

SHORT REPORT

Mental illness in new neurological patients

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Objective: To determine the prevalence of psychiatric disorders in new neurological inpatients and outpatients, and examine whether they are recognised, treated, or referred to psychiatric consultation.

Methods: 198 consecutive patients referred for the first time to a neurologist were studied using a two phase design. ICD-10 psychiatric diagnoses were established by means of the SCAN (Schedules for Clinical Assessment in Neuropsychiatry).

Results: The overall prevalence of current mental disorders was 55.1% (95% CI: 46.2 to 63.8), and 65.0% (95% CI: 56.1 to 73.0) had at least once in their life had a psychiatric disorder. The most frequent current diagnoses were somatoform disorders (33.8%, (95% CI: 25.9 to 42.7%)), followed by phobias (21.8%; 95% CI: 15.3 to 30.0), substance use disorders (13.3%; 95% CI: 8.3 to 20.6) and depression/dysthymia (14.4; 95% CI: 9.1 to 21.8). The psychiatric morbidity markedly declined with increasing age. Compared with 63.5% of the women, 46.4% of the men had a psychiatric disorder. Substance use disorders were more frequent in men than women ($p=0.002$). Patients with a psychiatric disorder were more frequently seen in the outpatients' clinic than those without. The neurologists detected 14%–40% of the cases, 16.9% were in treatment, and only 4.6% were referred to mental health care.

Conclusion: Psychiatric disorders, in particular somatoform disorders, are extremely common in neurological patients, especially in young and middle aged patients, outpatients, and women. The results call for more research on mental illness' impact on care and outcome in neurological patients.

High prevalences of mental illness have been found among neurological patients.^{1–3} However, the number of studies is low and none have used up to date study designs or assessment techniques and/or have not reported figures on the overall psychiatric morbidity, but examined only a fraction of the psychiatric diagnoses.

The aim of this study was to determine the prevalence of all types of non-organic psychiatric disorders among new, neurological inpatients and outpatients and to study whether psychiatric disorders are recognised and treated.

METHODS

Inclusion

Consecutive patients aged 18 or older referred for the first time, to the Neurological Department of Vejle County Hospital, were included during a three months period in 1997. The department provides all hospital based neurological services for the general population in the catchment area.

In total 290 new patients were admitted either as inpatients or outpatients during the inclusion period. Patients of non-Scandinavian origin ($n=5$) and patients who could not be interviewed because of their medical condition ($n=36$)

(deafness, aphasia, disorientation, etc) or patients discharged before they could be contacted by a research worker ($n=11$) were excluded. Forty patients refused to participate. Thus, 198 patients were included.

Comparing the included patients with the excluded, no or only minor differences as to age, sex, and use of psychiatric and non-psychiatric health care are found (details available from the authors).

Procedure and assessment

By admission or first contact, all patients were interviewed by one of two research nurses. The interview included an eight item version of the Symptom Check List (SCL-8)⁴ assessing anxiety and depression, and the seven item Whiteley index⁵ measuring illness, worrying, and somatisation.⁵ The responses to each item were dichotomised. For the selection of patients for diagnostic psychiatric interview, patients with a score of two or more on the SCL-8 D and/or three or more on the Whiteley-7 were considered high scorers. A random sample consisting of 50% of all patients was then selected for psychiatric interviews, followed by adding all high scorers from the remaining half. This stratified subsample of patients was interviewed either during admission or at the first visit in the outpatient's clinic, or as soon as possible after the first visit. The psychiatric interview was conducted by means of the SCAN, version 2.1.⁶ Of the 130 patients selected for psychiatric interview, 10 refused to participate. The two SCAN interviewers were psychiatrists, certified at the WHO centre in Aarhus. They were blinded to the patients' answers to the screening interview. The inter-rater agreement was high (agreement on 16 of 17 patients; $\kappa=0.88$).

The SCAN interviews were used for computerised ICD-10 psychiatric diagnoses.

At first contact the neurologists filled in a short questionnaire including the neurologists' assessment on whether the patients had a mental disturbance on a scale of no, mild/subclinical, modest, and severe.

Data analysis

Data from the second phase of the two phase design were analysed using weights inversely proportional to the sampling probabilities.^{7,8} The associations between psychiatric disorders and other variables, the prevalence estimates and approximate confidence intervals were calculated by weighted logistic regression. To ensure valid standard errors and significance tests, the weights were scaled to equal the actual sample size, 120.

RESULTS

The median age of the included patients was 50, and 53.5% (106 of 198) were women. Fifty three per cent were employed, 10.6% unemployed, 24.7% retired, 11.6% on disablement pension, 30.8% lived alone. Some 42.4 % of the patients were at first contact admitted as inpatients, all acutely except for one.

The overall prevalence of mental disorders according to ICD-10 criteria was 55.1% (table 1). Somatoform disorders were the most frequent diagnoses (33.8%), followed by

Table 1 Prevalence of mental disorders*

	Present state		Lifetime ever	
	%	95% CI	%	95% CI
Depression including dysthymia	14.4	(9.1 to 21.8)	28.3	(21.0 to 37.0)
Anxiety, total	24.3	(17.5 to 32.8)	25.4	(18.4 to 34.0)
Phobias (F40)	21.8	(15.3 to 30.0)	21.8	(15.3 to 30.0)
Generalised anxiety (F41.1, F41.9)	3.9	(1.6 to 9.3)	7.9	(4.2 to 14.2)
Panic disorders (F41.0)	0.0	(0.0 to 0.0)	3.1	(1.1 to 8.2)
Somatoform disorders (F45, F44.4–6, F48)	33.8	(25.9 to 42.7)	34.9	(26.9 to 43.8)
Substance use disorders (F10–F19)	13.3	(8.3 to 20.6)	20.3	(14.0 to 28.4)
Other	1.7	(0.4 to 6.5)	5.1	(2.3 to 10.8)
Any mental disorder	55.1	(46.2 to 63.8)	65.0	(56.1 to 73.0)
excluding somatoform disorders	42.5	(33.9 to 51.4)	55.1	(46.3 to 63.7)
excluding phobias	48.0	(39.2 to 56.9)	59.5	(50.6 to 67.9)
excluding substance misuse	49.2	(40.4 to 58.1)	59.6	(50.6 to 68.0)
excluding substance misuse and phobia	41.0	(32.5 to 50.0)	54.1	(45.1 to 62.8)
excluding substance misuse, phobia, and somatoform disorders	19.3	(13.2 to 27.4)	38.2	(30.0 to 47.2)

*Calculated on the basis of weighted data. One patient may receive more than one diagnosis, for which reason the sum exceeds the overall prevalence.

phobias (21.8%). The weighted prevalence of substance use disorders and depression/dysthymia was 13.3% and 14.4%, respectively. Sixty five per cent of the patients had at least once in their lifetime fulfilled the diagnostic criteria for a mental disorder

Of the 20 patients with a current depressive episode, 10 (F32.0 and F33.0, weighted prevalence 7.6%) had a mild depressive episode, five (3.5%) had a modest one (F32.1 and F33.1), and one (0.7%) had a severe depressive episode (F32.2). Additionally 16 patients had a recurrent depressive disorder (F33.4) in remission. These patients were not included in Present State prevalence figures. Three (2.1%) patients were dysthymic (F34.1).

Of the 15 patients with a substance use diagnosis, 11 (10.3%) patients misused alcohol only. Two of the alcohol users were psychotic (F10.5 and F10.7). No other psychotic disorders were diagnosed.

As shown in figure 1, the overall psychiatric morbidity markedly declines with increasing age (test for trend in proportions, weighted data, $\chi^2 = 15.9$; $df = 1$; $p < 0.001$). The overall psychiatric morbidity of men was 45.9% compared with 63.3% among women. The sex difference was present in all three age groups, and statistically significant (weighted logistic regression with gender and age group as covariates; $\chi^2_{\text{wald}} = 4.3$, $p = 0.04$).

Substance use disorders were statistically significantly more frequent in men than in women, whereas all the other diagnoses displayed in figure 1 were more prevalent among women, but neither reached statistical significance at 5% level.

The prevalence of psychiatric disorders was 64.6% among outpatients compared with 38.6% among inpatients. Overall 74.4% of the mentally disordered patients were primarily examined as outpatients. A markedly higher proportion of the inpatients without a mental disorder had been admitted outside of normal working hours by a GP on call (41.8% *v* 16.5%), whereas patients with a mental disorder more often had been admitted through the emergency room (23.4% *v* 4.8%). However, because of the small numbers this finding was not statistically significant.

At first contact, the neurologists rated 41.5% of the SCAN positive patients as having a mild to severe mental disturbance and 13.8% as having a clinically significant (that is, moderate or severe) mental disturbance. The specificity—that is, whether the neurologists correctly identified the mentally healthy patients—was 90.6%. The neurologists correctly diagnosed one case of severe depression (F32.2), but missed three of four cases of moderate depression (F32.1 and F33.1), and none of the four generalised anxiety disorders were diagnosed.

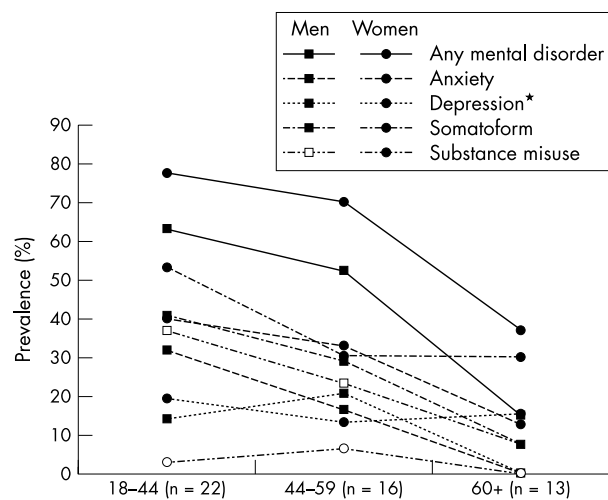


Figure 1 Mental disorders, age, and sex.

Only three (1.5%) of the 198 included patients (or 4.6% (3 of 66) of the mentally ill) were referred to a psychiatrist or to a psychologist. Twelve (16.9%) of the patients with a mental disorder were, at first contact, in treatment for a mental disturbance, seven (9.6%) by their family physician only, the other by a psychiatrist or psychologist.

DISCUSSION

The study shows that psychiatric disorders, and in particular somatoform disorders, are very common among neurological patients, especially among the younger and the middle aged, outpatients, and women. The morbidity figures are substantial as they are based on the SCAN interview, which is by far the most extensive diagnostic interview for psychiatric disorders.^{9–10} The overall prevalence figures of 55.1% is higher than the 34%–47% found in previous studies. This may partly be explained by these studies lacking in depth investigations for somatoform disorders and the sampling of patients.^{1–3} The prevalence was higher than the 39% found among internal medical inpatients in a study using the same method,¹¹ but the difference may be attributed to differences in age and sex distribution rather than a real specialty related prevalence difference.

In this study, 11.6% had depression. This is a little more than the 5%–10% obtained in a medical setting,^{11–13} but less than the 27% found by Carson³ among neurological outpatients. We found anxiety states in 24.4% of the patients,

which is a high number compared with studies in internal medical settings.^{11–13} This difference may be attributed to the high number of phobias in this study, as only 4% had a generalised anxiety disorder and none had a current panic disorder. About half of the phobias were mild, but most also had another mental disorder. Carson *et al*¹ found higher prevalences of anxiety disorders than we did. This may be attributable to Carson *et al* studying neurological outpatients only, as well as their diagnoses being based on the less comprehensive Prime MD as diagnostic interview.

An outstanding finding was the marked association between age and psychiatric morbidity. A similar pattern has been found among internal medical inpatients,¹¹ whereas the age distribution has not been reported on previous studies in neurological settings.^{1–3}

The trend in age is probably a reflection of the skewness of the neurological patient population samples, rather than a reflection of a true prevalence difference in the general population.

Though we asked the neurologists to determine for each patient whether they had a mental disorder, only a few of the SCAN cases were recognised by the neurologists. This finding is in accordance with previous reports.¹ There was no association between detection and severity.

Only very few patients were referred for psychiatric assessment or treatment including patients rated as having a “clinically significant mental disturbance” by the neurologists. This, together with the fact that only a few patients were already in treatment at the time of admission, may indicate considerable unmet need for treatment.

The results call for more research on the identification and management of psychological disorders in neurological patients, and the impact of mental disturbances on care and outcome.

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