British Journal of Psychiatry (1988), **153**, 163–167

A Century of Delusions in South West Scotland

A. D. T. ROBINSON

Two groups of patients admitted to psychiatric hospital in Dumfries were studied, drawn from the periods 1880–1889 and 1970–1979. Feighner criteria were applied to make three diagnostic categories – depression, mania and schizophrenia – and the occurrence and content of delusions were noted for each. A significant decline in the prevalence of delusional depressive illness was found between the two periods, and a similar trend was noted for delusional manic illness. In contrast, the prevalence of delusional schizophrenic illness was stable. This decline is taken to reflect a change in the phenomenology of affective illness since last century in South West Scotland. The content of delusions is also discussed.

Delusion and madness have been synonymous since time immemorial (Jaspers, 1962), but although delusions have been symptoms of importance in diagnosis, until recently they have not been found to have prognostic significance. For example, a study of depressed patients from before the period when physical methods of treatment were introduced found little difference in prognosis between a group with delusions and one without (Lewis, 1936). Similarly, when physical methods were used, the outcome in depression was not found to be influenced by the presence of delusions (Sargent & Slater, 1954). However, since tricyclic antidepressants have been used in the treatment of depression and since lithium has been used in the treatment of mania, the importance of distinguishing patients with affective disorder into delusional and non-delusional has stimulated interest in delusions, as patients with delusional affective disorder seem to respond less well to these treatments (e.g. Glassman & Roose, 1981; Young *et al*, 1983; Nelson *et al*, 1984). Delusional patients have also been found to differ from non-delusional patients in several biochemical parameters (Meltzer *et al*, 1976; Maas *et al*, 1980; Van Praag, 1986). This interest in assessing patients on the basis of the presence of delusions in order to choose more appropriate therapy has been occurring against a backdrop of a falling incidence of schizophrenia and affective psychoses, at least in admissions to Scottish hospitals (Eagles & Whalley, 1985), despite evidence that delusional depression is as prevalent now as it was at the end of the last century (Eagles, 1983). Such a picture should make delusional depressives more prominent in in-patient populations and contradicts the clinical impression gained by Kraupl Taylor (1979) that delusional depressions have become less common lately.

The objectives of this study were to determine whether the prevalence of delusional depressive in-patients has changed since last century; to assess prevalence of delusional mania over time, and to compare the prevalence of the delusional affective psychoses and delusional schizophrenia; and to describe changes in the content of delusions.

Method

Two samples of in-patients were studied, one historical and one current, both drawn retrospectively from case-notes. The historical sample was drawn from the case-books of the Crichton Royal Institution and of the Southern Counties Asylum. The former was a private institution, while the latter was supported by the parishes for the treatment of paupers. The period 1880–1889 was chosen for study as the case-books compiled at that time were of a high quality. The full account for each admission contained the Sheriff's warrant (the majority of in-patients were formal), accounts of the history of the presenting complaint and mental state examination, some remarks on the family history and an opinion on the supposed exciting cause of the illness. In addition, there was a space on the admission form for classifying each patient according to Skae's nosology; but this was seldom used, perhaps because the classification itself had proved controversial (e.g. Browne, 1875; Clouston, 1876; Anon, 1877). The continuation notes were also available for corroboration of the presence of a delusion at or before admission in any cases where there was doubt from the admission notes. No delusion formed after admission was included.

The current sample was drawn from the in-patient case-notes of the Crichton Royal Hospital (which was formed by the amalgamation of the Crichton Royal Institution and the Southern Counties Asylum) for the period 1970–1979. These case-notes did not follow a systematic printed form but were written freely. They included the presenting complaint, an account of its history, some details of family and personal history, past illnesses (both mental and physical) and a drug history. A separate mental state

TABLE I

Frequency of delusions in Feighner-assigned psychiatric illness at Crichton Royal Hospital by decade

Illness	*Decade*	*Males*				*Females*			
		Not deluded		*Deluded*		*Not deluded*		*Deluded*	
		n	%	n	%	n	%	n	%
Depression	1880–1889	13	22	47	78	24	23	80	77
	1970–1979	40	69	18	31	135	81	31	19
Mania	1880–1889	4	11	31	89	20	38	33	62
	1970–1979	7	44	9	56	10	53	9	47
Schizophrenia	1880–1889	2	10	18	90	0	0	25	100
	1970–1979	4	10	36	90	6	15	35	85

TABLE II

Patients with major psychiatric illness per 100 000 population at risk in terms of delusions, period, sex and age-group

Diagnosis	*Sex*	*Age group*	*Patients per 100 000 population at risk*		*Deluded patients per 100 000 population at risk*	
			1880–1889	*1970–1979*	*1880–1889*	*1970–1979*
Depression	M	18–49	10.0	4.5	8.3	1.5*
	M	50+	22.6	20.6	17.9	6.2
	F	18–49	13.8	25.0*	11.4	4.3*
	F	50+	31.2	31.3	22.9	6.3*
Mania	M	18–49	5.3	1.8	4.7	0.3*
	M	50+	15.0	4.8	13.1	3.8
	F	18–49	10.9	3.3*	6.5	1.8
	F	50+	7.0	2.9	5.1	1.1
Schizophrenia	M	18–49	5.6	11.5	5.0	10.3
	M	50+	0.9	1.0	0.9	1.0
	F	18–49	5.2	8.5	5.2	7.3
	F	50+	3.2	4.9	3.2	4.5

*$P<0.001$ (chi-squared test)

examination was included and the physical examination was recorded on a separate form.

For the period 1880–1889 all case records were examined, but for 1970–1979 only those for patients with ICD-9 codings (World Health Organization, 1978) 295 to 298, 300.4 and 311. The first admission of each patient during the period of study was taken as the index admission for those who were 18 years and over and had an address within the current catchment area of Crichton Royal Hospital. The criteria of Feighner *et al* (1972), whose operational criteria have well-established reliability (e.g. Woodruff *et al*, 1974; Hesselbrock *et al*, 1982), were applied to determine diagnosis, and full (non-partial) delusions were defined and recorded according to the Present State Examination (PSE), which classifies delusions into 22 distinct categories (Wing *et al*, 1974). In addition, the case-note diagnosis at the time of admission was recorded.

Results

Frequency of delusions

In order to reduce the risk of spurious positive results when making many comparisons, a significance level of $P>0.004$ is used in reporting these findings (see Grove & Andreasen, 1982).

The frequency of delusions in depression, mania and schizophrenia is shown in Table I. Among depressives of both sexes, there has been a marked decrease over time in the proportion with delusions ($\chi^2=115.7$, d.f. 1, $P<0.001$). Among patients with mania and schizophrenia, the changes were found not significant.

However, there has been a significant decrease over time in the number of patients with delusions in the mood-governed disorders compared with the increase in

TABLE III
Nineteenth century diagnoses compared with those of Feighner et al

Feighner category	*Dementia*	*Delusional insanity*	*Emotional insanity*		*Mania*	
			Melancholia	*Mania*	*Acute mania*	*Chronic mania*
Depression[1]	2 (2M)	1 (1M)	140 (59M, 81F)	10 (2M, 8F)	3 (2M, 1F)	1 (1M)
Mania[2]	2 (1M, 1F)	—	—	53 (19M, 34F)	26 (13M, 13F)	—
Schizophrenia[3]	4 (1M, 3F)	13 (7M, 6F)	2 (2M)	14 (3M, 11F)	6 (1M, 5F)	—

1. Seven omitted who had no contemporary diagnosis.
2. Seven omitted who had no contemporary diagnosis.
3. Six omitted who had no contemporary diagnosis.

patients with delusional schizophrenia ($\chi^2 = 45.51$, d.f. 2, $P < 0.001$).

A comparison of the rates per 100 000 population at risk for total in-patients and deluded in-patients in terms of age and sex is shown in Table II. The denominators were calculated as an intercalated mean using the relevant censuses.

Depression. Examining the changes in the rates for total depressed in-patients reveals only one significant change, an increase since last century in younger females. For the deluded depressed, there has been a significant fall in the rates in all categories except older males, where the decrease does not reach significance.

Mania. There has been significant fall in the rates for total younger female manics and deluded younger male manics.

Schizophrenia. There have been no significant changes in the rates over time for either total schizophrenia or deluded schizophrenics, although in all categories the rates have risen this century.

Nineteenth century diagnoses. Diagnoses in use last century are shown in Table III. The categories of mental illness are those found in a contemporary manual of psychological medicine (Bucknill & Tuke, 1874). No one historical diagnosis has a modern equivalent, although mania from the Feighner classification corresponds reasonably well to the mania of emotional insanity together with acute mania.

Content of delusions

Depression. There were no significant changes in the content of the delusions between 1880–1889 and 1970–1979, although delusions of persecution are now commoner in females than they were (39% now compared with 26% then). Delusions of guilt are quite common, being found now in one-third of deluded males and one-quarter of deluded females.

Mania. Comparing the changes between periods reveals none that is significant. About half of deluded manics have grandiose delusions, and at least a quarter have delusions of persecution.

Schizophrenia. There have been no significant changes over time, although comparison is difficult as there are many categories of delusions. For both periods delusions of a persecutory nature were found in about half of patients. Delusions of control were found only in males.

Discussion

Studies involving in-patient populations, particularly when the sample groups are widely separated in time, can be affected by many biases. Admission to hospital will be influenced by diagnosis, available treatment options, financial considerations, legal requirements, geographical distance, and bed occupancy.

That these influences have led to some of the changes noted in this study is undeniable, but it seems likely that the finding of a fall in the rate of delusional affective illness represents a true decrease over time. The trend found for mania, although not statistically significant, does mirror the change found in depression, where patient numbers were greater. This is in contrast to the findings in schizophrenia. Changes in diagnostic fashions are not likely to be an influence here because of the use of strict criteria (Morrison *et al*, 1972). There is, of course, a possibility that earlier diagnosis and treatment this century might play a role in the amelioration of symptoms, but as seen above there is no pharmacological evidence for this and early diagnosis was an ideal striven for by clinicians last century (Kesteven, 1881). Nevertheless, the first Physician Superintendant of Crichton Royal Institution, Dr Browne,

had argued that while early admission was associated with a better prognosis, for a number of reasons admission for chronic patients was sometimes delayed. One factor was the distance from outlying areas; however, by the period of study a railway line had been built. Also involved were the financial implications for paupers, who were often kept at home because they helped with the farm. However, private patients might also have had their admission delayed, "firstly from the feelings of the families . . . and secondly from the conduct of the medical men, who generally seem to think it their duty first to exhaust all other means in their power" (Browne, 1857). The Act of 1857 was drafted to overcome some of these difficulties.

Financial considerations were provided for by the parishes last century so that all who needed admission were not impeded on financial grounds. Only 5% of mental patients were in private houses or in the Wigtown Poorhouse in Stranraer and it seems unlikely that these would have been seriously disturbed (e.g. General Board of Lunacy, 1880, 1887). The relative numbers of patients in each Feighner category in the private and the pauper hospitals were analysed for the period 1880–1885: no significant differences were found, although relatively more depressed females were in the pauper hospital. For the period 1970–1979 there were no other psychiatric facilities available within the region.

The law influenced admission last century to a greater extent than this century, as the 1857 Lunacy Act (Public General Acts, 1857) required all admissions to mental hospital in Scotland to be formal. In practice, during the period 1880–1889 some patients were informal, e.g. 14% of admission in 1885 (Rutherford, 1886). It was, however, an offence not to report chronic mental illness of duration greater than one year. Thus the Lunacy Commission became aware of all chronic mental illness. The formality surrounding assessment for hospital admission last century might be expected to deter the presentation of patients with acute undramatic illness. As such it should depress the patient numbers for last century. The possible constraint of too few beds was a greater problem during the 1880s, with overcrowding in the Southern Counties Asylum mentioned in most annual reports. Taken together, these various considerations would suggest that the nineteenth century rates should be lower than those for the present, whereas the findings for depression and mania point to the opposite.

The stability of the rates for schizophrenia may be accounted for in the following ways. Although schizophrenia (or its equivalent last century) is a new illness not found commonly prior to the nineteenth century (Hare, 1986), only recently has a fall in first admissions been noted (Stromgren, 1987). Additionally, while both industrial and rural areas have experienced some of the changing influences postulated as important in the individual's response to the schizophrenic illness – namely, specialisation of work roles and social functions, increasing size of communities in the larger towns, and differential survival effects upon vulnerable individuals – rural areas may not have been as greatly affected: the rural communities, though smaller, have remained self-sufficient longer and the concepts of mental illness may have changed more slowly (Cooper & Sartorius, 1977).

Examination of the changing concepts of mental illness held by the medical profession, in particular its nosology, helps to explain the differences in classification. Bucknill & Tuke (1874) viewed dementia as a state in which intellectual power had been destroyed. Delusional insanity was a state where marked delusion was present and might have a melancholy character, an exalted character or a destructive character (e.g. homicidal or suicidal). Emotional or moral insanity broadly followed delusional insanity but without the presence of delusion. Mania was a state of general mental excitement or exaltation. There are, in addition, differences in the definitions of phenomenology. The distinctions between hallucinations, illusions and delusions are not as clear as those in current use (e.g. PSE), and, while delusions were equated with false beliefs, it was believed to be possible by judicious reasoning to convince the patient of the absurdity of his belief.

As regards the content of delusions in 1880–1889, in depression the content is similar to that found by Eagles (1983) in a population of in-patients in Edinburgh. Similarly, in manics the content of delusions is similar to that found by Taylor & Abrams (1973) in a population of in-patients in New York.

The content of delusions among the schizophrenic patients, although covering many categories, is similar to that found for schizophrenic patients at Graylingwell Hospital (Lucas *et al*, 1962). There was, however, an absence of sexual themes, which were present in the delusions of 40% of schizophrenics at Graylingwell and at the Maudsley (Klaf & Hamilton, 1961).

The high prevalence of paranoid delusions in both schizophrenia and affective disorder is striking. The theories of the pathogenesis of delusions are many (Arthur, 1964; Melges & Freeman, 1975), and although delusions with identical content may not necessarily have the same psychological structure (Freeman, 1981), the influences of mood, personality,

and culture are important (Berner, 1975). It is possible that this culture with its strong Covenanter tradition is suspicious of any unwarranted outside interference in its affairs. This attitude may be reflected in the delusions of its mentally unwell.

Acknowledgements

I am very grateful to the records staff under Mrs Walker at Crichton Royal Hospital. Thanks are also due to Professor Kreitman and Dr E. H. Hare for their helpful comments on the manuscript.

References

ANON (1877) Skae's Classification of Mental Diseases. *Journal of Psychological Medicine and Mental Pathology*, **2**, 195–237.

ARTHUR, A. Z. (1964) Theories and explanations of delusions: a review. *American Journal of Psychiatry*, **121**, 105–115.

BERNER, P. (1975) Present status of research on delusions. *Psychiatria Clinica* (Basel), **8**, 1–13.

BROWNE, J. (1875) Skae's Classification of Mental Diseases: a critique. *Journal of Mental Science*, **21**, 339–365.

BROWNE, W. A. F. (1857) In *Appendix to the Report by Her Majesty's Commissioners* (eds Scottish Lunacy Commission). Edinburgh: HMSO.

BUCKNILL, J. C. & TUKE, P. H. (1874) *A Manual of Psychological Medicine*, 3rd edn. London: J. & A. Churchill.

CLOUSTON, T. S. (1876) Skae's Classification of Mental Diseases. *Journal of Mental Science*, **21**, 532–550.

COOPER, J. & SARTORIUS, N. (1977) Cultural and temporal variations in schizophrenia: a speculation on the importance of industrialization. *British Journal of Psychiatry*, **130**, 50–55.

EAGLES. J. M. (1983) Delusional depressive in-patients, 1892–1982. *British Journal of Psychiatry*, **143**, 558–563.

—— & WHALLEY, L. J. (1985) Decline in the diagnosis of schizophrenia among first admissions to Scottish mental hospitals from 1969–78. *British Journal of Psychiatry*, **146**, 151–154.

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

FREEMAN, T. (1981) On the psychopathology of persecutory delusions. *British Journal of Psychiatry*, **139**, 529–532.

GENERAL BOARD OF LUNACY (1880) *Twenty-second Annual Report of the General Board of Commissioners in Lunacy for Scotland*. Edinburgh: Neill & Co.

—— (1887) *Twenty-ninth Annual Report of the General Board of Commissioners in Lunacy for Scotland*. Edinburgh: Neill & Co.

GLASSMAN, A. H. & ROOSE, S. P. (1981) Delusional depression: a distinct clinical entity? *Archives of General Psychiatry*, **38**, 424–427.

GROVE, W. M. & ANDREASEN, N. C. (1982) Simultaneous tests of many hypotheses in exploratory research. *Journal of Nervous and Mental Disease*, **170**, 3–8.

HARE, E. (1986) Aspects of the epidemiology of schizophrenia. *British Journal of Psychiatry*, **149**, 554–561.

HESSELBROCK, V., STABENAU, J., HESSELBROCK, M., MIRKIN, P. & MEYER, R. (1982) A comparison of two interview schedules. *Archives of General Psychiatry*, **39**, 674–677.

JASPERS, K. (1962) *General Psychopathology*. Translated from German, 7th edn, by J. Hoenig & M. W. Hamilton. Manchester: Manchester University Press.

KESTEVEN, W. B. (1881) On the early phases of mental disorder. *Journal of Mental Science*, **27**, 189–193.

KLAF, F. S. & HAMILTON, J. G. (1961) Schizophrenia – a hundred years ago and today. *Journal of Mental Science*, **107**, 819–827.

KRAUPL-TAYLOR, F. (1979) *Psychopathology: its Causes and Symptoms*, revised edn. Sunbury-on-Thames: Quartermaine House.

LEWIS, A. J. (1936) Melancholia: prognostic and case material. *Journal of Mental Science*, **82**, 488–558.

LUCAS, C. J., SAINSBURY, P. & COLLINS, J. G. (1962) A social and clinical study of delusions in schizophrenia. *Journal of Mental Science*, **108**, 747–758.

MAAS, J. W., KOSLOW, S. H., DAVIS, J. M., KATZ, M. M., MENDELS, J., ROBINS, E., STOKES, P. E. & BOWDEN, C. L. (1980) Biological component of the NIMH Clinical Research Branch collaborative program on the psychology of depression: 1. Background and theoretical considerations. *Psychological Medicine*, **10**, 759–776.

MELGES, F. T. & FREEMAN, A. M. (1975) Persecutory delusions: a cybernetic model. *American Journal of Psychiatry*, **132**, 1038–1044.

MELTZER, H. Y., CHO, H. W., CARROLL, B. J. & RUSSO, P. (1976) Serum dopamine-B-hydroxylase activity in the affective psychoses and schizophrenia. *Archives of General Psychiatry*, **33**, 585–591.

MORRISON, J., CLANCY, J., CROWE, R. & WINOKUR, G. (1972) The Iowa 500 – I. Diagnostic validity in mania, depression and schizophrenia. *Archives of General Psychiatry*, **27**, 457–461.

NELSON, W. H., KHAN, A. & ORR, W. W. (1984) Delusional depression, phenomenology, neuroendocrine function and tricyclic antidepressant response. *Journal of Affective Disorders*, **6**, 297–306.

VAN PRAAG, H. M. (1986) Biological suicide research: outcome and limitations. *Biological Psychiatry*, **21**, 1305–1323.

PUBLIC GENERAL ACTS 1857 LUNACY ACT (SCOTLAND). London: G. E. Eyre and W. Spottiswoode.

RUTHERFORD, J. (1886) *Crichton Royal Institution, Dumfries, 46th Annual Report for the Year 1885*. Dumfries: Courier and Herald Offices.

SARGENT, W. & SLATER, E. (1954) *An Introduction to Physical Methods of Treatment in Psychiatry*, 3rd edn. Edinburgh: E. & S. Livingstone.

STROMGREN, E. (1987) Changes in the incidence of schizophrenia? *British Journal of Psychiatry*, **150**, 1–7.

TAYLOR, M. A. & ABRAMS, R. (1973) The phenomenology of mania: a new look at some old patients. *Archives of General Psychiatry*, **29**, 520–522.

WING, J. K., COOPER, J. E. & SARTORIUS, N. (1974) *Description and Classification of Psychiatric Symptoms*. London: Cambridge University Press.

WOODRUFF, R. A., GOODWIN, D. W. & GUZE, S. B. (1974) *Psychiatric Diagnosis*. New York: Oxford University Press.

WORLD HEALTH ORGANIZATION (1978) *Mental disorders: Glossary and Guide to their Classification in Accordance with the Ninth Revision of the International Classification of Diseases*. Geneva: WHO.

YOUNG, R. C., SCHREIBER, M. T. & NYSEWANDER, R. W. (1983) Psychotic manic. *Biological Psychiatry*, **18**, 1167–1173.

A. D. T. Robinson, MB, ChB, MRCPsych, *MRC Unit for Epidemiological Studies in Psychiatry, University Department of Psychiatry, Royal Edinburgh Hospital, Morningside Park, Edinburgh EH10 5HF*