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The Impact of a Liaison Psychiatry Service on Patterns of Referral in a General Hospital

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A retrospective study of psychiatric referrals from a general hospital inpatient population was carried out for three separate years, 1973, 1976 and 1979. Reorganisation of the liaison service to the responsibility of one consultant team was associated with changes in referral rate and disposal. In particular, there was a significant increase in the referral rate of patients from medical and surgical wards who were not involved in acts of deliberate self-harm.

The association between physical illness and psychiatric morbidity is now well recognised (Lloyd, 1977) but the extent to which psychiatrists are involved in the management of inpatients in general hospitals is very variable. Historically, the uncertain relationship between general medicine and psychiatry in Britain has passed through several phases. Traditional psychosomatic medicine had little impact on clinical psychiatry earlier this century (Gath & Mayou, 1983). In the 1950s, psychosomatic concepts proposed by Alexander (1952) and others attracted attention for a time but soon fell into disfavour on account of claims which were over-inclusive and theories which were difficult to substantiate (Lipowski, 1977; Gomez, 1981). However, in the 1960s the trend appeared to change following the development of consultation–liaison psychiatry, particularly in the United States (Lloyd, 1980). With a few exceptions (Crisp, 1968; McLeod & Walton, 1969) the concept of liaison psychiatry in its fullest sense i.e. the psychiatrist's integral involvement in the management of general hospital patients, has never developed as fully in the UK as in the USA, in contrast to the advances that have taken place in the management of deliberate self-harm.

In most general hospitals, psychiatrists offer a regular consultative service to their non-psychiatric colleagues but the types of service offered and the referral rates vary greatly (Brooks & Walton, 1981). Referral rates are consistently higher in the USA than in the UK (Lloyd, 1980) but in neither case are they commensurate with the levels of psychiatric morbidity found amongst general hospital in-patients (Maguire *et al*, 1974). Analysis of the type of referrals made to liaison services has been carried out at a number of centres (Fleminger & Mallett, 1962; Anstee, 1972; Fava & Pavan, 1980) but few recent studies have examined the trends in referral patterns over time. In October 1974, a liaison psychiatry service, staffed by one consultant team, was introduced to the general wards of the Victoria Infirmary, Glasgow. In the course of the next few years, a rise in the annual referral rate was noted (Fig. 1) and this paper sets out to examine the nature of the changing pattern of referrals to the liaison service.

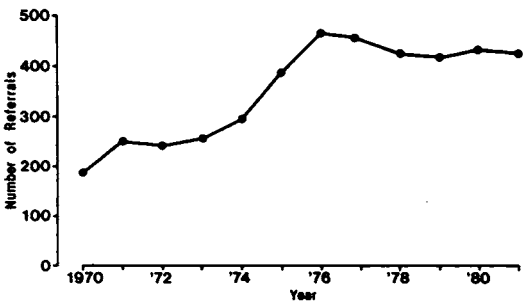

FIG. 1. Annual referral rate of Victoria Infirmary inpatients to the liaison psychiatry service.

Description

The Victoria Infirmary is a 500-bed general hospital, without a psychiatric in-patient unit which, during the time of the study, served the population of Greater Glasgow Health Board, South Eastern District, approximately 200,000 people. Prior to October, 1974 patients referred by physicians and surgeons were seen in the wards by psychiatrists from the associated psychiatric hospital, Leverndale Hospital, situated 6 miles away. Consultations usually took place on a twice-weekly rota basis

during the course of outpatient sessions held at the Victoria Infirmary. Since that date, referrals from the general wards have been the responsibility of one of the Leverndale clinical teams consisting of the consultant and one trainee psychiatrist who have devoted three sessions per week to liaison psychiatry.

Initially, all patients were seen in the medical or surgical wards, but in 1976, accommodation adjacent to the medical wards became available for psychiatric staff to interview patients in privacy. Referrals are made by letter and an appointment system is operated. Patients are brought to the Department of Psychiatry by ward staff and the management of each is discussed with appropriate medical or nursing staff before the end of each liaison session.

Method

A retrospective case-record study was carried out on all patients referred for a psychiatric opinion in 1973 (the last full year prior to the introduction of the liaison service); and also those referred during 1976 and 1979. Information was obtained from both general hospital and psychiatric hospital case records and from contact sheets used by the local psychiatric service. The following data were recorded: age and sex of referred patient, source of referral, previous contact with the psychiatric services, presence of self-poisoning or injury, primary psychiatric diagnosis and disposal.

Information relating to admissions to the Victoria Infirmary and to Leverndale Hospital and the number of referrals to the psychiatric outpatient clinics in the catchment area was obtained from the Information Services Division, Greater Glasgow Health Board. The significance of differences between the samples was assessed by χ^2 analysis and in view of the large number of patients and tests of significance involved, $P<0.01$ was taken as the criterion for statistical significance (Altman *et al*, 1983).

Results

Demographic features

The mean ages of the referred patients were 35.7 years (1973), 40.6 years (1976), 40.9 years (1979). Consistently the highest number of referrals was in the age-range 20–29 years and in each year, approximately 75% of the patients were between 20 and 59 years of age. The ratio of male to female patients remained fairly constant (1/1.85 in 1973 and 1976; and 1/1.91 in 1979).

Diagnostic categories

Diagnoses were made initially according to the ICD-9 classification (WHO, 1978) and were then grouped into nine categories. The results relative to the primary diagnoses are shown in Table I.

In several categories, e.g. alcohol and drug addiction and organic brain disorders, the percentage of patients diagnosed remained approximately constant, whereas in others, e.g. personality disorder and situational disturbance, there was a significant change. This probably represents a variation in the fashion and priorities for psychiatric diagnosis rather than an alteration in the patient population. This conclusion is supported by observing the results obtained when the percentages in diagnostic categories 1 and 2 were combined and those in categories 3 and 4 were also combined (Table I). Comparable totals for each of the three years studied were obtained for each category. Thus, 41–45% of patients were diagnosed as personality disorder and situational disturbance, and 28–32% as suffering from depressive illnesses.

A separate analysis was carried out for the group of patients who had not harmed themselves (50 in 1973; 127 in 1976; 112 in 1979). Whilst there was a decline in the frequency of a primary diagnosis of personality disorder over the years similar to that in the total group, the diagnosis of depressive illness increased from 4 (8%) in 1973 to 34 (27%) in 1976 and 31 (28%) in 1979. The diagnosis of neuroses (other than depressive) also increased from 4% in 1973 to 8% in both 1976 and 1979 whilst that of alcohol and drug-related problems decreased from 26% in 1973 to

TABLE I
Primary psychiatric diagnoses (approximate % in parenthesis)

Diagnosis	*1973*	*1976*	*1979*	*P (d.f. = 2)*
1. Personality disorder	56 (22)	53 (11)	20 (5)	<0.001
2. Situational disturbance	47 (19)	147 (32)	166 (40)	<0.001
3. Neurotic depression	66 (26)	80 (17)	68 (17)	<0.01
4. Endogenous depression	14 (6)	68 (15)	48 (11)	<0.01
5. Alcohol and drug addiction	34 (13)	56 (12)	42 (10)	NS
6. Organic brain disease	16 (6)	31 (7)	26 (6)	NS
7. Other psychosis	12 (5)	16 (3)	14 (3)	NS
8. Other neurosis	5 (2)	11 (2)	18 (4)	NS
9. No diagnosis	2 (1)	6 (1)	18 (4)	<0.01
Total	252	468	420	

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TABLE II
Disposal (% in parenthesis)

	1973	*1976*	*1979*
GP only	93 (37)	130 (38)	180 (43)
Outpatient follow-up	111 (44)	195 (41)	131 (31)
Inpatient care (Leverndale)	33 (13)	64 (14)	50 (12)
Other	15 (6)	79 (17)	59 (14)

21% in 1976 and 12% in 1979. The diagnosis of organic psychosyndromes in this group was high but relatively constant at around 25%.

Disposal

Table II shows the pattern of disposal of patients following consultation. The percentage followed up as outpatients fell significantly during the period 1976–1979 ($P<0.001$) and this was entirely due to a reduction in the follow-up rate of the deliberate self-harm group ($P<0.001$). The proportion of patients transferred to psychiatric inpatient care, however, remained constant. A consistent majority in the latter group were patients previously known to the psychiatric service (55–60%) and most had harmed themselves (1973:79%; 1976:64%; 1979/76%).

TABLE III
Number, source and type of referral (% in parenthesis)

Referrals	*1973*	*1976*	*1979*
Total referrals	252	468	420
Referred by physicians	227 (90)	418 (89)	365 (87)
Deliberate self-harm (DSH)	202 (80)	341 (73)	308 (73)
Non-DSH	50 (20)	127 (27)	112 (27)

Referral rates

Table III shows the total number of referrals to liaison psychiatry in each of the three years studied, the number referred by physicians and the numbers of cases of deliberate self-harm (DSH) and non-DSH patients. The vast majority of patients referred were cases of DSH and from physicians, but an increased proportion of non-DSH referrals was noted after 1973.

Table IV shows the referral rates of various categories of admission i.e. the number of patients referred divided by the total number of admissions to the Victoria Infirmary in each category. There was a significant increase in the referral rates of all admissions to the Victoria Infirmary, of admissions to the medical wards and of non-DSH patients. However, there was no significant change in the referral rates of patients indulging in self-harm despite the fact that the commitment to liaison psychiatry was increased by one session per week.

TABLE IV
Referral rate of various categories of admission to Victoria Infirmary

	1973	*1976*	*1979*	*P (d.f. = 2)*
Total referrals	252	468	420	
Total admissions	13594	14811	14991	
Referral rate	1.85%	3.16%	2.80%	<0.001
Referrals from physicians	227	418	365	
Total medical admissions	3388	3686	3922	
Referral rate	6.7%	11.3%	9.3%	<0.001
DSH referrals	202	341	308	
DSH admissions	347	536	551	
Referral rate	58.2%	63.6%	55.9%	NS
Non-DSH referrals	50	127	112	
Non-DSH admissions	13247	14275	14440	
Referral rate	0.38%	0.89%	0.78%	<0.001

The possibility that the rise in referral rate was merely a reflection of rising psychiatric morbidity in the community was investigated by comparing total liaison referrals and non-DSH liaison referrals in each year with the number of referrals made to the associated district psychiatric outpatient clinics and inpatient psychiatric wards. The results in Table V show that the increase in both total and non-DSH liaison referrals was significantly different from these other indicators of psychiatric morbidity.

TABLE V
Comparison of liaison referrals, new outpatient psychiatric referrals and psychiatric admissions

	1973	*1976*	*1979*
A. Total liaison referrals	252	468	420
B. Non-DSH liaison referrals	50	127	112
C. Total new outpatient psychiatric referrals	959	1148	692
D. Total psychiatric admissions	973	1074	1086

For comparisons A vs C, A vs D, B vs C and B vs D: $P<0.001$, d.f. = 2.

Discussion

Reorganisation of the liaison psychiatry service to a general hospital provided a natural experiment in which the impact of the work of a single liaison team on patterns of referral could be investigated. There appears to be only one recent study in which changes in the pattern of referrals to a liaison service over

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time have been studied. Lipowski & Wolston (1981) compared two consecutive populations of 1000 patients referred to a liaison service during an 8-year period and emphasised the stability of the populations in relation to demographic characteristics, diagnostic categories and patterns of referral and intervention.

Despite the widely differing proportions of patients indulging in deliberate self-harm (8% of Lipowski & Wolston's patients and 73–80% in the present study) the demographic characteristics of the two populations are similar; 75% of the present sample being between 20 and 59 years in each year examined, compared with 70% in the other study. The ratio of female to male patients is also slightly higher in the present series, 1.85–1.91:1 compared to 1.6–1.8:1. These results are similar to the findings of Fleminger & Mallett (1962) and Fava & Pavan (1980).

Comparison of the distribution of the psychiatric diagnoses in the two studies is limited by the use of different classifications. For example, the first two categories are not specifically represented in Lipowski & Wolston's paper. The proportion of depressive disorders found in our patients is markedly less (28–32% compared to 43–50%) as is the percentage of patients with organic brain syndromes (6% compared to 14–15%). The latter finding may be a reflection of the much higher proportion of patients presenting with deliberate self-harm in the present study since, when these are excluded, the percentage of organic disorders rises to 22–28%.

The very high percentage of referrals from physicians in this study (87–90%) is probably related to the high proportion of cases of deliberate self-harm. However, when these are excluded, the referral rate from physicians (58–66%) is still higher than from other specialties and is similar to the 60% reported by Lipowski & Wolston (1981).

The change in pattern of disposal, particularly the significant reduction in the follow-up rate of those who had harmed themselves, is probably the result of a conscious alteration in the management of these patients. There is increasing awareness that even intensive follow-up does not significantly alter repetition rates (Chowdhury *et al*, 1973; Gibbons *et al*, 1978; Hawton *et al*, 1981), and that a reduction in repetition rates is more likely to occur when psychiatric assessment and advice takes place before discharge from hospital (Greer & Bagley, 1971; Kennedy, 1972). The high default rate of these patients at subsequent outpatient appointments is well recognised (Morgan *et al*, 1976; Blake and Mitchell, 1978). In contrast, however, a relatively constant proportion of patients require psychiatric inpatient care for further assessment and treatment.

Referral rates to the liaison service are comparable to those elsewhere in the UK (Lloyd, 1980) but these rates are much lower than the reported rates of psychiatric morbidity found in medical wards (Maguire *et al*, 1974). There are several possible reasons for this. Estimates of psychiatric morbidity may be excessive, the psychiatric services may be inadequate, psychiatric disorder may not be recognised or, if recognised, may be treated by the non-psychiatric specialist or general practitioner (Mezey & Kellett, 1971). Several authors have commented on the resistance of other specialists to referring their patients to psychiatrists. The problem is often attributed to the patient but may in fact reflect reluctance on the part of the referring specialists themselves (Steinberg *et al*, 1980).

Unlike the increase in referral rates observed in another British study (Anstee, 1972), the rise in referral rate over the period of this investigation is not attributable to increased referral of cases of deliberate self-harm. It is noteworthy that the maximum rate of referral in this group was only 63.6%, despite government recommendations (Ministry of Health, 1961) that all such cases should have formal psychiatric assessment.

The most striking finding in this study is the significant increase in the referral rate of medical and surgical inpatients who are not involved in acts of deliberate self-harm. This does not appear to be associated with a rise in psychiatric morbidity generally, as measured by the rate of admissions to the local psychiatric hospital and outpatient referrals to the psychiatric service at the time. It is encouraging to note that the rise in referral rate is associated particularly with an increase in the diagnosis of potentially treatable conditions such as depressive illness and neurotic disorders.

The results suggest that the changes observed in the pattern of referrals are related to the interaction between the reorganised liaison service and the referring departments. The identification of a specific liaison team may lead to improved interprofessional relationships, an increased awareness of the importance of psychological factors in physical illness and a more well defined and realistic expectation of the service provided. Crisp (1968) reported a referral rate of 10% of inpatients from two medical wards to his liaison service and emphasised that personal contact with the physicians was a major factor determining the extent of referrals of patients for psychiatric opinion. Other authors have attributed changes in both rate (Torem *et al*, 1979) and specificity (Davis & Nelson, 1980) of referral to liaison services, to increased contact with the referring departments. The present study demonstrates that even a modest

reorganisation of the liaison psychiatry services to a general hospital can be associated with a significant increase in the referral rate of patients in medical and surgical wards.

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