to the Consultation Liaison service over the year-long study period with 57.7% being females and 42.3% males. The age range of patients was 8−96 years, with a mean age (± sd) of 41.0 (± 18.7) years. There were 13 238 patients (68% female) admitted to the hospital and eligible for referral over the study period. The overall referral rate was calculated at 1.5%.

The services with the highest rates of referral were the Intensive Care Unit (5%), General Medicine (2%), General Surgery (2%) and Orthopaedics (2%) [Table 1].

Table 1: Rates of referral to the consultation liaison psychiatry service at a multidisciplinary teaching hospital in Jamaica, categorized according to referring service: June 2006−May 2007.

Referring Service	Number of patients referred	Referral rate
Intensive Care Unit	10	5%
General Medicine	61	2%
General Surgery	60	2%
Orthopaedics	15	2%
Obs/Gynae	45	1%
Ophthalmology	3	1%
ENT	4	< 1%
Dermatology	1	< 1%
Other	2	< 1%
Total	**201**	**1.5%**

The commonest stated reasons for referral were depression (31.8%), suicidal ideation (10%) and strange behaviour (9%) [Table 2]. The "other" category (20.9%) included a diverse range of stated reasons for referral (*eg* past history of psychiatric illness, negative obsessional thoughts) that did not fit into any of the major categories.

Table 2: Reasons given for referral of patients to the consultation liaison psychiatry service at a multidisciplinary teaching hospital in Jamaica: June 2006−May 2007

Reason for referral[a]	Patients referred n (%)
Depression	64 (31.8)
Suicidal ideation	20 (10.0)
Strange behaviour	19 (9.5)
Disruptive behaviour	14 (7.0)
Evaluation for capacity	14 (7.0)
Psychotic symptoms	11 (5.5)
Unexplained symptoms	10 (5.0)
Anxiety	7 (3.5)
Confusion	6 (3.0)
Other	42 (20.9)

[a]Some patients had more than one reason for referral.

The commonest psychiatric disorders confirmed by the consultation liaison service among the patients referred were

depressive disorders (19.9%), adjustment disorder (19.9%), psychiatric disorders secondary to an underlying medical condition (15.4%) and psychoses which were not secondary to schizophrenia (13.9%) [Table 3].

Table 3: Psychiatric diagnoses made on patients referred to the consultation liaison psychiatry service at a multidisciplinary teaching hospital in Jamaica: June 2006−May 2007

Psychiatric Diagnosis[a]	Patients diagnosed n (%)
Depressive disorder	40 (19.9)
Adjustment disorder	40 (19.9)
Disorders secondary to medical conditions	31 (15.4)
Psychosis not due to schizophrenia	28 (13.9)
Anxiety disorder	18 (9.0)
Substance use disorder	14 (7.0)
Schizophrenia	14 (7.0)
Bereavement	12 (6.0)
Delirium	12 (6.0)
Dementia	11 (5.5)
Bipolar disorder spectrum	10 (5.0)
Disorders secondary to medication	4 (2.0)
Somatoform disorders	3 (1.5)
Schizoaffective disorder	2 (1.0)
Other	2 (1.0)
None	18 (9%)

[a]Some diagnostic categories overlap and some patients had more than one diagnosis

Strange behaviour as a stated reason for referral showed significant association with psychotic disorders secondary to underlying medical conditions (chi-square; $p = 0.004$; Phi coefficient t = 0.145) and with psychotic disorders other than schizophrenia (chi-square; $p = 0.020$; Phi coefficient = 0.165).

Persons who were referred because of disruptive behaviour were likely to have delirium (chi-square; $p < 0.001$; Phi coefficient = 0.261), another psychiatric disorder secondary to a general medical condition (chi-square; $p < 0.001$; Phi coefficient = 0.370), or dementia (chi- square; $p = 0.007$; Phi coefficient = 0.192). Anxiety as the stated reason for referral was predictive of an anxiety disorder (Fisher's Exact test; $p < 0.001$; Phi coefficient = 0.606).

Psychotic features identified at the time of referral were also predictive of schizophrenia (Fisher's Exact test; $p = 0.036$; Phi coefficient = 0.192) and other psychotic disorders (Fisher's Exact test; $p < 0.001$; Phi coefficient = 0.345).

Depression (chi-square; $p = 0.008$; Phi coefficient = 0.194), adjustment disorder (chi- square; $p < 0.001$; Phi coefficient = 0.275) and bereavement (chi-square; $p < 0.001$; Phi coefficient = 0.233) were the axis I diagnoses with significant association with depression as the reason for referral.

No other significant association between reason for referral and the axis I psychiatric diagnosis made by the consultation liaison team was identified.

The highest Phi coefficients were found for the relationships between referrals for psychotic symptoms and diagnoses of psychoses not due to schizophrenia (0.345), referrals for disruptive behaviour and diagnoses of psychiatric disorders secondary to general medical conditions (0.370) and referrals for anxiety and diagnoses of anxiety disorders (0.606).

The results of the binary logistic regression analyses are summarized in Table 4. With the exceptions of the relationship between disruptive behaviour and dementia as well as the relationship between anxiety symptoms and anxiety disorder, all of the associations found to be statistically significant using the chi-square or Fisher's Exact tests remained so after controlling for age, gender and referring service using binary logistic regression models.

Table 4: Binary logistic analyses exploring relationships between reasons for referral and final psychiatric diagnosis while controlling for age, gender and referring service (referrals to the consultation liaison service at a multidisciplinary teaching hospital in Jamaica: June 2006−May 2007)

Reason for referral and psychiatric diagnosis	OR (95% CI)	*p*
Strange behaviour and disorders secondary to medical conditions	4.52 (1.31, 15.63)	0.017
Strange behaviour and psychosis not due to schizophrenia	4.55 (1.39, 14.93)	0.012
Disruptive behaviour and delirium	7.09 (1.60, 31.25)	0.010
Disruptive behaviour and disorders secondary medical conditions	13.89 (3.86, 50.00)	< 0.001
Disruptive behaviour and dementia	2.08 (0.165, 28.57)	0.585
Psychotic symptoms and schizophrenia	6.58 (1.32, 32.26)	0.021
Psychotic symptoms and psychosis not due to schizophrenia	31.25 (6.49, 142.86)	< 0.001
Depression and depressive disorder	2.65 (1.24, 5.65)	0.012
Depression and adjustment disorder	3.82 (1.81, 8.06)	< 0.001
Depression and bereavement	6.71 (1.58, 28.57)	0.010

Further analysis indicated that the apparent association between disruptive behaviour and dementia may have resulted from the confounding effect of age. Persons who were referred for disruptive behaviour were older (49.57 ± 24.94 years) than persons who were not (40.38 ± 18.00 years). This difference approached statistical significance when a t-test was applied (t = 1.79, df = 199, $p = 0.075$).

Because all of the persons who were referred with anxiety (n = 7) were found to have an anxiety disorder, the relationship between anxiety symptoms and anxiety disorders was not amenable to exploration by binary logistic regression or calculation of an odds ratio.

DISCUSSION

Taking into account estimates of general hospital patients requiring referral of 11−12% (15, 18), the overall referral rate

to the consultation-liaison services of 1.5% is extremely low and is similar to the rate of 1.4% reported in a general hospital in Trinidad and Tobago in 1993 (7). This finding is suggestive of a substantial lost opportunity for the provision of psychiatric services to persons in need. Further investigation of barriers to referral, *eg* inadequate psychiatric knowledge – which is also explored in this study, would be helpful in guiding strategies that would result in better utilization of psychiatric services.

The relatively high referral rate from the Intensive Care Unit (ICU) compared with other services is entirely expected. Apart from ICU psychosis attributed to the immobility and sensory monotony associated with the ICU setting, a far more likely explanation is the severity of physical complaints among ICU patients and the association between psychiatric illnesses and underlying medical conditions, particularly if they are severe (19).

In many instances, specific reasons for referral were associated with specific eventual psychiatric diagnoses, suggesting that physicians were able to make some well grounded distinctions between symptom clusters. Physicians therefore appear to be sensitive to a fair range of psychiatric issues corresponding to different symptom clusters and diagnoses. Unfortunately, only limited conclusions can be drawn on the extent to which referring physicians were able to accurately interpret the clusters since no data were collected on their diagnostic impressions (only reason for referral was recorded).

An analysis of which reasons for referral correspond best to which psychiatric diagnoses has pragmatic implications for both non-psychiatrist physicians and psychiatrists. In the case of the former, where reasons for referral are highly associated with the presence of an underlying medical condition influencing the psychiatric illness, this would be helpful information to guide the clinician to focus even more intently on the amelioration of the physical ailments in order to also resolve the mental disturbance. In the case of the latter, psychiatrists may be provided with the basis for a higher index of suspicion for certain diagnoses when evaluating patients with particular stated reasons for referral.

"Strange behaviour" and "disruptive behaviour" are two examples of reasons for referral which were significantly associated with psychiatric problems directly related to underlying general medical conditions. Xiong *et al* (20) have also shown that consult requests for behaviour disturbance carried a high likelihood of these patients being diagnosed with delirium secondary to an underlying medical problem. When faced with strange or disruptive behaviour in their patients, in addition to making a referral for a psychiatric opinion, physicians should also re-evaluate these patients for medical conditions which may be contributing to the psychiatric symptoms, recognizing that timely medical interventions may result in improvement in both physical and mental health.

"Anxiety" and "frank psychotic symptoms" as reasons for referral corresponded well with anxiety disorders and psychotic illnesses respectively. This suggests that physicians were fairly adept at identifying these conditions and that psychiatrists can reasonably expect to find these two types of disorders in patients who have been identified by non-psychiatrists to have the characteristic symptoms.

Apart from depressive illnesses, referrals for depression were also strongly associated with adjustment disorder and bereavement. Adjustment disorder refers to the presence of mild to moderate (but excessive in relation to the context) emotional disturbance in response to an identifiable stressor. Bereavement encompasses the usual stages of the grieving process following the loss of a loved one. Both conditions may mimic depression but usually require emotional support rather than specialist intervention. There is therefore some justification for having physicians become more aware of the difference between depression and these two conditions and to equip them, as well as other members of the healthcare team, to offer the necessary emotional support.

In summary, physicians' knowledge of psychiatric issues seemed to be fair although there is some room for reinforcement of the role of underlying medical conditions in the production of psychiatric symptoms and about the differential diagnoses for depression. Despite the fairly good psychiatric knowledge, referral rates were low. This may be indicative of an ability to detect the most severe cases of psychiatric disorder, but not the less severe ones, although other barriers to referral cannot be ruled out. Sensitizing doctors about conditions which mimic depression, the role of underlying medical conditions in psychiatry, and the need to identify and refer conditions of lower symptom severity may prove valuable in getting treatment to those in need of it, and therefore, in reducing the associated public health problems.

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