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PRELIMINARY COMMUNICATION

Two-year follow-up of the patients included in the WHO International Pilot Study of Schizophrenia[1]

Prepared on behalf of the collaborating investigators by

N. SARTORIUS, A. JABLENSKY[2] AND R. SHAPIRO

From the Division of Mental Health, WHO, Geneva, and the Psychochemistry Institute, University of Copenhagen

SYNOPSIS Over 90 % of the 1202 patients investigated in the 9 centres collaborating in the International Pilot Study of Schizophrenia were traced 2 years after the initial examination and on the average over 75 % of them were re-examined, using standardized instruments and methods. Results indicate that patients diagnosed as schizophrenic on the basis of standardized assessments and clearly specified diagnostic criteria demonstrated very marked variations of course and outcome over a 2-year period. Schizophrenic patients in the centres in developing countries had considerably better course and outcome than schizophrenic patients in the centres in developed countries.

INTRODUCTION

The International Pilot Study of Schizophrenia (IPSS) began in 1966 as a large-scale cross-cultural collaborative project carried out simultaneously in 9 countries differing considerably in their sociocultural characteristics: China, Colombia, Czechoslovakia, Denmark, India, Nigeria, the Union of Soviet Socialist Republics, the United Kingdom, and the United States of America. The study was sponsored by WHO and funded jointly by WHO, NIMH, and the 9 field research centres.

It set out to lay the methodological groundwork for future epidemiological and other research in schizophrenia and the other functional psychoses, and to provide information about the nature of schizophrenia.

With regard to methodology, the IPSS aimed:

(1) to investigate the feasibility of large-scale international studies requiring the collaboration of psychiatrists and other mental health workers with different cultural and theoretical backgrounds;

(2) to develop standardized instruments and procedures for psychiatric assessment that could be applied reliably in a variety of cultural settings;

(3) to train teams of research workers to use such instruments and procedures so that comparable observations could be made in developed and developing countries.

With regard to information on the nature of schizophrenia, the study set out to explore in what sense it could be said that schizophrenic disorders exist in different parts of the world; to identify symptomatological and other clinical similarities and dissimilarities between groups of patients who are diagnosed as suffering from schizophrenia in different cultures as well as between groups of patients with diagnosis of schizophrenia and with diagnosis of other functional psychoses; to determine the extent to which dissimilarities between schizophrenic patients in different settings are the result of variations in diagnostic practice or a reflexion of culture-related differences in the manifestations of the disorder; and to investigate whether the course and outcome of schizophrenia differ from country to country.

[1] This project is sponsored by the World Health Organization and funded by the World Health Organization, the National Institute of Mental Health (USA) and the participating field research centres.

[2] Address for correspondence: Dr A. Jablensky, Division of Mental Health, WHO, Geneva, Switzerland.

Table 1. *Composition of groups of units of analysis**

Groups	Units of analysis (symptoms)
1. Quantitative psychomotor disorder	1. Overactivity 2. Retardation 3. Stupor 14. Repetitive movements
2. Qualitative psychomotor disorder	4. Negativism 5. Compliance 7. Stereotypies 9. Grimacing 10. Posturing 11. Mannerisms 12. Hallucinatory behaviour 13. Waxy flexibility
3. Quantitative disorder of form of thinking (and speech)	15. Flight of ideas 16. Pressure of speech 18. Mutism 19. Restricted speech 124. Distractibility
4. Qualitative disorder of form of thinking (and speech)	20. Neologisms 21. Klang association 22. Speech dissociation 23. Irrelevance 25. Blocking 26. Stereotypy of speech 27. Echolalia
5. Affect-laden thoughts	28. Gloomy thoughts 29. Elated thoughts 30. Hopelessness 31. Suicidal thoughts
6. Predelusional signs	33. Delusional mood 34. Ideas of reference 35. Questioning reasons for being 37. Perplexity
7. Experiences of control	38. Thought alienation 39. Thoughts spoken aloud 40. Delusions of control
8. Delusions	41. Persecution 42. Guilt 43. Self-depreciation 44. Nihilistic 45. Grandeur 46. Reference 47. Presence of delusional system 48. Hypochondriacal 49. Special mission 50. Religious 51. Fantastic 52. Sexual 53. Impending doom
9. Neurasthenic complaints	54. Obsessive thoughts 55. Worries 56. Lack of concentration 57. Memory difficulties 58. Hypochondriacal 59. Undecided 119. Decreased interest
10. Lack of insight	60. Lack of insight
11. Distortion of self-perception	61. Changed appearance 63. Looking at self 64. Break of self-identity
12. Derealization	62. Derealization 65. Distortion of time perception
13. Auditory hallucinations	66. Presence of verbal hallucinations 67. Voices speak to patient 69. Non-verbal auditory hallucinations 70. Presence of auditory hallucinations
14. 'Characteristic' hallucinations	68. Voices speak full sentences 72. Voices discussing patient 73. Hallucinations from body 74. Voices comment on patients' thoughts 75. Voices speak thoughts
15. Other hallucinations	76. Visual 77. Tactile 78. Olfactory 79. Sexual 80. Somatic 81. Gustatory
16. Pseudo-hallucinations	82. Auditory 83. Visual
17. Depressed–elated	32. Special depression 84. Depressed mood 85. Observed elated mood
18. Anxiety, tension, irritability	86. Morose mood 88. Irritability 89. Tension 90. Situation anxiety 91. Anxiety
19. Flatness	92. Flatness 93. Apathy
20. Incongruity	95. Incongruity of affect
21. Other affective change	94. Ecstatic mood 97. Haughtiness 98. Ambivalence 101. Lability of affect 102. Ambitendence
22. Indication of personality change	8. Odd appearance and behaviour 103. Change of interest 104. Change of sex behaviour 105. Autism 106. Abnormal tidiness 110. Social withdrawal
23. Disregard for social norms	108. Disregard for norms 109. Self-neglect
24. Other behavioural change	6. Talking to self 17. Disorder of pitch 96. Giggling to self 100. Demonstrative
25. Psychophysical	111. Early waking 112. Worse in morning 113. Worse in evening 114. Diminished appetite

Table 1 (*cont.*)

Groups	Units of analysis (symptoms)	Groups	Units of analysis (symptoms)
	115. Sleep problems	27. Cooperation difficulties, patient-related	36. Suspiciousness
	116. Increased appetite		122. Suggestibility
	117. Increased libido		123. Poor rapport
	118. Decreased energy		126. Unwilling to cooperate
	120. Decreased libido		127. Inadequate description
	121. Constipation		
26. Cooperation difficulties, circumstances-related	125. Biological treatment		
	128. Environmental circumstances		
	129. Speech impediments		

* Five units of analysis ('perseveration', 'frequent auditory hallucinations', 'groaning', 'loss of emotions', and 'increased interest') were excluded because they did not fit well into any of the groups and it was considered inappropriate to create 5 new groups to accommodate them.

By design, the IPSS was not an epidemiological study, and no attempt was made to identify samples representative of the populations of patients in the centres. Instead a number of operationally defined selection crtieria was used to screen at each field research centre all patients contacting a psychiatric service during a one-year period and to ensure inclusion in the project of patients within the age range 15–44 who had non-organic psychotic illnesses of a relatively recent onset and who would be likely to be available for follow-up.

The IPSS was carried out in three phases: a preliminary phase, an initial evaluation phase, and a follow-up phase. During the preliminary phase administrative, operational and organizational procedures were established and tested. In the initial evaluation phase, a total of 1202 patients was selected for study in the 9 field research centres, and given a detailed standardized clinical examination. Of these 1202 patients, 811 had received a clinical diagnosis of schizophrenia, 164 a diagnosis of affective psychosis, and 227 of other psychoses or non-psychotic conditions. In the follow-up phase, the original patients were traced and re-examined twice: 2 years and 5 years after the initial evaluation.

The methodology and results of the initial evaluation phase of the IPSS have been described in detail elsewhere (WHO, 1973, 1975) and will only be given in outline to provide a background to the preliminary findings of the 2-year follow-up study.

Each patient selected for inclusion received an initial evaluation by the field research centre staff using a set of standardized instruments of which the 3 basic ones were the Present State Examination (PSE), the Psychiatric History Schedule, and the Social Description Schedule. On the average, the evaluation of one patient took about 5 hours and resulted in the accumulation of some 1600 items of information.

For the purposes of the study the PSE was translated into 7 languages and interlanguage equivalence was achieved through the reiterative back-translation method and 'target-checks' of meaning.

The psychiatrists from the collaborating centres received intensive training in the use of the instrument prior to the data collection phase, and the reliability of their assessments was controlled through simultaneous interviews repeated at regular intervals in the course of the study. Such exercises took place both between investigators within individual centres and between investigators from different centres. On the level of individual PSE items, the intraclass correlation coefficient between raters within centres was, on the average, 0·77. When items were combined into 'units of analysis' corresponding to symptoms, or into larger groupings ('groups of units of analysis') reflecting broad areas of psychopathology, such as delusions, hallucinations, etc. (Table 1), reliability was even higher, of the order of 0·81–0·84. Inter-centre reliability was somewhat lower – median intraclass correlation coefficient values being 0·45 for units of analysis and 0·57 for groups of units, but high enough to allow inter-centre comparison of psychopathology.

The two other principal instruments – the Psychiatric History and the Social Description schedules – covered systematically the past history of the patient and provided data on his social environment, socioeconomic status, occupational and educational record. The investigators using these schedules received considerable prior training. In view of the difficulties in assessing the reliability of such instruments across cultures, the rigorous procedure used in the case of the PSE was replaced by simpler methods with particular emphasis on joint ratings and development of agreed definitions.

During the 2-year and 5-year re-evaluations, the patients were re-examined with the PSE and with the follow-up history and social description instruments. In addition to the ratings, narrative histories of the patients' progress during the follow-up phase were supplied by the centres. The narrative histories were rated on a number of course and outcome variables (e.g. length of the episode of inclusion, proportion of the follow-up period during which the patient was in psychotic episodes, pattern of course, clinical type of subsequent episodes, level of social functioning, overall outcome), and this information was used to supplement ratings made in the schedules and evaluate course and outcome.

Data obtained with the PSE were used to generate symptom profiles of patients which could be compared within and between diagnostic groups and centres.

Since one of the aims of the study was to investigate how the diagnostic concepts of schizophrenia and other functional psychoses were applied in different settings, and whether a diagnosis of a functional psychotic disorder made at one point in time predicted meaningful dimensions of the subsequent course and outcome of the patients in different cultures, several different methods were developed and applied to the diagnostic classification of patients: clinical diagnosis, computer-simulated reference diagnosis, a mathematical clustering technique, and a combination of the above 3 methods.

Clinical diagnosis was recorded in terms of ICD categories. The intra-centre reliability of clinical diagnosis, measured as agreement rates obtained in series of paired simultaneous interviews, proved to be very high: the agreement on a diagnosis of schizophrenia was, on the average, 91·3 %.

To standardize the diagnostic procedure and provide a reference classification of the study patients, the CATEGO computer program using as input PSE data (Wing *et al.* 1974) was utilized. The computer classification of patients turned out to be in agreement with the clinical diagnosis in a very high proportion (87 %) of the patients.

McKeon's (1967) hierarchical clustering method provided a third classification of the patients by grouping all 1202 patients into 10 statistical clusters on the basis of maximum number of common characteristics.

Finally, the patients in whom the clinical and the computer diagnosis of schizophrenia agreed, and who were classified into the 3 statistical clusters which turned out to contain more schizophrenic patients than could be expected on a random basis, were designated as a 'concordant' group of schizophrenics, and were analysed further as distinct from patients who had received a diagnosis of schizophrenia but were not classified as schizophrenic by the computer program, or included in the statistical clusters containing an excess number of schizophrenics. The 'concordant' group was of particular interest, since it included patients in whom the diagnosis of schizophrenia was expected to be least influenced by the individual predilections of the diagnosticians and therefore might provide clues to possible transcultural features of the disorder. Patients belonging to the 'concordant' group were identified in all the 9 centres of the study. The similarity of symptom profiles among 'concordant' groups from different centres was even higher than the similarity of profiles of the groups of all schizophrenics.

The main findings of the initial evaluation phase of the IPSS can be summarized as follows:

(1) The group of patients given a clinical diagnosis of schizophrenia in one centre tended to have a symptom profile similar to that of groups of patients given the same diagnosis in the other centres. This was also true of patients with psychotic depressive illnesses (ICD categories 296·0, 296·2, 298·0). When the profiles of groups of schizophrenic and groups of psychotic depressive patients were compared it was found that the profiles of these 2 diagnostic groups were markedly different from one another, both overall and within each of the centres in which

numbers were large enough to make comparisons possible.

(2) There was a high level of agreement between the CATEGO classification and clinical diagnosis in 7 of the centres and a fair degree of agreement in the other 2 centres (Moscow and Washington). This finding suggests that the psychiatrists' diagnostic rules had been approximated in a precisely specified way in the computer program and that certain common diagnostic principles were applied by the psychiatrists in all centres.

Thus, the initial evaluation phase of the IPSS demonstrated that it is possible to identify schizophrenic patients who are similar with regard to a number of specified clinical characteristics in all the 9 cultures in which the field research centres of the study are located.

In addition, the initial phase demonstrated that it is feasible to carry out large scale collaborative studies in psychiatry and that teams of research workers can be trained to use standardized research instruments and procedures (including the PSE which was shown to be an acceptable, applicable and reliable instrument in all of the 9 centres) so that comparable observations of psychiatric patients can be made both in developed and developing countries.

METHODOLOGY OF THE 2-YEAR FOLLOW-UP PHASE

An attempt was made to find and re-evaluate as many of the original 1202 patients as possible 2 years after their initial evaluation. As a result, 97·1 % of all patients were traced, and in all centres an average of 75·6 % were seen and re-examined using the PSE and a follow-up history and social description schedule.[1]

The reliability of psychiatric assessments during the follow-up phase was maintained by continuing training and reliability excercises at regular intervals. Meetings and exchanges of visits of collaborating investigators organized throughout the study provided an opportunity for discussion and agreement on study plans and their changes and proved to be an essential mechanism for coordination in this collaborative venture.

Data obtained with the PSE at follow-up were used for comparisons of symptomatology within and between diagnostic groups and centres, and for comparisons with the initial evaluation profiles. Data obtained with the follow-up psychiatric history and social description schedules (which were supplemented by narrative summaries) were used to determine for each patient the following measures of course and outcome:

(i) length of the episode of inclusion,

(ii) proportion of the follow-up period during which the patient was in psychotic episodes,

(iii) pattern of course (e.g. continuous, remitting with or without relapses, etc.),

(iv) clinical type of subsequent episodes,

(v) degree of social impairment,

(vi) proportion of the follow-up period during which the patient was out of hospital,

(vii) overall outcome (a combined measure taking into account the proportion of the follow-up period during which the patient was psychotic, degree of social impairment, and type of remission).

These measures were used to compare the course and outcome of patients across diagnostic groups and centres and to assess the predictive power of characteristics of the patients and their illness at initial evaluation. They were also used in analyses of the validity of the different systems of classification that were applied in the study.

MAIN RESULTS OF THE 2-YEAR FOLLOW-UP

The results of the 2-year follow-up phase are presented in detail in Volume II of the Report of the International Pilot Study of Schizophrenia (WHO, 1978). The following is a summary of some of the major findings.

A. Variability of the course and outcome of schizophrenia

Schizophrenic patients who were symptomatologically homogeneous on initial evaluation and whose disorders clinically corresponded to the strict definition of schizophrenia underlying the CATEGO program, showed a marked variability of 2-year course and outcome, both within the

[1] In 2 centres over 90 % of the patients were re-interviewed; in 3 centres more than 80 %; in another 3 more than 70 %; and in 1 centre because of staff shortage PSE interviews were carried out with 21 % of the patients only, but otherwise detailed progress notes were made available and follow-up history and social description schedules filled in. If the centre with a low proportion of re-examined patients is excluded, the average percentage of re-examined patients would be 82·1.

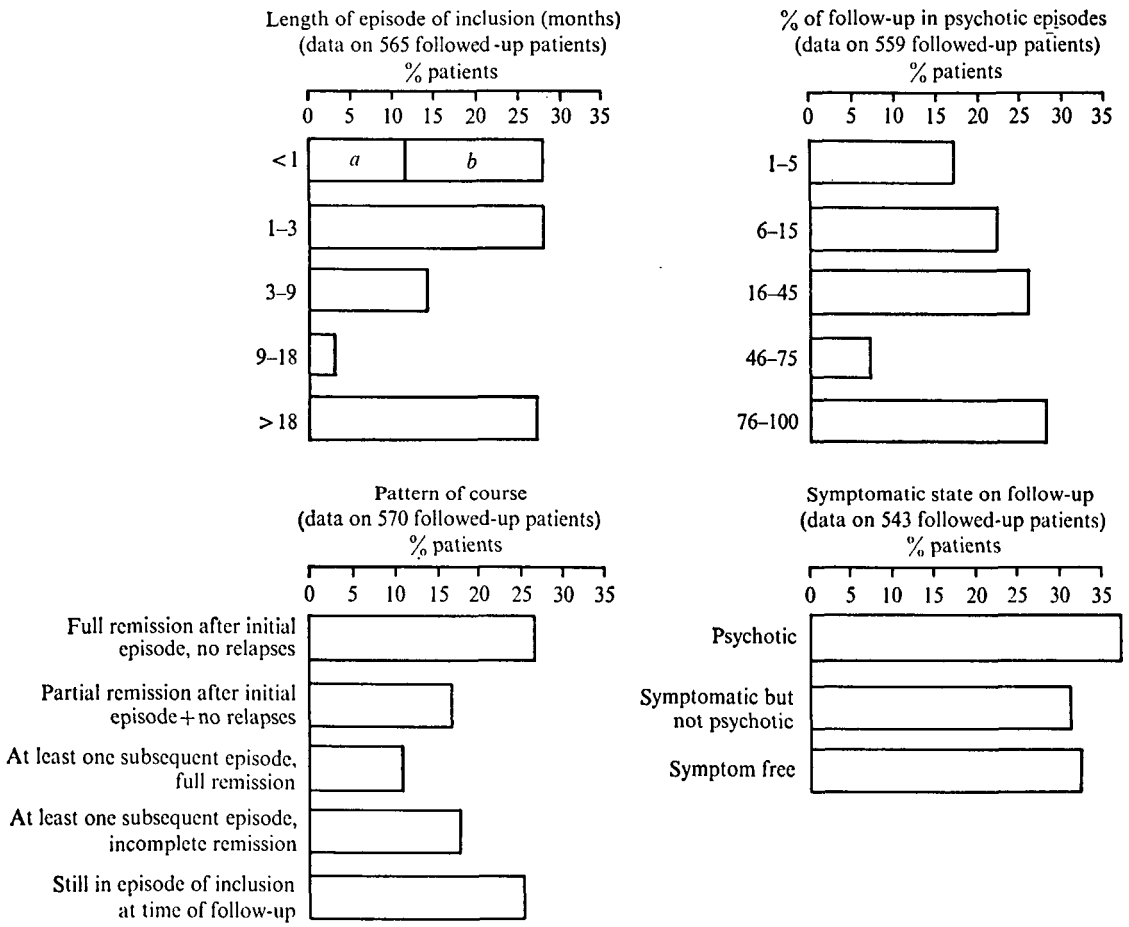

FIG. 1. Course and outcome measures. *a* = with full remission; *b* = without full remission.

series of patients investigated in each centre, and in the study population as a whole.

When the range of possible outcomes was divided into 5 overall outcome categories it was found that some patients had a very favourable 2-year outcome. Thus, 26 % of the schizophrenics fell into the best outcome group (i.e. were psychotic less than 15 % of the time of the follow-up, were not socially impaired, and had full remission). On the other hand, however, 18 % fell into the worst outcome group (i.e. were both continuously psychotic and severely impaired); while the remaining 56 % were distributed over the 3 intermediate categories. Considering the pattern of course, 27 % of all schizophrenics had a single, relatively short psychotic episode followed by full recovery without relapses and social impairment (in about 17 % of all patients the illness lasted less than 6 weeks). At the other extreme, 26 % never had a full remission during the 2-year period. At the moment of the 2-year follow-up evaluation, one-third of the schizophrenic patients were found to be symptom-free; more than a quarter, however, were still in the psychotic episode which occasioned their inclusion in the study.

Fig. 1 presents the percentage of schizophrenic patients that fell into the various outcome groups for 4 of the course and outcome measures (length of episode of inclusion, percentage of time psychotic, pattern of course, symptomatic picture at 2-year follow-up) and Fig. 2 shows the distribution of patients over the overall outcome categories.

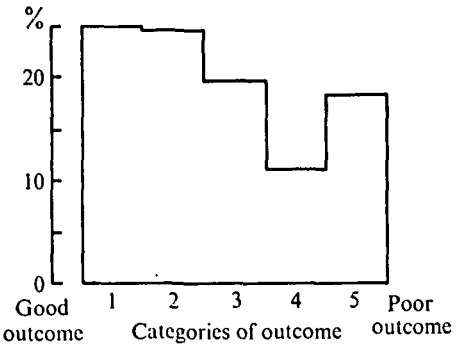

FIG. 2. Distribution of 543 followed-up schizophrenic patients over 5 categories of 2-year overall outcome. Categories of outcome:

1 = *very favourable* – includes: psychotic for less than 15 % of the follow-up period, then full remission; no severe social impairment.

2 = *favourable* – includes any of the following: (*a*) psychotic for less than 15 % of the follow-up period, then remission with some residual symptoms but no severe social impairment; (*b*) psychotic for 16–45 % of the follow-up period, then full remission and no severe social impairment.

3 = *intermediate* – includes any of the following: (*a*) psychotic for less than 15 % of the follow-up period, then remission with or without residual symptoms, but with social impairment; (*b*) psychotic for 16–45 % of the follow-up period, then either remission with residual symptoms but no severe social impairment or full remission with severe social impairment; (*c*) psychotic for 46–75 % of the follow-up period, then remission (full or with residual symptoms) but no severe social impairment.

4 = *unfavourable* – includes any of the following: (*a*) psychotic for 46–75 % of the follow-up period, then full remission but severe social impairment; (*b*) psychotic for over 76 % of the follow-up period, then remission (full or with residual symptoms) but no severe social impairment.

5 = *very unfavourable* – includes any of the following: (*a*) psychotic for 46–75 % of the follow-up period, then remission with residual symptoms and severe social impairment: (*b*) psychotic for over 76 % of the follow-up period, then remission (full or with residual symptoms) and severe social impairment.

B. Variability of course and outcome of schizophrenia according to centre

When course and outcome of the schizophrenic patients were analysed by centres and by groups of centres, striking and consistent differences emerged between patients in centres in the developing countries and patients in centres in the developed countries.[1] On virtually all course and outcome measures, the group of schizophrenic patients from Agra, Cali and Ibadan had on the average better course and outcome than the group of patients from Aarhus, London, Moscow,

[1] Taipei was not included in these analyses because it did not fit clearly into either of the 2 groups.

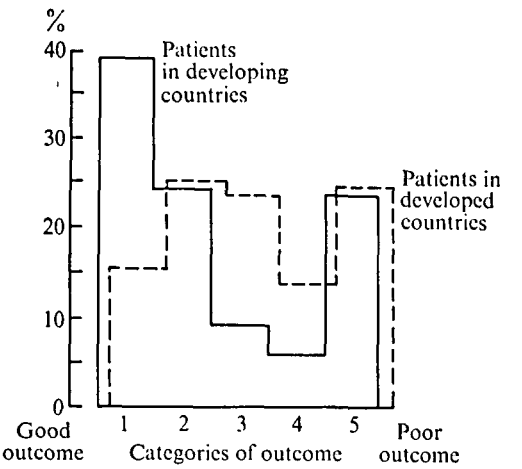

FIG. 3. Distribution of 233 followed-up schizophrenic patients in developing countries and 295 followed-up schizophrenic patients in developed countries over 5 categories of 2-year overall outcome. The categories of outcome are as defined in Fig. 2.

Prague and Washington. When individual centres were compared, schizophrenic patients in Ibadan and Agra had the best course and outcome among the schizophrenic patients in all centres. Fifty-eight per cent of initial evaluation Ibadan schizophrenics and 47 % of initial evaluation Agra schizophrenics followed up were symptom-free at the time of 2-year follow-up and 36 % of Ibadan schizophrenics and 27 % of Agra schizophrenics had an episode of inclusion that lasted for less than one month followed by a full remission without any relapses.

Only 5 % of the Ibadan schizophrenics fell into the worst overall outcome group. For every outcome variable the schizophrenic patients in Ibadan and Agra had a significantly better outcome than those in Aarhus, London, Washington and Prague, with those in Cali and Moscow being intermediate. The markedly different distributions of patients in centres in developing and developed countries over the 5 categories of overall outcome are shown on Fig. 3.

The differences in course and outcome among the centres and between the group of centres in developing countries and the group of centres in developed countries were not due to differences in the ratio of patients with more and less recent onset of the disorder prior to the inclusion into the study, since these differences did not disappear or diminish substantially when the groups

were controlled for length of illness before inclusion in the study. The interpretation of these results is a complex matter and the conclusions that can be drawn from them are discussed in Volume II of the Report of the IPSS (WHO, 1978).

C. Course and outcome of schizophrenia compared with that of other functional psychoses

Schizophrenic patients in the IPSS had the worst course and outcome on every course and outcome measure of any of the diagnostic groups included in the study. For all centres combined these differences were statistically significant and intra-centre differences, although not always statistically significant, were generally in the direction of schizophrenic patients having a less favourable course and outcome than patients in other diagnostic groups. Differences between schizophrenic patients and patients with affective psychoses on course and outcome measures were statistically significant in centres in developed countries and not significant for any of the course and outcome variables in centres in developing countries. Possible explanations for this finding are discussed in Volume II of the Report of the IPSS (WHO, 1978).

Despite the consistent and significant differences between schizophrenic patients and patients with psychotic depression, where individual measures of course and outcome are considered, these differences do not appear to be large enough to allow clear-cut separation of patients in the 2 groups on the basis of course and outcome only. Discriminant function analysis indicated that if patients were to be classified into these 2 diagnostic groups solely on the basis of type of course and outcome, the rate of misclassification would be quite high (about 40 %).

D. Predictors of course and outcome

Predictor variables selected from the results of the standardized assessment of patients at initial evaluation were divided into 3 classes – sociodemographic variables, past history variables, and characteristics of the episode of inclusion. Course and outcome variables were defined in terms of the measures described above and the analysis of predictors was carried out using the statistical technique of step-wise multiple regression analysis.

The major findings of these analyses can be summarized as follows:

(1) The amount of variance for any of the course and outcome variables that could be accounted for by the 5 best predictors was relatively low, ranging from 8 to 22 %. For the 15 best predictors taken together, it was never higher than 27 %. This suggests that no single factor and no combination of a small number of 'key' factors had a very strong association with the course and outcome of schizophrenia and also that part of the variance in the course and outcome of schizophrenic patients in this study might be related to factors not included among the variables assessed.

(2) The 3 classes of predictors – sociodemographic factors, past history factors, and episode of inclusion factors – were found to be about equal with regard to their predictive power.

(3) Three sociodemographic predictors appeared consistently among the best predictors of this class: social isolation, associated with a poor outcome; marital status – widowed, divorced or separated, associated with a poor outcome; and marital status – married, associated with a good outcome.

(4) Three past history predictors consistently emerged among the best predictors of this class: history of past psychiatric treatment, poor psychosexual adjustment, and unfavourable environment – all associated with poor outcome.

(5) Among characteristics of the episode of inclusion, 2 factors appeared consistently among the best predictors: duration of the length of the episode of inclusion prior to initial evaluation (long duration associated with poor outcome) and insidious onset, associated with a poor outcome. Other predictors included presence of precipitating factors, derealization and affective symptoms, associated with good outcome, and flatness of affect, associated with poor outcome.

(6) The proportion of course and outcome variance that could be explained by the best predictors was different for the groups of schizophrenics in the developing and developed countries, with the predictive power of the best predictors being considerably higher in the developed countries. Furthermore, there were differences between patients from centres in developed and developing countries with regard to the specific factors which were the best predictors of outcome.

Table 2. *Predictors of several measures of course and outcome in schizophrenic patients (all centres)*

Course and outcome variable and number of patients in the analysis	Best predictors	% variance explained by 5 best predictors
Length of the episode of inclusion (565 patients)	Length of episode prior to initial assessment Social isolation Score on derealization Psychiatric treatment in the past History of behaviour disturbance	15
Proportion of the follow-up period in which patient was in psychotic episodes (559 patients)	Social isolation Length of episode prior to initial assessment Psychiatric treatment in the past Sex Type of onset	12
Full remission without relapses after the initial episode (154 patients)	Sudden onset No psychiatric treatment in the past No personality change Married Short duration of episode prior to initial assessment	14
Remittent course with relapses (172 patients)	Female sex Depression or elation Higher occupational level Neurotic complaints Absence of precipitating stress	7
Continuous illness, no remissions (150 patients)	Long duration of episode prior to initial assessment Social isolation Divorced, separated or widowed Absence of derealization History of behaviour disturbance	14
Social impairment on follow-up (585 patients)	Social isolation Long duration of episode prior to initial assessment Psychiatric treatment in the past Marital status other than currently married No physical illness or disability in the past	20

(7) There were considerable differences between the best predictors for schizophrenia and the best predictors for affective psychoses.

Some of the main findings about the predictors of 2-year course and outcome in schizophrenic patients are summarized in Table 2.

The IPSS results provide some support for hypotheses previously held about the relationship between particular predictors and outcome. At the same time they suggest that predictive factors identified for study in European and North American cultures may not be very suitable for the study of prognosis in other cultures, and that a large part of the variance in the course and outcome of schizophrenia is related to factors which are yet to be identified.

E. Approaches toward an assessment of diagnostic validity

The lack of clear-cut external validating criteria has made the assessment of the validity of diagnostic classification systems a difficult matter. In the IPSS the question of diagnostic validity was approached in 2 ways: from the point of view of the temporal consistency of the symptomatology of the patients classified into a defined diagnostic group, and from the point of view of the extent to which the classification of patients into a particular diagnostic category predicts the course and outcome of their disorders.

Symptom profiles of groups of patients given the diagnosis of schizophrenia at initial evaluation who were psychotic at the time of follow-up showed a significant similarity to the same patients' initial evaluation profiles. The percentage of initial evaluation schizophrenic patients considered to be psychotic at follow-up that fell into the same CATEGO class on both initial evaluation and follow-up was high, ranging from 72 % in Washington to 100 % in London.

If schizophrenic patients had subsequent psychotic episodes these were predominantly of

the schizophrenic type. However, 17 % had subsequent affective episodes (Sheldrick *et al.* 1977).

On the whole, these results seem to support the concept of the temporal consistency of schizophrenic symptomatology.

Symptomatological criteria and diagnostic categories, however, turned out to be far less effective predictors of 2-year course and outcome defined by dimensions such as length of initial illness episode, proportion of the follow-up during which the patient was in psychotic episodes, pattern of course (e.g. remitting, with or without relapses, recurrent or continuous), degree of social impairment, or a combination of several of the above measures. Results of the multivariate analyses indicate that although there were significant differences there was also considerable overlap in the type of course and outcome of patients placed in different diagnostic groups.

The separation of the patients with a clinical diagnosis of schizophrenia from patients with a diagnosis of psychotic depression in terms of course and outcome was not as good as the separation of schizophrenic and manic patients (Mahalanobis' mean distance coefficients for the pairs of distributions in discriminant function analysis 0·58 and 1·36 respectively).

The discrimination between schizophrenia and psychotic depression on the basis of course and outcome was better when only concordant schizophrenics were included in the analyses and also when the analyses were carried out in terms of CATEGO S (representing schizophrenia) and CATEGO D (representing psychotic depression) classes instead of in terms of field research centre diagnoses.

Concerning the predictive validity of the distinctions between subtypes of schizophrenia, of the various groupings attempted (in order to obtain sufficient number of cases for analysis) only the distinction between the combined group of simple and hebephrenic schizophrenics, on one hand, and the group of schizoaffective patients on the other hand, achieved a reasonable level of separation in terms of course and outcome (Mahalanobis' distance 1·06).

In general, it was found that the clinical, CATEGO, and 'concordant' – 'non-concordant' classification systems were better predictors of the future type of symptomatology than they were of course and outcome variables such as length of episode of inclusion, percentage of time psychotic, social functioning and pattern of course.

DISCUSSION AND CONCLUSIONS

More than 70 years ago, Kraepelin (1904) suggested that 'comparative psychiatry' defined as 'the observation of mental disorders in different groups of people' could substantially advance our knowledge about the causes and nature of mental disorders but warned that 'reliable comparison is, of course, only possible if we are able to draw clear distinctions between identifiable illnesses, as well as between clinical states; moreover, our clinical concepts vary so widely that for the foreseeable future such comparison is possible only if the observations are made by one and the same observer'.

The International Pilot Study of Schizophrenia was an effort to overcome some of the difficulties which in the past undermined the validity of many attempts to compare observations on psychiatric patients made by different researchers in different settings, and impeded the development of a common language for describing the phenomena of major mental disorders. The results of the first 2 phases of the IPSS and the methodological experience gained since the first patient was examined in this study in 1968 demonstrated the feasibility of assessing and following up in a standardized and comparable way psychiatric patients in different cultures by research workers from those cultures, provided that:

(i) they undergo extensive training in the use of standardized research instruments and procedures;

(ii) an organizational framework is set up to ensure both frequent contacts between the collaborating investigators and central coordination of work;

(iii) research methods and instruments are developed which are applicable and acceptable in different cultural settings, and can be utilized reliably within and across the different settings.

Further to demonstrating that international comparisons of psychopathology and prospective observations on psychiatric patients are feasible, the IPSS generated a wealth of cross-cultural data which gave rise to a large number of hypotheses about the nature of schizophrenia and the effects that the social and cultural environment may have on its course and outcome.

In considering the findings of the IPSS caution must be used against unwarranted generalizations since by design the study did not attempt to select representative samples of all schizophrenic patients or of all patients with other functional psychoses in the different settings where the research centres were located.

The findings of the 2-year follow-up which come foremost to attention are:

(i) the very marked variability of course and outcome of patients diagnosed as schizophrenic according to strict symptomatological criteria,

(ii) the consistent differences of course and outcome between groups of schizophrenic patients in different cultural settings, in the sense that patients in centres in developing countries had considerably more favourable course and outcome than patients in centres in developed countries.

The observed variability of course and outcome can support both the view that many schizophrenic patients do surprisingly well in their subsequent lives, and the argument stressing the fact that in a significant proportion of the patients the disorder has a very poor prognosis and leads to severe impairments and disability. The emphasis on the one or the other aspect will depend on the issue in question, but in any case the findings so far indicate that a clinical diagnosis of schizophrenia alone (even if based on strictly defined criteria), does not provide sufficient ground for a firm statement about the patient's likely pattern of course, probability of relapses and remissions, and degree of social impairment in the future.

This conclusion does not intend to call in question the validity of the conventional system of psychiatric classification, but rather to point out some of its limitations and warn against unrealistic expectations of a classification's predictive capacity, especially when diagnostic categorization is applied to individuals in very different social and cultural settings. At present it is impossible to say whether the relatively low predictive power of diagnosis is due to its over-inclusiveness or whether sociocultural factors have such a powerful impact on the course and outcome that no prediction can be made even if our diagnostic skills were to reach a very high level.

This is particularly so in the case of the individual patient. However, the demonstration that as a group schizophrenic patients had a more severe course and outcome than the other groups of psychotic patients, all assessed according to the same standardized data collection procedures and the same outcome criteria, indicates that classification into groups of disorders according to symptomatology does have significant prognostic implications. Moreover, temporal consistency of symptomatology, as a measure of validity of a diagnostic classification, was shown to be high, indicating that, at least over a short period, clinical diagnosis is a good predictor of future symptomatology. The fact that there was a greater difference between the course and outcome and subsequent symptomatology of patients classified in CATEGO classes S and D than between the course and outcome of patients with a field research centre diagnosis of schizophrenia and psychotic depression suggests that the more strictly diagnostic categories are defined, the greater their predictive validity.

The overlap between the short-term course and outcome of schizophrenia on the one hand and of affective psychoses, on the other, shows that the belief that schizophrenia usually has a poor outcome and affective psychoses a good outcome may be wrong. The degree of overlap suggests caution in predictions of differences in length of episodes, proportion of time psychotic, level of social functioning, and pattern of course, based on clinical diagnosis alone. Many of the course and outcome variables may be influenced by factors other than the characteristics that are usually considered in defining the categories of a clinical diagnostic classification, and a number of such factors were identified in the analysis of predictors of course and outcome. Some of the predictors – e.g. social isolation or marital status – point clearly to the importance of psychosocial influences on the course and outcome of schizophrenic disorders, while others, like type of onset, presence or absence of precipitating factors, psychosexual adjustment, etc., suggest that a more careful enquiry about such characteristics in a conventional clinical assessment can yield rewards in terms of better prognostic evaluation.

The finding that factors usually studied as possible predictors of outcome do not account for a very high proportion of the total variance in the course and outcome of schizophrenia suggests that it is important to look for other potential predictors of outcome. In particular it suggests

that predictors identified in European and North American cultures are not necessarily relevant to other cultures.

The finding that schizophrenic patients in the centres in developing countries (particularly in Ibadan and Agra) had a better course and outcome on all variables than the schizophrenics in the centres in the developed countries is perhaps the most important outcome of the 2-year follow-up study. If confirmed by 5-year follow-up results it would have significant implications for both service organization and for directions of future research. Several hypotheses have already been formulated to explain these differences and future work will focus on investigations to test them.

It is possible, of course, that the symptomatologically similar groups of schizophrenic patients in the different centres included varying proportions of patients suffering from functional psychotic conditions, which, although presenting with schizophrenic symptoms, could be otherwise different from schizophrenia. Consideration of this possibility raises important theoretical questions about psychiatric nosology and also calls for investigation as to whether there are, on initial examination, symptoms that would allow distinguishing the 'disease' schizophrenia from prognostically benign 'schizophreniform' states. Type of onset, precipitating factors and other possible such variables were already mentioned in the discussion of predictors of course and outcome and will be the object of further study.

Also, evidence obtained so far supports the thesis that there is a relationship between variables linked to culture and the social environment, and the prognosis of schizophrenia. The size of the family group and the nature of interaction between its members, the existence or absence of crystallized social stereotypes of the 'schizophrenic', the extent of availability of specialized medical and social welfare services which might reinforce such stereotypes, etc., are examples of such factors which will need to be studied further.

A 5-year follow-up of IPSS patients has been carried out and data analysis for this phase of the study is under way. These analyses will make it possible to determine whether the differences in course and outcome in different cultures and different diagnostic groups become greater, less, or remain the same over a longer period of time. In addition, a new study, aiming to replicate the findings on cross-cultural differences in the prognosis of schizophrenia, and to test some of the hypotheses about possible influences of culture-related factors mentioned above, is being undertaken.

SUMMARY

Over 90 % of the 1202 patients investigated in the 9 countries collaborating in the IPSS were traced 2 years after the initial examination and, on the average, over 75 % of them were re-examined, using standardized instruments and methods. Results of this phase indicate that patients diagnosed as schizophrenic on the basis of standardized assessments and clearly specified diagnostic criteria demonstrated very marked variations of course and outcome over a 2-year period. Schizophrenic patients in the centres in developing countries had on the average considerably better course and outcome than schizophrenic patients in the centres in developed countries. Part of the variation of course and outcome was related to sociodemographic (e.g. social isolation, marital status) and clinical (e.g. type of onset, precipitating factors) predictors but another larger part remained statistically unexplained. This suggests that variables usually used to describe psychopathology, the environment and history of psychiatric patients in European and North American cultures may not be sufficient to account for cross-cultural differences. Hypotheses concerning the relationship between culture and schizophrenia have been formulated and initial approaches made towards assessing the validity of systems of classification of psychiatric disorders. Diagnostic classification of patients on initial evaluation appeared to be consistently associated with patterns of symptomatology observed during the follow-up, but less so with the length of the episodes, the total time during which the patient was psychotic, pattern of course, or the degree of social impairment. A 5-year follow-up of the IPSS patients has also been completed and the collected data are being analysed.

The collaborating investigators in this study have been Dr N. Sartorius, principal investigator, Dr T.-Y. Lin, former principal investigator, and Ms E. M. Brooke, Dr F. Engelsmann, Dr G. Ginsburg, Mr W. Gulbinat, Dr A. Jablensky, Mr M. Kimura, Dr A. Richman, and Dr R. Shapiro at the *Headquarters of the World Health Organization* in Geneva, Switzerland; Dr E. Strömgren, chief collaborating investigator, and Drs A. Bertelsen, M. Fischer, C. Flack and N. Juel-Nielsen at the field research centre in *Aarhus, Denmark*; Dr. K. C. Dube, chief collaborating investigator, and Dr B. S. Yadav at the field research centre in *Agra, India*; Dr C. Leon, chief collaborating investigator, and Drs G. Calderon and E. Zambrano at the field research centre in *Cali,*

Colombia; Dr T. A. Lambo, chief collaborating investigator, and Dr T. Asuni and Dr M. O. Olatawura at the field research centre in *Ibadan*, *Nigeria*; Dr J. K. Wing, chief collaborating investigator, and Drs J. Birley and J. P. Leff at the field research centre in *London*, *United Kingdom*; Dr R. A. Nadzharov, chief collaborating investigator, and Dr N. M. Zharikov at the field research centre in *Moscow*, *USSR*; Dr. L. Hanzlicek, chief collaborating investigator, and Dr C. Skoda at the field research centre in *Prague*, *Czechoslovakia*; Dr C. C. Chen and Dr M. T. Tsuang, at the field research centre in *Taipei*, *China*; and Drs L. Wynne and J. Strauss, chief collaborating investigators, and Drs J. Bartko and W. Carpenter at the field research centre in *Washington*, *D.C.*, *USA*.

A list of other staff contributing to the IPSS can be found in the Report of the International Pilot Study of Schizophrenia, Volume I, World Health Organization (1973).

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