Institutionalisation and the Outcome of Functional Psychoses

EVE C. JOHNSTONE, D. G. C. OWENS, C. D. FRITH and LOUIE M. CALVERT

Summary: The outcome in patients receiving long-term in-patient care for manic-depressive psychosis was compared with that in long-stay schizophrenic in-patients and discharged schizophrenic patients. The manic-depressive and schizophrenic in-patients differed in terms of positive and negative features and in the pattern of behaviour, but were equally cognitively impaired. The pattern of behaviour in both schizophrenic groups was the same. The results offer some support for the use of outcome as a validating criterion for the diagnosis of schizophrenia.

For over eighty years (Kraepelin 1919, 1921) it has been considered that functional psychosis may be divided into two main classes: affective and schizophrenic. Although this view has dominated studies of the disorders throughout this century, there is still no biological marker for either condition, and their diagnoses are made on the basis of the clinical picture. In doing so, one may take into account both the clinical features of an individual psychotic episode or episodes and the longitudinal course of the condition over a period of years, although in first psychotic episodes and in some other circumstances, the longitudinal course of the condition cannot be considered. The diagnosis is then made essentially on the basis of the patient's description of his mental experiences, but the reliability of diagnoses made this way is low (Beck *et al*, 1962; Kreitman *et al*, 1961; Spitzer & Fleiss, 1974). When agreed diagnostic criteria and structured interviewing methods are used, reliability can be greatly enhanced (Cooper *et al*, 1972; Leff, 1977), but the diagnosis produced depends of course on the rules applied. For example, in the Present State Examination (Wing *et al*, 1974) certain features are considered to be diagnostic of schizophrenia, and if they are present that diagnosis will be made. On the other hand, if DSM III (American Psychiatric Association, 1980) is used, affective elements may override these features and thus produce a diagnosis of depression or mania.

Aside from the question of reliability, then, the question of validity is important—i.e. is whether the diagnosis is a predictor of some independent variable such as outcome or response to treatment. Outcome has been the main focus of interest in this respect—a poor outcome, in terms of incomplete social recovery or persistent symptoms, is considered to be a validation of the diagnosis of schizophrenia. Somewhat in conflict with this concept, which considers that the development of persistent psychological and social impairment is a clinical feature of schizophrenia and indeed is central to that diagnosis, is the view that such impairments are partly the result of institutional care (Wing & Brown, 1970). The possibility that institutional care may interact with the deficits of schizophrenia and intensify the social withdrawal and lack of motivation of patients with this disorder has been considered (Myerson, 1939; Martin, 1955), but the idea has been expressed (Barton, 1959) that these abnormalities may develop in anyone who lives for prolonged periods in such environments. If this were so, there would be serious implications for the value of a poor outcome as a validating criterion for schizophrenia.

The present study follows two earlier ones which considered the outcome of schizophrenia. The first of these concerned in-patients receiving long-term care for schizophrenia (Owens & Johnstone, 1980) and the second study was of a group of schizophrenic patients who had been discharged from hospital (Johnstone *et al*, 1981). A third group of patients, who conformed to diagnostic criteria for manic-depressive psychosis but were receiving long-term in-patient care in the same hospital (and indeed the same wards) as the schizophrenic in-patients, was then studied. In this paper, the groups are compared particularly in terms of a detailed assessment of their behaviour; the nature of the three groups allows us to consider the relative contributions of a schizophrenic diagnosis and long-term institutional care to the development of particular types of outcome.

Method

Three groups of patients have been studied

(a) The in-patient schizophrenic sample
This sample consists of all patients in Shenley Hospital who conformed to the St. Louis (Feighner *et al*, 1972) criteria for schizophrenia and who had been in hospital

continuously for at least one year. At the time of the study, there were 1,227 in-patients in Shenley Hospital, and 510 of them were included in this sample, which has been described in detail elsewhere (Owens & Johnstone, 1980).

(b) The out-patient schizophrenic sample

This sample consists of the patients who were discharged from Shenley Hospital between 1.1.70 and 31.12.74 and conformed to the St. Louis criteria for schizophrenia. In this sample, which has been described in detail elsewhere (Johnstone et al, 1981), there were 120 patients, of whom 105 were traced.

(c) The in-patient manic-depressive sample

These patients were identified at the same time as those in the in-patient schizophrenic sample. Of the 1,227 in-patients in Shenley Hospital at that time, 47 fulfilled the St. Louis criteria for primary affective illness. Five patients died in hospital and a further 13 were discharged before they could be examined, so that the sample consisted of 29 patients.

The method of examination was essentially the same in all three groups. Hospital case notes were scrutinised for historical details and past physical treatments, which were recorded on the In-patient Schizophrenia Survey Form (Owens & Johnstone, 1980), and for the features of the illness at its worst, which were recorded in terms of the Syndrome Check List of the Present State Examination (Wing et al, 1974). In the case of the manic-depressive patients, items concerning treatment appropriate to affective illness were added to the record of past physical treatments. The information obtained from the case notes is subsequently referred to as 'recorded information'.

The patients were assessed in terms of their current mental state, intellectual functioning, current behavioural performance, and neurological status. These variables are subsequently referred to as 'assessed abnormalities'. The mental state was assessed using the rating scale for chronic psychosis devised by Krawiecka et al (1977) and as in the in-patient schizophrenic sample (Owens & Johnstone, 1980), hallucinations, delusions, incongruity of affect, and incoherence of speech taken together were referred to as positive symptoms or features, and flattening of affect, and poverty of speech/muteness taken together were referred to as negative symptoms or features. Cognitive function was assessed using the Withers & Hinton (1971) test battery (modified by a reduction to three in the number of attempts allowed at the Babcock sentence); behavioural performance was assessed using the Current Behavioural Schedule —CBS— (Owens & Johnstone, 1980), and neurological status was assessed using the Scheme for Brief Neurological Assessment (Owens & Johnstone, 1980). This neurological assessment recorded only motor function and the presence or absence of movement disorder; more extensive assessments were conducted subsequently and details of all neurological aspects will be described elsewhere. The CBS is completed by clinicians and was devised to record, in a standardised way, information given by the nurses (or in the case of out-patients, those living with the patient),

about the patient's behaviour over the previous six months. There are of course many rating scales for long-stay patients (Hall, 1980) but none of these was entirely suitable for our purpose, as we wished to record the opinion of those constantly with the patients about the presence of various psychopathological features, in addition to their description of the patient's behaviour: thus our own rating was devised, although it was partly based upon the behaviour rating scale of Wing (1961). The CBS is shown in the Appendix. A total score may be derived, and this has been used as a global index of impairment (Owens & Johnstone, 1980; Johnstone et al, 1981), but as the score concerns various aspects of behaviour which may be unrelated to one another—social behaviour, reduced activity, overactivity, antisocial acts, exhibited abnormal behaviour, incontinence, stability of behaviour —it is clear that similar total scores may be achieved by patients whose patterns of behaviour are very different. The current behavioural schedule ratings used in the present study were completed by ECJ and DGCO. The inter-rater reliabilities for the total score and the sub-scores ranged from +0.98 to 1.0.

The material presented here consists of a description of the recorded information and assessed abnormalities in the manic depressive cases, a comparison of these findings with those of the schizophrenic in-patients, a comparison between all three groups of patients in terms of the elements of the current behavioural schedule, and an assessment of the determinants of these elements

Results

(1) The manic-depressive sample

(a) Basic data and recorded information

This sample consisted of 25 females and 4 males. Twenty-three patients conformed to the St. Louis criteria for primary affective disorder: mania and primary affective disorder: depression; four patients had had only depressive episodes and two patients only manic episodes. One patient died in a drowning accident before she could be interviewed and two others would not co-operate with the interview. The patients had a mean age of 67.9 (SD 11.6) years, had been continuously in hospital for a mean of 14.4 (SD 10.4) years, had a mean of 5.8 (SD 5.2) admissions at the time of the index admission, and their mean age at first admission was 39.5 (SD 16.8) years. Perhaps because of the older age at which these patients were first admitted, compared with the schizophrenic in-patients (Owens & Johnstone, 1980), the history of their early life was not always complete. The information that we did obtain was as follows:— in three cases, there was a history suggestive of birth trauma and in three cases a history of fits. The academic history of seven patients was not stated, one patient had higher academic attainments, and the remainder were of average ability. In ten patients there was a family history suggestive of affective psychosis, involving a total of at least 22 persons, including four suicides. One patient had a history of schizophrenia in one relative, as well as a history of affective psychosis affecting several relatives. Three patients had had insulin treatment, but none had been leucotomised; 24 had been treated with

ECT and 27 with neuroleptic drugs 14 had had lithium treatment, ten were known not to have had it, and in five cases this was uncertain because of poorly described out-patient treatment. Similarly, 14 cases were known to have had tricyclic antidepressant drugs, one had not had such drugs, and in the remaining cases this point could not be determined.

The features of the illness at its worst were recorded by applying the syndrome check list of the Present State Examination to the case-notes. The Catego sub-classifications were affective (MN+; PD+; RD+:) in 21 cases, mixed affective and schizophrenic (DP?/AP?; NSMN/DSMN; NSPD) in four cases; schizophrenic (DS+; NS+) in three cases, and one case was classed as catatonic syndrome (CS+).

(b) Assessed abnormalities

Five of the patients showed no abnormalities at all when their mental states were assessed in terms of the Krawiecka (1977) scale, and a further five achieved minimal scores which were not clearly morbid. One patient was floridly manic, being over-cheerful, over-talkative, and very disinhibited at interview. These abnormalities are not rated on the Krawiecka scale and because of them, the patient could not be persuaded to co-operate with questions regarding delusions and hallucinations. We could be confident that this man did not have negative symptoms (flattening of affect, poverty of speech), but positive symptoms (delusions, hallucinations, incoherence of speech, incongruity of affect) could not be rated, and this particular patient was omitted from this part of the assessment; otherwise, all ratings were completed in every patient. The mean score on positive symptoms was 1.52 (SD 2.8) and on negative symptoms 0.96 (SD 1.34). The distribution of the scores are illustrated in Figure 1. The Krawiecka scale also rates depression, anxiety, and retardation, and the scores on these vriables were also low (depression mean = 1, SD 1.3; anxiety mean = 0.6 SD 1.1, retardation mean = 0.65, SD 1.1).

The mean score on the Hinton & Withers (1971) scale was 37.28 (SD 25.25) and the wide range is illustrated in Figure 2. In an earlier study (Johnstone et al, 1978), we obtained a control group of ten patients receiving long-term in-patient care for severe physical disease of which cerebral involvement was not a feature. The mean age of this group was 63.1 (SD 13.4) years and their mean duration of hospitalisation was 23.7 (SD 18.3) years. The Hinton & Withers score in this sample was 78.1 (SD 17.3). The score of the manic depressive patients was significantly lower (P <0.0001), although the ages of the two groups were not significantly different. Behavioural performance in terms of the CBS was assessed in all 29 patients. The mean score 37.7 (SD 8.5) and the comparable figures in the 26 patients who were completely assessed were 38.1 (SD 8.3). The range of scores is shown in Fig 2.

(c) Relationships between assessed abnormalities and recorded information and between various items of assessed abnormality

There were very few associations. Patients who had had large amounts of neuroleptic drugs in the past had higher
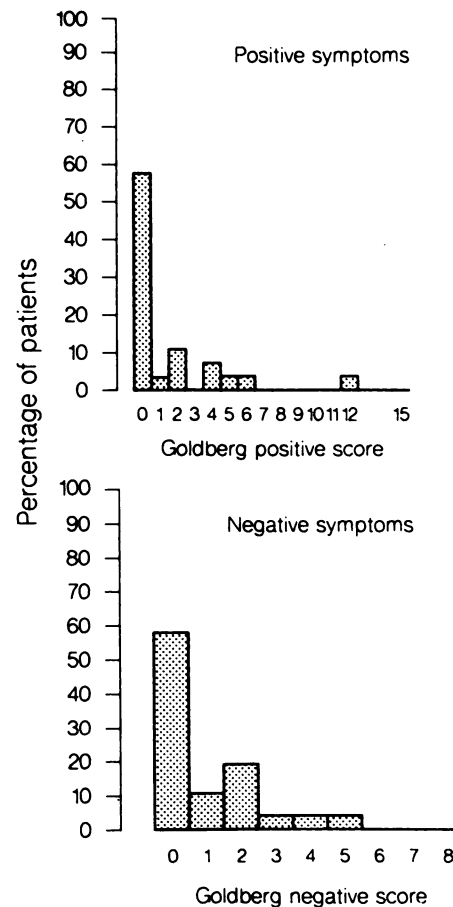

FIG. 1   Distribution of positive and negative in manic depressive in-patients (Goldberg positive = total positive features on Krawiecka (1977) scale; Golgberg negative = total negative features on Krawiecka (1977) scale.

positive symptom scores than those who had had smaller amounts (F(1,20 = 4.91, P <0.05). There was a significant relationship (r = 0.7 0, P <0.01) between low Hinton & Withers score and low CBS, but otherwise no significant associations.

(2) Comparison of these findings with the in-patient schizophrenic sample

The ages, lengths of illness, and assessed abnormalities in the in-patient schizophrenic and in-patient manic depressive patients are shown in Table I.

Age and length of illness were significantly associated with the assessed abnormalities in the schizophrenic sample and correction was made for the difference in these variables before assessed abnormalities in the two groups were compared. For those measures that were approximately normally distributed, analysis of covariance was
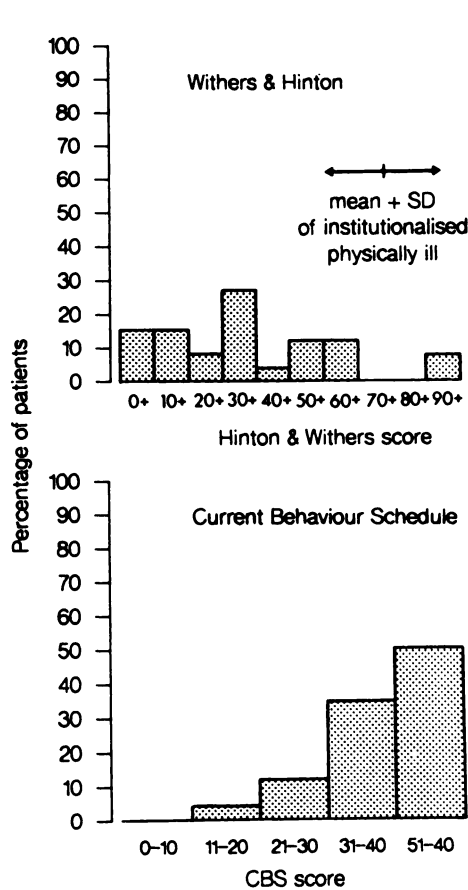
FIG. 2 Distribution of Withers and Hinton scores and Current Behavioural Schedule scores in manic depressive in-patients.
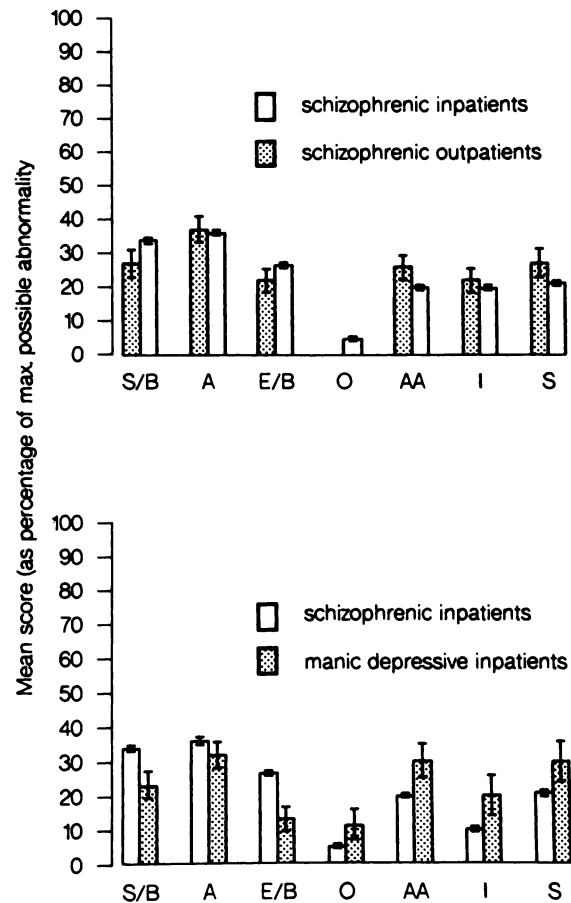

FIG. 3 Comparison of individual items of Current Behavioural Schedule in a) schizophrenic in-patients and out-patients and b) schizophrenic in-patients and manic depressive in-patients.
S/B = social behaviour; A = Activity; E/B = Exhibited behaviour;
O = Overactive; A/A = Antisocial acts;
I = Incontinence; S = Stability.

TABLE I

Comparison of schizophrenic in-patients and manic-depressive in-patients

	Schizophrenic in-patients (270 M: 240 F)	Manic depressive in-patients (3 M: 26 F)
Age*	59.2±13.9	67.9±11.6
Length of illness	31±11.1	27.9±14.8
Positive features	3.6± 3.5	1.52± 2.83
Negative features	2.4± 2.3	0.96± 1.4
CBS	34.7± 8.3	37.7 ± 8.3
H & W	44.6±25.3	37.38±25.25

* Significant difference P <0.001

used with age and length of illness as the covariates. However, many of the measures were not normally distributed or were categorical in nature. For these measures, four-way contingency tables were constructed from the factors: diagnosis (schizophrenic, manic/depressive), age, length of illness, and the measure of interest (e.g. anti-social acts). The relationships between these factors were then estimated, using log linear models. A test of the partial association between factors was calculated as the difference between the full model and that which excluded only the specified effect. There was then no significant difference in the CBS or the Withers & Hinton score, but the manic-depressive patients had significantly lower scores than the schizophrenic patients in positive symptoms $(F(1,479) = 9.61, P <0.002)$ and negative symptoms $(F(1,480) = 3.89, P <0.05)$. Because

TABLE II

Comparison between groups in terms of individual items of current behavioural schedule (corrected for differences in age and length of illness)

	In-patient schizophrenics v in-patient manic-depressives	In-patient schizophrenics v out-patient schizophrenics
Impaired social behaviour	N.S.D.	N.S.D.
Impaired activity	N.S.D.	N.S.D.
Exhibited abnormal behaviour	MD <IPS χ^2 (df 2) = 5.94; P <0.05	N.S.D.
Overactivity	MD >IPS χ^2 (df 1) = 7.29; P <0.01	OPS <IPS χ^2 (df 1) = 3.60; P <0.10
Antisocial acts	MD >IPS χ^2 (df 1) = 5.98; P <0.05	N.S.D.
Incontinence	MD >IPS χ^2 (df 2) = 10.00; P <0.01	N.S.D.
Lack of stability of condition	MD >IPS χ^2 (df 2) = 7.88; P <0.02	N.S.D.

of the marked difference in sex distribution between the two samples, the results were recalculated for females alone, but this gave a similar result to that of the total sample. Thus, the manic- depressive in-patients had significantly less abnormality in terms of negative and positive schizophrenic features than the schizophrenic in-patients, but the groups resembled one another in terms of the Hinton & Withers score. This result contrasts with the comparison corrected for age and length of illness between the schizophrenic in-patients and the discharged schizophrenic patients, where it was found that the groups resembled one another in terms of positive and negative symptoms, but that the schizophrenic out-patients had significantly less impairment in Withers & Hinton score (Johnstone *et al*, 1981).

(3) Comparison of in-patient manic depressives, in-patient schizophrenics, and discharged schizophrenics in terms of the elements of the current behavioural schedule

All three groups had scores on the CBS which did not significantly differ, but as noted above, this scale is composed of a number of elements which may not relate to one another. The elements giving rise to the abnormality represented in the total CBS score did appear to differ between the groups.

When the differences in age and length of illness were taken into account, it was found that there was very little difference between the schizophrenic out-patients and in-patients, but that there were significant differences between manic-depressive and schizophrenic patients on a majority of items (Table II).

(4) Determinants of the elements of the current behavioural schedule

Relationships were then sought between the elements of the current behavioural schedule and the items of recorded information and assessed abnormalities in all three groups. Incontinence was excluded from this comparison because physical issues relevant in these

populations had not been assessed. CBS elements were not related to any items of recorded information in either the manic-depressive in-patients or the discharged schizophrenic in-patients. In the larger in-patient schizophrenic sample, some significant associations were found. Impairment of social behaviour (P <0.001) and activity (P <0.05) were more severe in those with a history of fits. Antisocial acts and instability were more severe in leucotomised patients (both P <0.05). There was an association of both overactivity (P <0.05) and instability (P <0.0001) with greater neuroleptic ingestion. In this population, length of illness was positively associated with impaired social behaviour (P <0.01), and negatively associated with antisocial acts (P <0.02) and instability (P <0.01). The relationships between CBS elements and assessed abnormalities in all three groups are shown in Table III.

Discussion

Although one of the main points on which manic-depressive psychosis was originally separated from schizophrenia (Kraepelin, 1919, 1921) was the relatively favourable outcome, a number of previous studies have shown that a proportion of manic-depressive patients do become chronically incapacitated. This was noted both before (Steen, 1933; Fuller, 1935) and after (Bratfos & Haug, 1968; Shobe & Brion, 1971) the introduction of modern physical treatments.

In the present study, the small number of manic-depressive, as compared with schizophrenic patients receiving long-term in-patient care points to the rarity of this outcome. Such an outcome is often used as a validation of the diagnosis of schizophrenia and this, together with the fact that

TABLE III

Relationships between individual items of Current Behavioural Schedule and assessed abnormalities in manic-depressives (M/D), out-patient schizophrenics (OPS) and in-patient schizophrenics (IPS)

	Positive features on Krawiecka (1977) scale	Negative features on Krawiecka (1977) scale	Withers & Hinton (1971)
Social behaviour	M/D P <0.05 +ve OPS NS IPS NS	M/D NS OPS NS IPS P <0.001 +ve	M/D P <0.05 +ve OPS IPS P <0.001 +ve
Activity	M/D NS OPS P <0.05 −ve IPS NS	M/D NS OPS NS IPS P <0.001 +ve	M/D P <0.02 +ve OPS P <0.05 +ve IPS P <0.001 +ve
Exhibited abnormal behaviour	M/D P <0.002 +ve OPS P <0.01 +ve IPS P <0.001 +ve	M/D NS OPS NS IPS NS	M/D NS OPS P <0.05 +ve IPS P <0.05 +ve
Overactivity	M/D NS OPS NS IPS NS	M/D NS OPS NS IPS P <0.05 +ve	M/D NS OPS NS IPS NS
Antisocial acts	M/D P <0.05 +ve OPS NS IPS P <0.01 +ve	M/D NS OPS NS IPS NS	M/D NS OPS NS IPS NS
Lack of stability of behaviour	M/D NS OPS P < 0.01 +ve IPS NS	M/D NS OPS NS IPS NS	M/D NS OPS NS IPS NS

+ve refers to association between impairment on both scores regardless of direction of score.
−ve = the reverse

the 29 manic-depressive patients are clearly very unusual, places the affective diagnosis given to these patients under question. However, in the majority of these instances, the illnesses at the time of the index admission conformed to two sets of criteria for affective illness. In addition, the history of multiple previous episodes, the preponderance of women, the family histories of affective illness, and the relatively late age at index admission would all support a manic-depressive diagnosis in these cases. If it is accepted that the diagnosis of affective illness was appropriately made at one time in these cases, the well established (Lewis & Pietrowski, 1954) phenomenon of apparent manic-depressive illness being succeeded by the development of schizophrenia must be considered. This development is described in between 3% and 14% of cases in follow-up studies of large numbers of manic depressive patients (Rennie, 1942; Lundquist, 1945; Astrup *et al*, 1959; Bratfos & Haug, 1968). In the present study, the development of typically schizophrenic features was not recorded, and the low scores on both positive and negative features derived on examination support the idea that the illnesses in these patients have not become schizophrenic in form.

The principal finding of the study is that when age and length of illness were taken into account, manic-depressive in-patients resembled schizophrenic in-patients in terms of cognitive function

ing, but differed from them in terms of positive and negative features and in the majority of behavioural items assessed. As noted above, this result contrasts with the comparison of schizophrenic in-patients and discharged schizophrenic patients (Johnstone *et al*, 1981).

While it is established that depressed mood is associated with reduced performance on cognitive testing (Sternberg & Jarvik, 1976), the mean depression score of these patients at the time of testing did not reach morbid levels (Krawiecka *et al*, 1977). Although the fact that 12% of the schizophrenic in-patients had always performed poorly in academic terms was considered of possible relevance to their poor performance on the Withers & Hinton score (Johnstone *et al*, 1981), this explanation cannot be advanced in the manic-depressive sample, in whom there is no known history of poor academic ability. Their low score on cognitive testing must represent a deterioration in performance. Such a deterioration is not generally considered to be a feature of manic depressive illness, although Bratfos & Haug (1968) found that 11% of their sample of manic-depressive patients were demented during follow-up, and Astrup *et al* 959) found that a picture of dementia supervened in 5 out of 96 cases.

It is possible that additional dementing illness might have coincidentally developed in the manic-depressive patients in the present study, but this is

not a plausible explanation for their need for protracted in-patient care, as the duration of the index admission in these cases is of approximately 15 years. The fact that both the manic-depressive and schizophrenic in-patients perform badly on cognitive testing, while schizophrenic patients living at home do not, appears to support the idea that the conditions of institutional life predispose to such poor performance. Against this is the fact of the good performance of the institutionalised physically ill, who had been receiving continuous in-patient care for at least as long as the schizophrenic in-patients; these patients, although they had no particular advantages of education or background, were housed in a private hospital for the chronically sick. It is possible, although this was not obvious to the investigators, that the environment in which they lived, as well as being more luxurious than a Health Service mental hospital, was also more conductive to the retention of intellectual skills. Their performance does indicate that even very protracted institutional care need not be associated with cognitive decline. A second possible explanation for the poor performance of the in-patients is that it is in those patients with functional psychosis in whom cognitive impairment is a feature that in-patient care will be required.

If the results of cognitive testing offer some support for the idea that institutionalisation may account for the poor performance of in-patients, the same cannot be said for the results concerning positive and negative features and the items of the current behavioural schedule, which demonstrate that while there are almost no significant differences between schizophrenic in-patients and out-patients, the differences between schizophrenic and manic-depressive in-patients are very substantial. They indicate that as far as these items are concerned it is the nature of the diagnosis rather than the circumstances in which the patients live that are important.

When tested on the items of the current behavioural schedule, the manic-depressive patients showed significantly more over-activity, instability of behaviour, and aggressive antisocial behaviour. They had less 'exhibited abnormal behaviour' (a term used to describe incoherence of speech and evidence of delusions and hallucinations) and there was a trend for them to show less inactivity and impaired social behaviour. Thus, after a mean of over 14 years of in-patient care in wards mainly occupied by patients with chronic schizophrenia, the abnormalities of behaviour demonstrated by these patients are characterised by features of instability and disturbance of mood and

motor activity, rather than by either behaviour suggestive of delusions and hallucinations or the apathy and withdrawal characteristic of the schizophrenic defect state. If it is accepted that in using the term 'dementia' Kraepelin (1921) did not refer solely to cognitive functioning, then the findings of this study are in keeping with his observations regarding the outcome of manic-depressive psychosis. "Usually all morbid manifestations completely disappear; but where that is exceptionally not the case only a rather slight peculiar psychic weakness develops which is just as common to the types we have taken together as it is different from dementias in diseases of other kinds."

Acknowledgements

Appendix
Current Behaviour Schedule

Identification: Survey number
Date of inquiry

Name of patient _____

Name of informant _____
How long has informant known patient:
years (2), months (1), weeks (0)

Status of informant _____
NB. Scale refers to behaviour over past 6 months

A: Social Behaviour
Spontaneous contacts
Patient initiates full sensible conversations (2)
Patient initiates brief sensible verbal exchanges (1)
(any spontaneous coherent remark or request no matter how simple)
No sensible spontaneous contacts (0)

Response to approaches
Patient will engage in full sensible conversations (2)
Patient makes appropriate, but limited verbal responses (1)
Patient does not respond appropriately or patient does not respond at all (0)

Ability to carry out instructions
Carries out complex instructions (2)
(complex—refers to tasks involving a number of steps)
Carries out simple instructions (1)
(simple—refers to tasks involving one step)
Does not carry out instructions (0)
General social behaviour
Table Manners
    Acceptable (2)
    Poor—untidy or clumsy eating (1)
    Very degraded—requires to be fed or very degraded bahaviour e.g. spits out food, plays with partially masticated food (0)

Dressing
    Acceptable (2)
    Poor—requires some supervision to give acceptable presentation (1)
    Degraded—requires assistance with all aspects of dressing (0)
Cleanliness
    Acceptable (2)

Poor—makes a limited attempt at personal hygiene (1)
Very degraded—makes no attempt at personal hygiene (0)

Appearance (dress etc.)
Normal (2)
Slightly odd (appearance is not normal but is not unequivocally bizarre) (1)
Bizarre (appearance strikingly and obviously abnormal and would be so to average lay observer) (0)

Social withdrawal
Mixes normally (2)
Usually solitary, but will mix (1)
Never mixes (0)

B: Activity
Employment

In-patients
  4) Open employment outside hospital
  3) Sheltered employment outside hospital
  2) Work outside ward
  1) Work on ward
  0) No work

Out-patients

Non-housewives	Housewives
4) Open employment	4) Competant in cases where outside work would not be expected e.g. mothers of young children; older women
3) Sheltered employment	3) Competant but in cases where outside work might be expected
2) No employment-but does moderate work at home	2) Limited competance
1) No employment-minimal work at home	1) Minimal competance
0) No employment contributes nothing to running of home	0) Contributes nothing to running of home

Leisure activities
Will participate in activities involving others e.g. outings, socials, club house (2)
Not above but will participate in solitary activities e.g. T.V., newspaper, solitary walks (1)
No activities (0)

General level of activity
Keeps active without encouragement (2)
Some underactivity (e.g. stays in bed) (1)
Gross underactivity (0)

Nature of activity
Activity mostly useful (2)
Some purposeless activity (1)
All activity purposeless (0)

C: Overactivity

Not overactive as below (1)
Activity conducted with excessive speed and energy sustained for at least 1 hour per day (0)

D: Exhibited Abnormal Behaviour
Does the patient ever laugh or mutter to himself
  Never (2)
  Some days (1)
  Every day (0)
Hallucinations
  No evidence (2)
  Indirect evidence—(conclusion that hallucinations are

present is inferred from patients behaviour) (1)
  Direct evidence—(patient talks about the fact that he e.g. hears voices) (0)

Delusions
  No evidence (2)
  Indirect evidence—(conclusion that delusions are present is inferred from patients behaviour and conversation (1)
  Direct evidence—(patient directly speaks of his abnormal beliefs) (0)

Posturing and mannerisms (e.g. odd, stylised movements or acts, maintaining strange postures, etc.)
  Never (2)
  Some days (1)
  Every day (0)

  Specify_____

Obsessional activities (e.g. repetitive and apparently purposeless behaviours includes checking, counting, hoarding)
  Never (2)
  Some days (1)
  Every day (0)

  Specify_____

Does the patient talk nonsense (N.B. refers to incoherence and not content)
  Never (2)
  Some days (1)
  Every day (0)

E: Antisocial Acts
Antisocial behaviour (absconding, exhibitionism, verbal hostility, non-verbal hostility, stealing, destruction, self-mutiliation)
  Specify
  None (3)
  Occasional (2)
  Frequent but mild (1)
  Frequent and severe (0)
  Where occasional $<$ 1/month: frequent $\geqslant$ 1/month
  Severe – act causes damage to persons or property, causes significant distress to others or necessitates specific action other than physical restraint
  Mild – act take place but none of above occurs

Uncontrolled, aggressive outbursts (requiring a period of physical restraint)
  Never (2)
  Occasional ($<$ 1/month) (1)
  Frequent ($\geqslant$ 1/month) (0)

F: Incontinence
  Never (3)
  Occasional urinary (at least once a month) (2)
  Frequent urinary (at least twice a week) (1)
  Urinary and faecal incontinence (0)

G: Stability of Behaviour
  Very stable (2)
  Some variation (1)
  Much variation (0)

H: Medication – (additional item not included in comparisons or totals)

Does the patient take medication
Without difficulty (2)
With some difficulty (1)
With great difficulty (0)
What is the current medication _____

References

AMERICAN PSYCHIATRIC ASSOCIATION (1980) Diagnostic and statistical manual of mental disorders (3rd edition). Washington, D.C.: APA.

ASTRUP, C., FOSSUM, A. & HOLMBOE, R. (1959) A follow-up study of 270 patients with acute affective psychoses. *Acta Psychiatrica Scandinavica* Suppl. 135.

BARTON, R. (1959) Institutional Neurosis. Bristol: John Wright.

BECK, A. T., WARD, C., MENDELSON, M., MOCK, J. & ERBAUGH, J. (1962) Reliability of psychiatric diagnoses: a study of consistency of clinical judgement and ratings. *American Journal of Psychiatry*, **119**, 351-357.

BRATFOS, O. & HAUG, J. O. (1968) The course of manic-depressive psychosis. *Acta Psychiatrica Scandinavica*, **44**, 89-112.

COOPER, J. E., KENDELL, R. E., GURLAND, B. J., SHARPE, L., COPELAND, J. R. M. & SIMON, R. (1972) Psychiatric Diagnosis in New York and London Maudsley Monograph, No. 20. London: Oxford University Press.

FEIGHNER, J. P., ROBINS, E., GUZE, S. B., WOODRUFF, A., WINOKUR, G. & MUNOZ, R. (1972). Diagnostic criteria for use in psychiatric research. *Archives of General Psychiatry*, **26**, 57-63.

FULLER, R. G. (1935) What happens to mental patients after discharge from hospital. *Psychiatric Quarterly*, **9**, 95-104.

HALL, J. N. (1980) Ward rating scales for long-stay patients: a review. *Psychological Medicine*, **10**, 277-288.

JOHNSTONE, E. C., OWENS, D. G. C. GOLD, A., CROW, T. J. & MACMILLAN, J. F. (1981) Institutionalisation and the defects of schizophrenia. *British Journal of Psychiatry*. **139**, 195-203.

KRAEPELIN, E. (1919) Dementia Praecox and Paraphrenia. Translated by R. M. Barclay reprinted in 1971, New York: R. E. Krieger.

—— (1921) Manic-depressive insanity and Paranoia. Translated by R. M. Barclay, edited by G. M. Robertson. Edinburgh: Livingston

KRAWIECKA, M., GOLDBERG, D. & VAUGHAN, M. (1977). A standardised psychiatric assessment for rating chronic psychotic patients. *Acta Psychiatrica Scandinavica*, **55**, 299-308.

KREITMAN, N., SAINSBURY, P., MORNSSEY, J., TOWERS, J. & SCRIVENER, J. (1961) The reliability of psychiatric assessment: an analysis. *Journal of Mental Science*, **107**, 887-908.

LEFF, J. P. (1977) International variations in the diagnosis of psychiatric illness. *British Journal of Psychiatry*. **131**, 329-338.

LEWIS, N. D. C. & PIETROWSKI, Z. A. (1954) Clinical diagnosis of manic-depressive psychosis. In: *Depression* (eds. Hoch, P. H., Zubin, J.) New York: Grune and Stratton.

LUNDQUIST, G. (1945) Prognosis and course in manic-depressive psychosis. *Acta Psychiatrica Scandinavica Suppl, 35*.

MARTIN, D. (1955) Institutionalisation. *Lancet*, **ii**, 1188-1190.

MYERSON, A. (1939) Theory and principals of the 'total push' method in the treatment of chronic schizophrenia. *American Journal of Psychiatry*, **95**, 1197-1204.

OWENS, D. G. C. & JOHNSTONE, E. C. (1980) The disabilities of chronic schizophrenia: their nature and the factors contributing to their development. *British Journal of Psychiatry*. **136**, 384-395.

RENNIE, T. A. C. (1942) Prognosis in manic-depressive psychosis. *American Journal of Psychiatry*. **98**, 801-814.

SHOBE, F. O. & BRION, P. (1971) Long-term prognosis in manic-depressive illness. *Archives of General Psychiatry*, **24**, 334-337.

SPITZER, R. L. & FLEISS, J. L. (1974) A re-analysis of the reliability of psychiatric diagnosis. *British Journal of Psychiatry*. **125**, 341-347.

STEEN, R. R. (1933) Prognosis in manic depressive psychosis. *Psychiatric Quarterly*, **7**, 419-429.

STERNBERG, D. E. & JARVIK, M. E. (1967) Memory Functions in Depression. *Archives of General Psychiatry*, **33**, 219-224.

WING, J. K. (1961) A simple and reliable subclassification of chronic schizophrenia. *Journal of Mental Sciences*, **107**, 862-875.

—— & BROWN, G. W. (1970 Institutionalisation and Schizophrenia. London: Cambridge University Press.

—— COOPER, J. E. & SARTORIUS, N. (1974) The description and classification of psychiatric symptoms: An instruction manual for the PSE and Catego systems. Cambridge: Cambridge University Press.

WITHERS, E. & HINTON, J. (1971) Three forms of the clinical tests of the sensorium and their reliability. *British Journal of Psychiatry*. **119**, 1-8.

.

*Eve C. Johnstone, MD. FRCP. FRCPsych. *Member of Scientific Staff and Honorary Consultant Psychiatrist*

D. C. G. Owens, MRCP. MRCPsych. *Member of Scientific Staff and Honorary Consultant Psychiatrist*

C. D. Frith, MA. DipPsych. PhD. *Member of Scientific Staff*

Louie M. Calvert, MRCPsych. *formerly Registrar in Psychiatry, Northwick Park Hospital and Clinical Research Centre. (Present address, Consultant Psychiatrist, St. Fintan's Hospital, Portlaoise, Co. Laois, Ireland)*

Northwick Park Hospital, Clinical Research Centre, Watford Road, Harrow, Middlesex, HA1 3UJ

*Correspondence