Prognosis and Outcome in a Cohort of Patients with Non-affective Functional Psychosis

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Summary. Over a period of 3 years since the first in a lifetime onset of an episode of non-affective functional psychosis a cohort of 82 Dutch patients was studied at set intervals with regard to prognosis and outcome. Prognostic statements on remission, relapse, duration of episode, length of stay in hospital, and occupational, family and overall social adjustment were checked against actual outcome after 1 year. In general, the research team of three psychiatrists, a psychologist and a sociologist began quite optimistically, but became slightly more pessimistic with time. However, their predictions proved hardly better than chance statements. The team appeared to be more pessimistic about the diagnosis of schizophrenia than about that of reactive psychosis, although they were not correct with one diagnostic category more often than with the other.

Key words: Schizophrenia – Prognosis – Outcome and process assessment

Introduction

A psychiatrist's prediction of the outcome of mental illness after he has diagnosed it is important because it will determine the nature of his therapeutic intervention. The prediction should be conditioned by at least the following: his awareness of scientific evidence concerning the outcome of that particular class of disorder, and of the influence of a variety of factors on its natural course in general. In addition, his personal experience may have taught him to take into account less well established factors.

Everything depends on the predictive validity of the diagnostic class under consideration. But in his prognosis of outcome in individual cases, a psychiatrist's diagnostic bias and other attitudes, e.g. of remaining hopeful, could largely overrule the scientific facts known to him, resulting in discrepancies between his collective predictions for a cohort of cases and their overall outcome at follow-up.

While during the past decade diagnostic procedures have greatly improved in reliability and validity (Wing et al. 1981), the correctness of prognostic assessments by psychiatrists has received little attention. We located very few prognostic studies in Dutch journals during the past decade and none in international ones. We will refer to them in the discussion.

Formulating a prognostic statement on each individual case in a cohort of patients admitted for the first time in their life because of non-affective functional psychosis (ICD 295, 297 and 298.3–9) was part of the WHO Collaborative Study on the Assessment and Reduction of Psychiatric Disability. The Dutch team participating in the study was particularly interested in this aspect, because in the Netherlands the concept of reactive or psychogenic psychosis with a rather favourable outcome is quite popular, while schizophrenia is diagnosed with great hesitation because of its generally poor outcome (Wiersma et al. 1983). In this paper we will present the results of the prognostic study with special regard to the following questions:

1. Which factors concerning the patient are related to the formulation of a favourable or unfavourable prognosis.

2. To what extent did the prognostic statements concerning outcome prove correct at 1, 2 and 3 years after the onset of disease.

3. Which factors appear to be related to a correctly predicted outcome.

4. In which cases is the forecast either too pessimistic or too optimistic.

The WHO Collaborative Study

The data were derived from the WHO Collaborative Study on the Assessment and Reduction of Psychiatric Disability, which was initiated in 1976 to explore the applicability, reliability and validity of a set of instruments and procedures designed to evaluate impairments and disabilities in a population of patients with potentially severe mental disorders. Follow-up assessments provided information on the evolution of impairments and disabilities in different socio-cultural settings, and served to detect predictors of levels of social functioning (Jablensky et al. 1980). The study aimed to accumulate a cohort of consecutive new patients who came from a geographically circumscribed area and were suffering from functional psychosis of a non affective type. Screening criteria were:

(a) age 15–44 years;

(b) residence in one of two neighbouring provinces, Groningen and Drenthe, in the north of the Netherlands, with a population aged 15–44 years of 420,136;

(c) no evidence of organic brain disease (including epilepsy), severe mental retardation, severe sensory defects, alcohol or drug dependency;

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(d) presence of at least one of the following symptoms: hallucinations, delusions of the non-affective type, bizarre or grossly inappropriate behaviour, thought and speech disorder other than retardation or accelaration;

(e) recent onset of psychotic illness: i.e. not more than 24 months prior to our screening of the files at the institutions which supplied the cohort.

The selection of cases depended on the type of institution collaborating in the study. There are four mental hospitals, six psychiatric units in general hospitals including the University Department of Psychiatry, and two social psychiatric services with out-patient clinics in various locations in the two provinces. We asked the services to extract from their files all first admissions with a clinical diagnosis of schizophrenia (ICD 295), paranoid state (ICD 297) or other non-organic psychosis (ICD 298.3-9), while applying the criteria for residence and age. A previous history of admission or contact for other psychiatric reasons — e.g. neurotic state — was not a reason for excluding a patient. One of the psychiatrists of the research team went to each of the institutions to examine the case notes of the patients selected by the services. This second screening served to ascertain that the cases selected concerned first episodes of non-affective psychosis without evidence of an organic basis. Several patients selected by a social psychiatric service were also reported to us by a mental hospital following their referral. Only 1 patient avoided admission altogether. The cases were selected from April 1978 to December 1979, during which period approximately 230 patients were reported to the research team. The secondary screening yielded an eventual total of 100 cases, all of whom had a recent onset of psychotic symptoms. The majority of excluded patients were chronic cases whose illnesses dated back many years. Finally, 82 patients participated in the first assessment as 18 refused to cooperate.

The research team consisted of three psychiatrists, a sociologist and a psychologist. The three psychiatrists were all trained in the psychodynamically oriented Department of Psychiatry of the University of Groningen and they had respectively 4, 5 and 11 years of clinical experience; the team made their own diagnostic assessment of the patients. Towards the end of the 3-year follow-up 41 patients had a final diagnosis of schizophrenia or paranoid state and 41 patients of other non-organic psychosis (including 1 patient finally reclassified as affective psychosis; ICD 296).

The glossary which belongs to ICD 9th version, provided us with the diagnostic criteria for this study.

Prognostic Procedure

The interval between the outbreak of psychosis and the first assessment varied among patients, from a few weeks to just over 1 year. Because of this, at first assessment patients could differ in the duration of their psychosis or stay in hospital, some had already recovered and had been discharged. After all psychiatric and social data had been collected, the research team met to discuss and decide on diagnosis and prognosis until the next assessment in 12 months time, when diagnosis and prognosis were verified against outcome. We had to select precoded statements on remission of current psychotic symptoms (yes/no), relapses in case a patient was no longer psychotic (yes/no), duration of psychotic symptoms over the coming 12 months (none/up to 1 month/1-3 months/3-6 months/6-9 months/9-12 months), time the patient was expected to stay in hospital (same categories as duration of symptoms), and occupational, family (satisfactory/mildly/seriously impaired) and overall social adjustment in 12 months time (no change/improvement/deterioration). At these sessions we distinguished between current mental state (psychotic or not), current diagnosis (reactive or schizophrenic psychosis), and main diagnosis describing the total course.

This procedure was repeated after each assessment. Due to refusals, deaths (suicide) and a fourth round involving only a few patients, we could only verify our prognostic statements on 77 patients after their first assessment, on 63 patients after their second assessment and on 12 patients after their third assessment. Each prognostic statement was checked against actual outcome after 1 year. The statement on occupational and family adjustment concerned only patients with an employable status (excluding housewives and students) or living in a family.

Findings

Our predictions covering 1 year at a time are presented in Table 1, which shows numbers of patients for which they were made and percentages with a favourable prognosis according to the research team. The much more detailed variables concerning

Table 1. Three consecutive prognostic statements on a cohort of patients with non-affective functional psychosis

Prognostic statement on	Assessment					
	First		Second		Third	
	(n)[a]	% favourable	(n)	% favourable	(n)	% favourable
Remission	(41)	80	(21)	43	(4)	50
Recurrence	(35)	83	(42)	81	(8)	75
Duration of present episode	(77)	65	(63)	63	(12)	67
Time in hospital	(77)	29	(63)	70	(12)	50
Occupational adjustment	(46)	50	(41)	41	(6)	50
Family adjustment	(49)	24	(38)	39	(7)	57
Overall social adjustment	(77)	69	(63)	37	(12)	33
Total	(402)	55	(331)	55	(61)	38

[a] n: number for which predictions were made

Table 2. Prognostic statements at first assessment according to situation at that time

Situation at time of first assessment	Prognostic statement at first assessment						
	Remission (yes/no)	Recurrence (no/yes)	Duration psychotic sym. (brief/long)	Time in hospital (brief/long)	Occupational adjustment (favour./unfavour.)	Family adjustment (favour./unfavour.)	Overall social adjustment (favour./unfavour.)
Time since onset of psychosis (brief/medium/long)	0.43	–	–	–	0.31	–	0.25
Duration previous episodes (brief/medium/long)	0.40	–	0.34	0.28	0.46	–	–
No. previous episodes (none/at least one)	–	–	–	0.22	–	–	–
Stay in hospital (brief/medium/long)	(0.24)	–	–	0.18	–	–	–
In hospital (no/yes)	–	–	0.34	0.61	0.40	0.37	-0.47
On neuroleptics (no/yes)	–	–	0.46	0.42	0.32	0.52	-0.30
Current mental state (not psychotic/psychotic)	–	–	0.65	0.40	0.26	0.42	-0.32
Current diagnosis (react./schizophr. psychosis)	0.49	–	0.41	0.47	(0.31)	–	0.35
Main diagnosis (react./schizophr. psychosis)	0.43	(0.29)	0.33	0.42	0.37	0.32	–
Social disability (none/mild/serious)	0.55	(0.26)	0.50	0.42	0.42	0.46	–

prognosis were mostly dichotomised for this and the following tables. With regard to duration of the psychotic episode and time in hospital, for example, we considered less than 1 month favourable; while in the case of adjustment satisfactory functioning or any improvement was called favourable. Table 1 shows that we began this excercise with a good deal of optimism, except with regard to time in hospital and family adjustment. At the second assessment we became more pessimistic with regard to remissions and overall social adjustment, but otherwise differences were minimal. The small numbers in the third assessment precluded much in the way of conclusions.

Table 2 gives the relationship between some characteristics of patients – except age and sex which did not make any difference – and expected outcome for the different prognostic variables. Since correlations often concerned a different number of cases, the actual coefficients do not immediately inform the reader about the statistic significance of the correlation. In Table 1 we have given Kendall's correlation coefficients which are significant at the 5% level. Coefficients in brackets are above 0.20 but not significant, all others (–) are below that level. Predictions of recurrence did not correlate with any of the characteristics of patients at first assessment and predictions of a remission apparently reflected a patient's past history. Current and main diagnosis seemed to influence our predictions, and the same applied to patients' disability at the time of first assessment. We predicted improvement of patients' overall disability if they were still psychotic or in hospital or using neuroleptics at the time of first assessment.

Significant correlations between predictions at the second assessment and characteristics of the patients at that time were somewhat greater in number and in strength; they ran along the same lines. With regard to prognosis we seemed to distinguish between two diagnostic classes, both in the main and current diagnosis. However, it remains to be shown that these diagnostic classes have any predictive validity.

Table 3 presents the crux of this investigation, and shows at a glance that our predictions proved hardly better than chance statements, also corroborated by the values of Cohen's kappa, a measure of agreement to correct for chance. The impression is that they improved slightly with time, especially as to duration of episode, length of time in hospital and family adjustment. Scrutiny of the variables presented in Table 2 for their correlation with a correct first prognosis revealed very few significant relationships.

In predicting the duration of psychotic episodes we were more often wrong where older patients were concerned. A long lapse between the onset of psychosis and our first assessment, as well as a long first psychotic episode, more often led to an incorrect prediction of remission. Presence of psychotic symptoms at the time of the first assessment was related to an incorrect prediction of the time which a patient would spend in hospital. Current schizophrenic symptomatology at first assessment was related to an incorrect prediction of social disability, and a main diagnosis of schizophrenia to an incorrect prediction of the duration of psychotic episodes. In other words, few characteristics of the patients seemed to have been incorporated in correct predictive statements of

Table 3. Percentage of correct prognostic statements about next 12 months at three consecutive assessments.

Prognostic statement on	Assessment							
	First			Second			Third	
	$(n)^a$	% correct	Cohen's kappa	(n)	% correct	Cohen's kappa	(n)	% correct
Remission	(41)	76	0.29	(21)	67	0.29	(4)	75
Recurrence	(34)	53	0.06	(42)	71	0.28	(8)	100
Duration of episode	(76)	50	0.03	(63)	63	0.28*	(12)	92
Time in hospital	(77)	59	0.16	(63)	71	0.39*	(12)	66
Occupational adjustment	(44)	45	0.04	(40)	53	0.19	(6)	33
Family adjustment	(33)	64	0.22	(35)	91	0.83*	(7)	100
Overall social adjustment	(77)	58	0.15	(62)	61	0.20	(12)	58
Total	(382)	57		(326)	67		(61)	75

^{a} n: numbers for which predictions were made and verified. Excluded are those to whom characteristics did not apply or could ot be verified
* $P<0.05$

the clinicians, predictions which were little better than chance statements anyhow. The second predictive assessment resulted in more correlations with patients' characteristics which were entirely inconsistent with those of the first assessment. Unfavourable characteristics at the time of the second assessment (e.g. long psychotic episode or stay in hospital, and serious disability) correlated with an incorrect prognosis. The main diagnosis of schizophrenia does not seem to be more often associated with a correct prognosis than that of reactive psychosis.

Table 4 shows whether we were too pessimistic or optimistic in our statements. Time proved us too optimistic more often than pessimistic in our predictions at the first assessment, this trend remaining at the second assessment. Because of the small number involved the third assessment is not presented. Again, we scrutinized patient's characteristics presented in Table 2 for correlations with too pessimistic or optimistic predictions, and correlations were weak and few. We will mainly mention those with too optimistic a prognosis, because there were only a few with too pessimistic a prognosis. They seemed to indicate that we had made insufficient allowance for the unfavourable effects of a long psychotic episode on outcome concerning remissions, relapses and further duration of the psychosis. When we had diagnosed a case as currently schizophrenic or with a main diagnosis of schizophrenia at the first assessment, we often proved too pessimistic with regard to remissions, duration of the psychotic episode and stay in hospital, and any improvement in social adjustment. In the case of poor overall adjustment at first assessment, we also appeared too pessimistic with regard to duration of the psychosis and adjustment in a years time.

These correlations did not exist with regard to the second assessment. At the second assessment we were too pessimistic about the duration of the psychotic episode, if patients had already had a long stay in hospital or a relapse. Furthermore, we were too optimistic about relapses in cases of an already lengthy psychotic episode, and about a further stay in hospital if patients had already been in hospital for a long time.

One of the reasons for our lack of success as forecasters could be that we were not actually involved with the treatment of the patients in the cohort. The question therefore is whether the responsible psychiatrists did any better? They were requested to give their opinion on recurrence of psychotic

Table 4. Nature of first and second prognostic statement, in numbers

Prognostic statements on	First prognosis			Second prognosis		
	(n)	Too pess.	Too opt.	(n)	Too pess.	Too opt.
Remission	(41)	4	6	(21)	2	5
Recurrence	(34)	4	12	(42)	3	9
Duration of episode	(76)	12	26	(63)	5	18
Time in hospital	(77)	17	14	(63)	4	14
Occupational adjustment	(44)	4	20	(40)	1	18
Family adjustment	(33)	7	5	(35)	1	2
Overall social adjustment	(77)	7	25	(61)	4	20

symptoms, length of stay in hospital and change in overall social adjustment. Since they gave their opinion mostly at the time of discharge of a patient, their predictions did not altogether coincide with ours, and only a crude comparison is possible.

At three consecutive assessments the treating psychiatrists expressed a favourable prognosis in 55%, 49% and 47% of cases, which is hardly different from ours (55%, 61% and 50%).

They were correct in 56%, 55% and 47% of cases, while we improved from 57% to 68% and 72%. On the whole, their unfavourable prognostic statements were related to an already poor course of the illness. There were no significant relationships between characteristics of the patients and a correct prognosis. In other words, differences between the research team and the treating psychiatrists with regard to prognosis were minimal.

Discussion

The present study revealed a team of clinicians who were rather optimistic with regard to their prognostic utterances, which in fact proved little better than chance statements. Our predictions seemed to reflect mainly what was known already

about e.g. the duration of the psychosis or of the stay in hospital. We were slightly too pessimistic about outcome in case of schizophrenia, and over the latter diagnosis we were generally more pessimistic than over that of reactive psychosis. But we were not correct with one diagnostic category more often than with the other. Not included in our analyses were possible intervening factors such as compliance with treatment or life events, which could have changed predicted outcome. When we tried to verify our findings in the literature we first discovered some linguistic confusion regarding the term prognosis, which is commonly used to denote actual outcome instead of prediction (Querido 1959; Jonghe 1974). Van Bork (1964) conducted a retrospective prognostic survey by examining the records of patients who had been discharged from hospital for some time before he visited them after varying periods of time, in some cases more than 4 years, to evaluate their outcome. For a heterogeneous group of patients his predictions concerning adjustment proved correct in 64% of cases, he was too optimistic in 8% and too pessimistic in 28%. The main reasons for his results appeared to be insufficient information or wrong interpretation of the casenotes at the time of predicting outcome. In a prospective follow-up study De Jonghe (1974) tried to predict readmission for a heterogeneous group of patients at the time of discharge. Of those who were supposed to be unable to maintain themselves in the community, 47% were nevertheless not readmitted within a year; while 25% of others who were thought capable of remaining outside were readmitted. Like Van Bork (1964) he was more often too pessimistic. Bakker (1980) asked the ward staff to predict outcome in terms of overall improvement and course of the disease, readmissions and suicidal tendencies in 6 months time, of patients who were about to be discharged. Predictions hardly ever proved right and were generally too pessimistic. They were too optimistic for patients aged 25 to 54 years, voluntarily admitted, with an intermediate stay in hospital and an affective psychosis, psychoneurosis or personality disorder, much improved at the time of discharge, and about whom the psychiatrist had the idea that he knew them well and that interaction had been satisfactory.

The staff were too pessimistic about patients aged 45 years or more, males, not properly recovered at the time of discharge, diagnostically doubtful cases and those with whom interaction had been less than satisfactory.

If we agree with Kendell that "In the last resort all diagnostic concepts stand or fall by the strength of the prognostic and therapeutic implications they embody. The ability to predict what is going to happen, and to alter this course of events if need be, have always been the main functions of medicine" then it seems that the art of predicting in these studies as well as in ours amounted to prognostic incompetence.

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