Patterns of neurotic illness in the community

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THE past 40 years have seen the growth of an extensive literature on the course and outcome of the neuroses. A comprehensive review of the subject by Ernst, Kind and Rotach-Fuchs (1968) provides over 1,000 references. While many of these investigations were concerned with the evaluation of treatment methods, others focused on what has been called the natural history of neurotic illness (Greer and Cawley 1966). The extent to which problems of definition and method have been solved varies enormously, but most of the published studies share in common the disadvantage of being based exclusively on hospital case-material.

This drawback was overcome in the design of a recent follow-up of psychiatric illness in a general practice population (Kedward and Cooper 1966, Kedward 1969). The patient cohort was identified in the course of a one-year survey of a sample of adult patients registered in 46 London practices (Shepherd *et al* 1966). Of a total population sample of about 15,000 patients, just over 2,000 were reported to have consulted with psychiatric symptoms during the survey year (1961–2). The follow-up enquiry was designed to reveal the clinical progress of these patients over a period of three years from the time of their initial survey consultations.

An additional weakness of hospital follow-up studies has been the lack of information about base populations or normal control groups which could help to bring their findings into perspective. The evidence of prevalence surveys suggests that the reported rates for psychiatric illness are partly a function of the time span of observation. Thus, surveys which have included all cases active during a period of several years (Roth and Luton 1942, Bremer 1951, Leighton *et al* 1963) have tended to yield high 'lifetime prevalence' figures. In this country, the few longitudinal studies of general practice populations (Paulett 1956, Cooper *et al* 1969) suggest a considerable turnover in the membership of the 'neurotic' group, year by year. These findings merely emphasize what we know from clinical experience; namely, that many cases of functional psychosis and neurosis run an episodic course.

Assuming that the total amount of psychiatric morbidity in a defined population does not much alter over a number of years, one would expect the number of new illnesses to be balanced by recoveries, together with some deaths among unrecovered patients. Thus, a follow-up of matched neurotic and normal control groups might serve to show how much their differentiation had been affected both by recoveries among the former and by the appearance of new psychiatric illness among the latter. No model yet exists for the prediction of such trends. In the present enquiry, the existence of a general practice sampling frame offered the possibility of constructing such a model, and the sub-study here described was undertaken for that express purpose.

Design and method

Of the 15,000 patients in the original survey sample, 7,000 who had consulted during the survey year had *not* been thought to show any psychiatric disturbance. This

group constituted a suitable reservoir from which to draw controls for the follow-up study.

The aims of the enquiry were threefold:

1. To plot any significant changes in the clinical state of the psychiatric patients, over a three-year period.
2. To compare the psychiatric condition of these patients at follow-up with that of a demographically matched control group.
3. From this comparison to develop a simple endemiological model of neurotic illness in the community.

A group of eight of the original survey practices, with a total of 15 doctors, was selected. The chief requirements, which effectively precluded random selection of practices, were active co-operation and a high standard of medical record-keeping on the part of the practitioners concerned. Data were collected by the same procedure as in the main follow-up: First, the medical records were scrutinized and information abstracted about all consultations, specialist referrals and hospital admissions during the relevant period. Next, the practitioner was interviewed in order to check the medical records and to ascertain his views on each patient's psychiatric and general medical condition. Finally, a postal questionnaire was sent to each patient enquiring about his health and recent use of medical services.

The selection of patients was carried out as follows:

1. The original survey record cards were examined to find all those who had consulted with psychiatric symptoms during the first six months of the survey.
2. Since copies of the postal questionnaire had already been despatched to these patients in the course of the main enquiry, all who had completed and returned them were included in the index group.
3. Within each practice, an equal number of patients matched for age, sex and marital status was drawn from the pool of attenders with no reported psychiatric symptoms.
4. A copy of the postal questionnaire was sent to each selected control patient.

Results

Representativeness of the sample

The possibility of bias arose at each stage of the selection procedure. Nevertheless, comparison of the index group with its parent cohort suggested that the influence of any such bias was not great. Table I illustrates the effect on age and sex composition of the sample.

TABLE I

AGE-SEX DISTRIBUTION OF THE INDEX PATIENT GROUP COMPARED WITH THAT OF THE PSYCHIATRIC COHORT FROM WHICH IT WAS DRAWN EXPRESSED AS A PERCENTAGE

	Index patient group		*Parent cohort*	
Age-group	*Male*	*Female*	*Male*	*Female*
15–24	*1.2*	*5.9*	*3.0*	*6.2*
25–44	*10.6*	*27.7*	*12.6*	*25.2*
45–64	*13.5*	*29.4*	*12.5*	*25.7*
65 and over	*3.5*	*8.2*	*4.4*	*10.4*
TOTAL	*28.8*	*71.2*	*32.5*	*67.5*
No. of patients	49	121	664	1,385

Validity of the criterion groups

As part of the follow-up procedure, each general practitioner was asked to review his survey diagnoses in the light of subsequent developments. In only two instances did a practitioner retract his statement that a patient's symptoms were essentially psychiatric. Re-appraisal of the control group, on the other hand, produced some striking changes of opinion; no fewer than 31 of the 170 'normal'

patients were now considered to have been suffering from mild but long-standing neurotic conditions.

The clinical review thus pointed to a degree of overlap between the index and control groups which might tend to blur real distinctions, and which must therefore be borne in mind in considering any observed differences in outcome between the two groups. Meanwhile, the evidence of the medical records suggested that the index and control patients did in fact represent different populations. The point emerges most clearly from their differing use of medical services.

The total number of consultations recorded for the index group patients during the follow-up period was more than twice that for the control group; a highly significant difference. Smaller but still significant differences were observed between the two groups in relation both to specialist referral and to hospital admission over the three years. The statistical findings are set out in table II.

TABLE II

COMPARISON OF THE USE OF MEDICAL SERVICES DURING THE FOLLOW-UP PERIOD BY THE INDEX AND CONTROL GROUPS OF PATIENTS

Item of medical service	*Index group* (n=170)	*Control group* (n=170)
G.P. consultations		
Total	4,182	1,915
Mean	24.6	11.3
Standard deviation	21.1	8.5
(difference between means = 13.6; standard error = 1.7; t = 7.8; P <0.001		
Specialist referrals*		
Total	235	151
Mean	1.38	0.89
Standard deviation	0.91	0.94
(difference between means = 0.49; d = 4.25; P <0.001)		
Hospital admissions*		
Total	71	44
Mean	0.42	0.26
Standard deviation	0.70	0.50
(difference between means = 0.16; d= 2.53; P <0.02)		

*Since for both groups these variables had a value of zero in most instances, the significance of the differences between means was tested by the technique for a Poisson distribution (Bailey 1961).

Concordance of the outcome ratings

During the course of the follow-up interview, each doctor was asked to give his opinion of the current psychiatric state of both index and control patients. Subsequently, these assessments were compared with the patients' own perceptions of their health, as shown by the postal questionnaire responses. The most directly relevant section of the questionnaire was a check list of 20 medical complaints, four of which (sleeplessness, excessive worry, depression and irritability) were taken as indicators of psychiatric disturbance. The section had been completed by 167 (98.2 per cent) of the index group and 120 (70.6 per cent) of the controls. The agreement between the two sets of ratings is summarized in table III.

It can be seen that discrepancies occurred in 34 (20.3 per cent) of the index group and 16 (13.3 per cent) of the control group. The reasons could not be elicited in this enquiry, although it seemed likely that most of the discrepancies related to very mild or

borderline cases. Thus, 20 of the 28 'false negatives' were caused by patients having checked a single psychiatric symptom.

Clinical outcome for the index group

For operational purposes, patients were judged to have some psychiatric disturbance at follow-up if *either* their own doctors had assessed them as ill *or* if they reported two

TABLE III

GENERAL PRACTITIONERS' ASSESSMENTS AT FOLLOW-UP BY PATIENTS' SELF-REPORTING OF PSYCHIATRIC COMPLAINTS

Health questionnaire responses	*G.P. assessments*			
	Index group		*Control group*	
	Normal	*Abnormal*	*Normal*	*Abnormal*
No psychiatric symptoms	36	20	86	2
One or more psychiatric symptoms	14	97	14	18
TOTAL	50	117	100	20

or more psychiatric symptoms. Using this criterion, the proportion of recovered cases in the index group as a whole was found to be 46 out of 168 (27.4 per cent). This finding will be considered briefly in relation to diagnosis and duration of illness.

During the original survey, all psychiatric cases were allocated to one or more of ten diagnostic categories listed on the survey recording cards. At the follow-up interview, each diagnosis was reviewed in the light of the patient's subsequent history. For the purpose of this sub-study, the findings have been simplified by condensing the diagnostic groups and by ignoring all but the primary diagnosis in each case. The diagnostic distribution, together with the outcome at follow-up, is set out in table IV.

TABLE IV

CLINICAL STATE AT FOLLOW-UP BY DIAGNOSTIC GROUP IN PERCENTAGE

Clinical state at follow-up	*Psycho-somatic reactions*	*Depressive reactions*	*Mixed affective states*	*Anxiety states*	*Psychotic states*	*Character disorders*
Recovered	*60.0*	*45.0*	*22.7*	*20.7*	*14.3*	*8.3*
Persisting psychiatric disorder	*40.0*	*55.0*	*77.3*	*79.3*	*85.7*	*91.7*
No. of patients	40	20	22	63	7	12

Considerable variation is apparent between the diagnostic groups, the clinical outcome being relatively favourable for psychosomatic and depressive reactions, much less so for anxiety states and mixed affective disorders. These findings conform well with those reported for another sample of the survey population (Kedward and Cooper 1966).

Of the 170 index-group patients, 129 had been classed as chronic in the original survey; i.e., their disorders were thought to have been present for at least one year by the time of the key consultation. Six had illnesses of recent onset when the survey began and the remaining 35 developed new psychiatric illnesses during the course of the survey.

At follow-up, the outcome was found to differ markedly for these groups. Of the

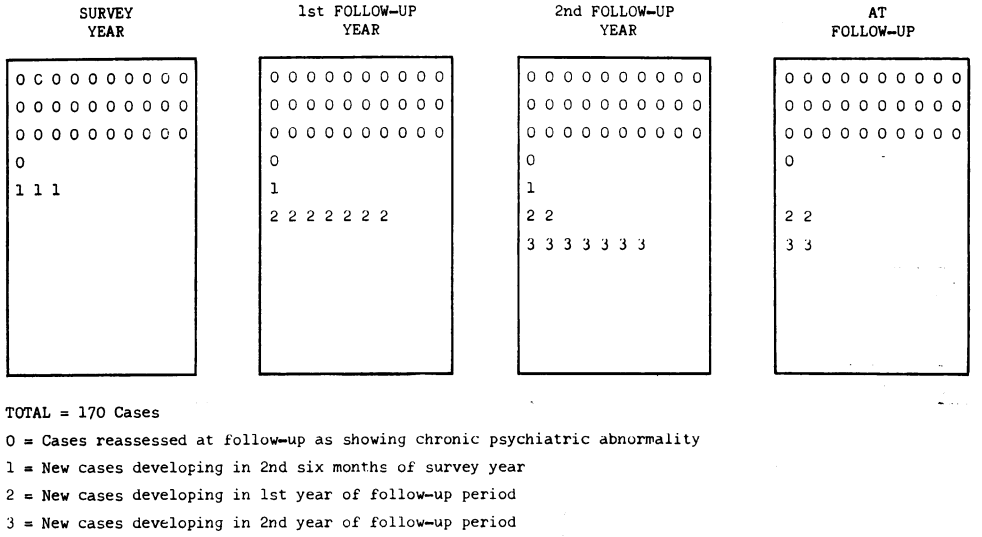
129 chronic patients, only 15 were judged to have recovered, while in two instances the original psychiatric diagnosis was withdrawn. The proportion who had recovered, therefore, was 15 out of 127 (11.8 per cent). Of the group with persisting symptoms, 91 (71.7 per cent) had been ill for at least five years and 51 (40.2 per cent) for at least ten years according to their medical records and the doctors' recollections.

The new and recent-onset cases presented a very different picture. At follow-up, 31 (75.6 per cent) were judged to have recovered, while ten were still ill. Of the former, 16 had recovered from the initial episode within two months and a further 14 within a year of onset. It appears, therefore, that the great majority of new psychiatric illness-episodes occurring in a general practice population are of relatively short duration.

Psychiatric morbidity in the control group

By definition, the 170 control patients had all consulted during the first six months of the survey period and had had no reported psychiatric disturbance during that time. When, however, the medical records of these patients were reviewed and discussed with their general practitioners at the follow-up interviews, evidence was found in 31 instances of chronic or recurrent neurotic ill-health extending back before the survey year. In other words, it seemed probable that these patients should have been identified as cases during the course of the original survey.

Closer examination of the case-material suggested a number of reasons for this discrepancy. Eleven patients had for years been known to their doctors as tense, worried individuals who tended to react sharply to life-stresses but who happened not to have suffered any exacerbations during the survey year. A further nine were thought to have mild character disorders of various types which either had not obtruded, or



TOTAL = 170 Cases

0 = Cases reassessed at follow-up as showing chronic psychiatric abnormality

1 = New cases developing in 2nd six months of survey year

2 = New cases developing in 1st year of follow-up period

3 = New cases developing in 2nd year of follow-up period

Figure 1—Control group: Psychiatric conditions manifested in the follow-up period

had simply not been recorded, during the survey. Finally, twelve patients suffered from chronic physical complaints (asthma, migraine, peptic ulcer, rheumatoid arthritis, obesity) which the practitioners had finally come to regard as psychosomatic. One may perhaps conclude that all these patients were border-line cases of a kind notoriously difficult to classify by means of a simple dichotomy. Nevertheless, the finding suggests a

degree of bias in the survey prevalence statistics due to under-reporting by the general practitioners.

The number of confirmed 'normals' in the control group was thus reduced from 170 to 139. Of these patients, three had developed new psychiatric episodes in the second half of the survey year, seven in the following year and seven in the final year of the follow-up period. Depressive reactions accounted for 12 of the 17 new cases. The majority were of short duration and at the time of follow-up only four of these patients were still suffering from psychiatric symptoms. The changing distribution of psychiatric morbidity in the control group as a whole is shown diagrammatically in figure 1.

As can be seen from table III these findings conformed well with the patients' responses to the health questionnaire. Of the 120 patients who had completed the questionnaire, 24 (20 per cent) were assessed as abnormal at follow-up either on the basis of their current medical treatment or because they had reported two or more psychiatric symptoms.

Discussion

The findings outlined above cannot be extrapolated to the general population, because the patient sample was unrepresentative in a number of ways. To begin with, the practices were all metropolitan and were not randomly selected. Secondly, since only patients who had consulted during the survey year were eligible for inclusion, the findings leave out of account a group comprising about one third of the patient population which may have been disproportionately healthy. Thirdly, comparison of the index patients (and hence, indirectly, of the matched controls) with the survey population as a whole revealed an excess among the former both of chronic cases and of patients over 45 years.

Despite these limitations, the results are of some interest for the light they throw on the natural history of neurotic illness. The prevalence of morbidity in a given population is a function of the rate of loss of cases through recovery, death and migration as well as of the rate of inception of new cases; if the prevalence of any disease remains constant these rates must balance. The present investigation yields an incomplete picture, since nothing is known about psychiatric morbidity among the non-consulting members of the patient population. Furthermore, the findings concern only the static section of the population; patients who died or moved away during the follow-up period were excluded from the analysis, as were those who joined the practices during this time. Nevertheless, a simple estimation reveals that within this static population the number of new cases approximately equals the number of recoveries. This can be shown by extrapolating the findings to the original survey population.

Over a three-year period, 46 confirmed recoveries occurred among 168 index patients, corresponding roughly to a recovery rate of 90 per 1,000 cases per annum. Over two-and-a-half years, the group of 139 control patients (after discarding 'false negatives') produced 17 new psychiatric cases, corresponding to an inception rate of 50 per 1,000 per annum.

The 9,000 patients who consulted during the survey year had been classified into 2,000 reported cases and 7,000 normals. It now seems probable, however, that the number of cases was an under-estimate, since of the present control group 31 patients (18 per cent) were subsequently re-classified as mild chronic cases. On this basis, the approximate numbers of cases and normals would have been more accurately estimated at 3,250 and 5,750 respectively.

With an inception rate of 50 per 1,000 at risk and a recovery rate of 90 per 1,000 declared cases, one would expect to find approximately 290 of the estimated 3,250 psychiatric patients recovering and 290 of the estimated 5,750 normal patients developing new psychiatric illnesses in each year.

These crude estimates tend to obscure the large differences in the rates of recovery for new and chronic cases respectively. In this investigation the recovered cases can be seen to have belonged preponderantly to the new and recent-onset group of the survey population. Only 15 out of 127 chronic cases had definitely recovered, as against 31 out of 41 new cases. Patients who had been ill for over five years contributed only 13 per cent of all recoveries despite the fact that they made up over half the index group. In terms of duration of illness these results suggest that approximately three quarters of new psychiatric illnesses recover within one year, whereas when the illness has lasted for over five years the chances of recovery within the next 12 months have fallen to about one in thirteen. Figure 2 provides a simple schematic model of the inter-change in a normal population.

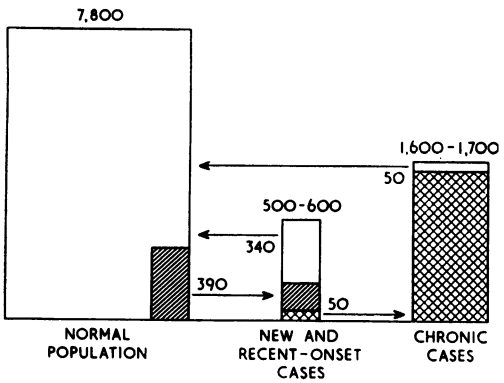


Figure 2—A simple model of the changing distribution of psychiatric morbidity during one year in a standard population of 10,000.

The findings suggest the possibility of distinguishing between two broad groups: on the one hand short-term illnesses of favourable prognosis, on the other chronic disorders with a relatively poor outcome. In this they are in agreement with the results of other general practice cohort studies (Kedward 1969, Cooper *et al* 1969) as well as with the meticulous survey of a Swedish population by Hagnell (1966).

There are two main implications. First, it is important to seek prognostic factors which would help to identify the potential chronic case at an early stage. For this purpose, comparisons must be made of the clinical and social characteristics of short-term recovered cases with those of the intractable chronic neurotic. Secondly, the appropriate lines of investigation and management for new illness-episodes may differ widely from those required for established chronic conditions. In relation to the former, precipitating events in the social environment may be crucial; whereas with the latter we are more likely to be confronted by long-standing social difficulties and ingrained patterns of faulty response. The indications for drug treatment, psychotherapy or social supportive action may vary accordingly.

Further longitudinal studies will be necessary for the evaluation of these different modes of treatment in community psychiatry. Meanwhile, reliable measures both of clinical severity and of functional impairment must be developed, so that the need for medical services can be assessed and changes in the patient's condition more accurately gauged. The findings of this enquiry also point to the need for a careful appraisal of such alternative screening procedures as general practitioner case-reporting and standardized complaint inventories, and of any discrepancies between them.

Summary

A three-year follow-up was undertaken of the members of an adult patient sample in eight London practices who had been identified as psychiatric cases in the course of six months. Those patients who at follow-up were still registered in the same practices and who had completed a questionnaire about their health were selected as the index group for a controlled study of morbidity-experience. The control patients, matched for sex, age and marital status, were drawn from the same patient sample but initially had no psychiatric disorder.

Assessment of the patients' psychiatric state was based on examination of the medical records, interviews with the general practitioners and a postal questionnaire

enquiry. The rates for consultation, referral and hospital admission were all significantly higher for the index group than for the controls.

Agreement between the practitioners' assessments and the patients' self-reporting of symptoms was fairly good. Using a combined rating, the proportion of recovered cases in the index group was found to be only 27 per cent, but this result appeared to be due in part to an initial excess of chronic cases among these patients. A diagnostic breakdown showed the outcome to be relatively favourable for psychosomatic and depressive reactions, but poor for anxiety states.

At follow-up, nearly one fifth of the control group were re-assessed by their doctors as suffering from mild chronic neuroses or character disorders. This finding suggests a degree of bias due to under-reporting in general practice prevalence surveys. Of the confirmed normal patients in the original cohort, one in eight had developed psychiatric disturbance at some point during the follow-up period, corresponding to an inception rate of about 50 per 1,000 per annum.

The hypothesis is confirmed that the psychiatric prevalence rate in a general practice population is accounted for by a large, slowly-changing group of patients with chronic disorders and a small, rapidly changing group of patients with new and recent-onset episodes. The implications of these findings are discussed.

Acknowledgements

This study was undertaken as part of a research programme under the direction of Professor Michael Shepherd, and supported by the Nuffield Foundation. We are grateful to the following general practitioners whose co-operation made the work possible: Drs J. Hewetson, P. Hopkins, S. Lee, J. McEwan, W. B. Mumford, E. M. Rosser, J. E. Scriven, A. Spier, R. Stowe, L. E. Wall, T. H. Warburton.

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