

Implication of rates of referral to a specialised inpatient neuropsychiatry team

Finian M O'Brien, Pauline Devitt, Ciaran D Corcoran, Kieran C Murphy

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Abstract

Objectives: This study examined and compared the number and pattern of referrals from neurosurgery and neurology specialist services to the inpatient liaison neuropsychiatry service in the years 2002 and 2005. We estimated the prevalence of psychiatric illness and evaluated the results of subsequent psychiatric assessment and follow-up of all patients reviewed by the neuropsychiatry service.

Methods: The medical notes of those patients referred to the neuropsychiatry team were retrospectively examined to obtain appropriate information on assessment and management of these cases.

Results: There were 544 referrals over the two years selected for study. Rates of referral to the inpatient neuropsychiatry service increased overall by 35% between 2002 and 2005. Overall, referrals from neurology comprised 85%, neurosurgery 15%. Patients with epilepsy comprised the majority of referrals (36%). A total of 378 (73%) had an acute psychiatric disorder and this group had a significantly higher rate ($p = 0.01$) of past psychiatric disorder (40%) than that in those with no acute mental illness (33%). Depressive episode was the most frequent acute psychiatric diagnosis (38%), followed by anxiety and organic psychiatric disorder (both 15%). Overall, 21% of patients diagnosed with acute mental illness were referred on discharge to the neuropsychiatry outpatient clinic for specialist follow up and the remainder followed-up by either local mental health teams or their GP.

Conclusions: These findings provide clear evidence that further resources should be allocated to expanding neuropsychiatry mental health services to improve detection and management of mental illness in this vulnerable patient group.

Key words: Mental health services; Referral and consultation; Hospitals, general; Mental disorders; Epidemiology.

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Introduction

Neuropsychiatry is a specialist medical discipline involving the medical study of disorders with both neurological and psychiatric features. Neurological disorders are associated with an increased risk of mental health problems and it has been suggested that at least 30-50 individuals among the adult population per 100,000 per year, develop significant psychiatric symptoms in association with neurological disorder.¹

These relatively high rates of psychiatric co-morbidity among patients attending neurology and neurosurgical departments have led to the development of specialised psychiatry services in many countries (see Table 1). It has been proposed that an ideal neuropsychiatry service should be accessible, contain appropriate numbers of skilled staff to meet local needs and be allied to both mental health and neurosciences services.²

A recent review of neuropsychiatry service provision in the United Kingdom suggested that a good way of estimating demand of a service is to examine rates of referrals in a particular population.² While several studies have reported on rates of referral to neuropsychiatry services internationally, no previous study has examined either rates of referral or prevalence rates of psychiatric illness within such an Irish inpatient population.

Thus, we aimed to:

- Compare the number and pattern of referrals from neurosurgery and neurology specialist services to the inpatient liaison neuropsychiatry service in the years 2002 and 2005
- Estimate the prevalence of psychiatric illness within neurology and neurosurgery inpatients
- Examine the results of subsequent psychiatric assessment and follow-up of all patients reviewed by the neuropsychiatry service.

Methods

Beaumont Hospital is the national Irish referral centre for neurosurgery and has the most comprehensive neurology service in the country, catering for over 2,000 neurosurgical and 800 neurology patient admissions per year.³ Since 1999, Beaumont Hospital's Department of Psychiatry has provided a specialised neuropsychiatry service to patients admitted under the care of neurology and neurosurgical teams delivered by a multidisciplinary team including a consultant psychiatrist and a dedicated registrar in neuropsychiatry. In addition, a psychologist and social worker are shared with the General Liaison Psychiatry Service.

Referrals to the neuropsychiatry team for 2002 and 2005 were accessed via Beaumont hospital's Patient Information Profile Explorer software package (PIPE). The charts of those patients referred were retrospectively reviewed to

Table 1: Some neuropsychiatric conditions which can be treated by specialist neuropsychiatric services

- Epilepsy
- Neurodegenerative disorders, eg. Huntington's disease, multiple sclerosis
- Neurodevelopmental disorders, eg. autism spectrum disorders, cerebral palsy
- Functional neurological syndromes, eg. conversion weakness, psychogenic nonepileptic seizures
- Brain injury rehabilitation, eg. following trauma or surgery
- Memory disorders

obtain appropriate information on referral, assessment and management of the patient by the neuropsychiatry team. All psychiatric diagnoses were made clinically using ICD-10 criteria.

The data collected was inputted into a database and analysed using the SPSS statistical software programme.⁴ Information on patient admission data to neurology and neurosurgery teams was obtained from official hospital sources.³ Prevalence rates of psychiatric disorder were estimated by comparing the number of diagnoses of each psychiatric disorder with the total number of patients admitted to the neurology and neurosurgical departments in 2002 and 2005 (not including admissions to day wards).

Results

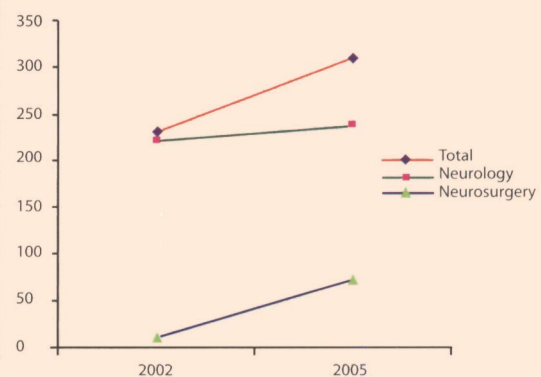
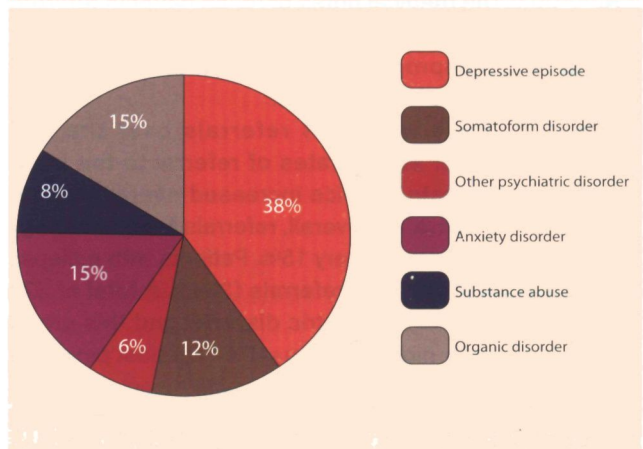
There were 544 referrals over the two years selected for study, comprising 231 in 2002 and 313 in 2005. A total of 511 (94%) were assessed by the neuropsychiatry team and most of the remainder were discharged or transferred to another hospital prior to review (2%). The mean age of patients referred was 43 years (SD = 17 years). A total of 315 (58%) were female, 229 (42%) were male and age did not significantly differ between genders ($p = 0.33$).

The mean age of patients referred did not significantly change between the years 2002-2005 ($p = 0.94$). There were 82 more referrals received in 2005 than in 2002 so that rates of referral to the inpatient neuropsychiatry service increased overall by 35% between those years (see Figure 1). Also, over this time, referrals for psychiatric assessment from the neurology teams increased by 18 (8%) and from the neurosurgical teams, 63 (from 10 referrals in 2002 to 73 in 2005 and representing an increase of 630% in neurosurgical referrals). Overall, referrals from neurology comprised 85%, neurosurgery, 15%.

Over 33% of all neurology inpatients were referred for neuropsychiatric assessment during their admission. Patients with epilepsy comprised the majority of neurology referrals (36%) (see Figure 2).

Of those assessed by neuropsychiatry, 378 (73%) had an acute psychiatric disorder and this group had a significantly higher rate ($p = 0.01$) of past psychiatric disorder (40%) than that in those with no acute mental illness (33%). Depressive episode was the most frequent acute psychiatric diagnosis (38%), followed by anxiety and organic psychiatric disorder (both 15%) (see Figure 3).

Overall, 110 patients (38%) had a past history of mental illness. The prevalence rates of the main psychiatric disorders in the neurology and neurosurgery populations are shown

Figure 1: Referrals to the neuropsychiatry service 2002 and 2005**Figure 2: Psychiatric diagnoses in neurology and neurosurgical inpatients**

in Table 2. Overall, 21% of patients diagnosed with acute mental illness were referred on discharge to the neuropsychiatry outpatient clinic for specialist follow up and the remainder followed-up by either local mental health teams or their GP (see Figure 4).

Discussion

We found that referrals to the inpatient neuropsychiatry liaison service in Beaumont Hospital increased by 35% between 2002 and 2005. Service demands increased significantly over that time, while resources for service delivery remained constant.

These findings provide clear evidence that the recommendations for development of the neuropsychiatry service in Beaumont hospital, as made by the expert group on mental health policy in Ireland in *A Vision for Change*,⁵ should be implemented as soon as possible to meet increased service demands.

We found that prevalence rates for mental illnesses commonly seen in this population were significantly less than might be expected from similar studies carried out in other centres.^{6,7} However, our prevalence rates were based on the findings of psychiatric illness in only those referred to and assessed by the neuropsychiatry team. Also, diagnosis was based on clinical assessment and specific standardised diagnostic instruments (such as the SCID) were not used.

Figure 3: Neurological diagnoses in neurology and neurosurgical inpatients

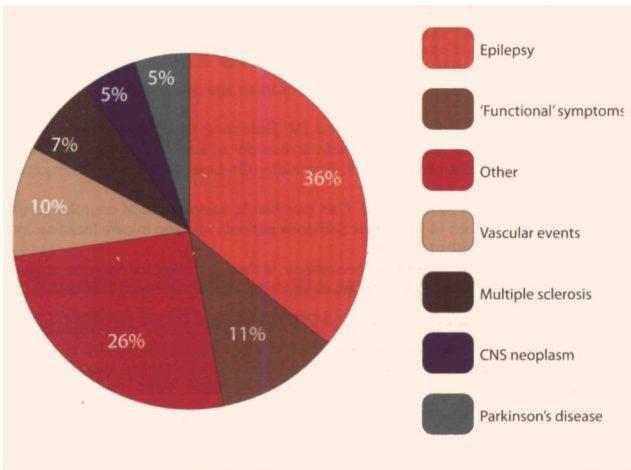
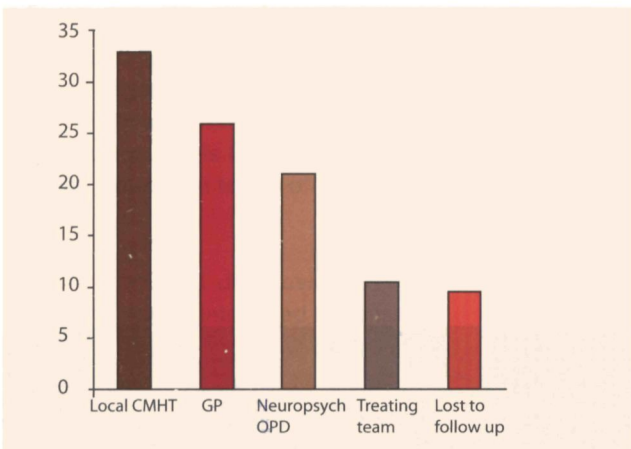


Figure 4: Follow-up of neurology and neurosurgical patients diagnosed with acute psychiatric illness during inpatient assessment



Furthermore, our study was retrospective and we did not screen every patient admitted to the neurology and neurosurgical departments for psychiatric disorder. Therefore, these low prevalence rates are likely to represent limited detection and referral of patients with symptoms of mental disorder admitted under neurosurgical and neurology teams, rather than being true prevalence figures *per se*.

Studies carried out in other specialist centres have suggested that detection of mental illness by neurology teams is relatively low, compared with that by other medical specialities.⁸ Also, patients who are admitted for short periods of time are more likely not to be assessed by psychiatry,⁹ and a recent Beaumont hospital report found a relatively high turnover of patients admitted under neurology and neurosurgical teams.³ Thus, it is likely that some patients with psychiatric disorder are not referred for appropriate psychiatric assessment.

However, our findings of significantly increased referrals from both neurology and neurosurgical teams to neuropsychiatry over the period 2002-2005 indicate that detection and appropriate referral of patients with psychiatric symptoms has improved.

Nevertheless, given consistent evidence that patients with neurological disorders and untreated co-morbid mental illness have higher rates of psychiatric and medical morbidity, it is imperative to optimise detection and treatment of mental

Table 2: Prevalence rates of psychiatric illness in neurology and neurosurgical patients assessed by the neuro-psychiatry team (as classified under ICD-10 criteria)

Population	Affective Disorder	Anxiety Disorder	Conversion Disorder	Substance Abuse Disorder
Neurology patients (n = 806)	12.1%	3.8%	3.8%	2.3%
Neurosurgery patients (n = 2,093)	0.7%	0.3%	0.1%	0.4%
Previous reports (neurology ⁵)	24.8%	12.7%	4.5%	3%

disorder in this population. This could be facilitated further through increasing patient education on mental health issues and greater liaison with medical and neurosurgical colleagues to improve awareness of clinical features of psychiatric illness and optimise liaison with the neuropsychiatry team. In addition, screening questionnaires for mental illness in this population have been developed recently and could be used to improve detection rates of mental illness on neurology and neurosurgical wards.^{6,10}

We found that although over 73% of patients assessed had an acute psychiatric illness which required treatment, 60% of these had no previous history or contact with the mental health services. This finding highlights the vulnerability of this patient group to developing mental health problems and the importance of having an appropriate psychiatry service available within the general hospital setting to cater for their needs.

We found that a significant proportion of patients diagnosed with acute psychiatric illness during their admission were followed up by their GP or locally-based community mental health services without formal arrangements for further neuropsychiatric OPD review. However, although some people who have received multidisciplinary neuropsychiatric inpatient assessment can be appropriately cared for by locally-based services on discharge, many require specialist neuropsychiatry outpatient follow-up according to their clinical needs.

Also, while the clinical outcome of those patients not followed up by the specialist neuropsychiatry service is unknown and beyond the scope of this study, previous studies comparing consultant liaison models of care to GP and general medical services have suggested that follow-up by specialist psychiatry services reduces psychotropic drug prescription and increases psychological and psycho-educative opportunities available to the patient.^{11,12}

One proposed model of care recommends that appropriately staffed and resourced regionally-based neuropsychiatry services should liaise closely with community-based services so that access to specialist advice and opinion is improved and educational and research opportunities are facilitated.²

Furthermore, this process could be facilitated through the establishment of outreach clinics and neuropsychiatry special interest groups and help to reduce unmet needs.¹³ Therefore, we suggest that, in line with a recent report,¹⁴ guidelines for follow up by dedicated neuropsychiatry services be developed to ensure best patient care and appropriate resources allocated to meet need.

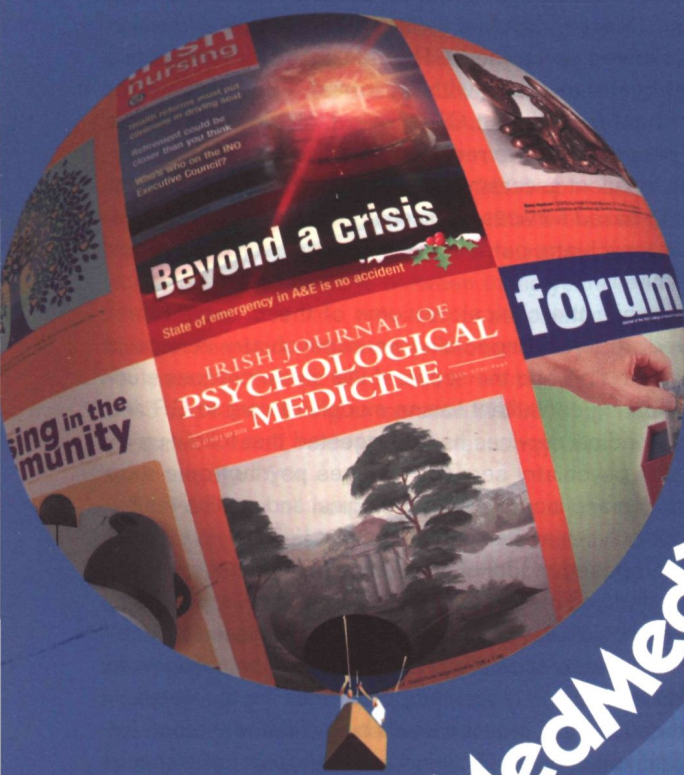
Conclusion

Further resources should be allocated to expanding neuro-psychiatry inpatient and outpatient mental health services to improve detection and management of mental illness in this vulnerable patient group.

Declaration of Interest: None

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