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Psychiatric Diagnosis and Length of Illness as Predictions of Outcome

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PSYCHIATRIC DIAGNOSIS AND LENGTH OF ILLNESS AS PREDICTORS OF OUTCOME

by

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VITA

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The following is a list of her publications:

Lechert, J., Harrow, M., Schyve, P., Grossman, L.S., & Meltzer, H.Y. How should schizoaffective disorders be classified? Scientific Proceedings, 134th Annual Meeting of the American Psychiatric Association, 1981, 187-188.

Grossman, L.S., Harrow, M., Lazar, B., Kettering, R., Lechert, J., & Meltzer, H.Y. Do thought disorders persist in manic patients? Scientific Proceedings, 134th Annual Meeting of the American Psychiatric

Association, 1981, 230-231.

Grossman, L.S., Harrow, M., Fudala, J.L., & Meltzer, H.Y. The longitudinal course of schizoaffective disorders: A prospective follow-up study. Journal of Nervous and Mental Disease, In Press.

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CHAPTER I

INTRODUCTION

Concepts about the nature of schizophrenia include predictions about the course of the disorder over time and about the ultimate outcome of individuals with schizophrenia. Early descriptions of schizophrenia have included assumptions that progressive deterioration and poor outcome are necessarily associated with a diagnosis of schizophrenia. Some theoreticians distinguish "true" schizophrenia from a schizophrenia-like psychosis from which recovery is possible. They argue that any patient who recovers could not have been suffering from schizophrenia, since schizophrenia is defined partly by its poor outcome.

Modern-day treatments of schizophrenia have resulted in fewer patients being chronically hospitalized or showing the kind of progressive deterioration that was typical a few decades ago. While some researchers are reporting that schizophrenic patients continue to show poor outcome, there have been a number of recent studies which report improvement in the clinical condition of schizophrenic patients over time. Studies of the post-hospital course of illness in schizophrenic patients are necessary to determine how to conceptualize schizophrenia. Follow-up studies will have important implications in regard to treatment of the disorder and after-care plans for patients.

The present study evaluates the outcome of schizophrenic patients in several areas of functioning, including symptomatology and occupational success. Comparisons are made between schizophrenic patients and patients with other psychiatric diagnoses on indices of post-hospital functioning. In the present study schizophrenic patients in the early stages of the disorder are compared to schizophrenic patients with a longer history of illness.

Since the present study compares schizophrenic patients at two stages of illness and compares patients with schizophrenia to patients with other psychiatric disorders, it is hoped that it can make a significant contribution to the understanding of the functioning of schizophrenics after hospitalization.

CHAPTER II

REVIEW OF THE RELATED LITERATURE

Diagnosis and its Relation to Outcome

When Kraepelin (1919) first described dementia praecox, a group of syndromes with similarities in onset and course, a negative outcome with progressive deterioration was intrinsic to his concept of the disorder. Bleuler (1950) re-labeled the disorder schizophrenia, and conceptualized a course that could be chronic and deteriorating, or could be intermittent with improvements followed by declines in functioning. Bleuler did not allow for complete recovery from schizophrenia, noting that residual symptoms always lingered.

The American Psychiatric Association's DSM-III (1980) continues to be based on assumptions about separating patients into diagnostic groups and conceptualizing a patient's prognosis according to a diagnostic category. In this formulation, a diagnosis of schizophrenia carries with it implications for an outcome which is less favorable than that for other psychiatric diagnoses.

The issue of diagnosis is an important one in terms of evaluating results from follow-up studies. Stephens (1972) noted that "Patients diagnosed schizophrenics have an outcome on long-term follow-up related to the criteria by which the diagnosis was based (p. 444)." Stephens emphasized the difficulties in comparing follow-up studies because of

the differences in diagnostic criteria used by different researchers. If the diagnostic criteria delimit a narrowly-defined group, poor outcome for schizophrenia is the likely conclusion. If atypical and reactive patients are included by using broader diagnostic criteria, the more likely conclusion is a heterogeneous outcome which allows for remission and recovery. According to Stephens (1978), certain variables which are considered indicative of a good prognosis for schizophrenia are often used in making diagnoses. Variables such as acute onset, average or above intelligence, precipitating factors, depressive features, and family history of affective disorder are good prognostic indicators for schizophrenia (Vaillant, 1964). However, in many cases the presence of these prognostic signs would cause patients to receive diagnoses other than schizophrenia.

Strauss and Carpenter (1974) suggest that studies which find a poor outcome for schizophrenics may be basing the results on the tautology that chronic patients are chronic. That is, if a long course of illness is considered to be necessary for a diagnosis of schizophrenic disorder, then the diagnosis of schizophrenia is not being given until it is clear that a patient has a chronic disorder and thus a poor outcome. Strauss and Carpenter stress that the diagnosis of schizophrenia must be made without consideration of a patient's chronicity if outcome studies are to be meaningful.

Labelling theories of mental illness suggest that the process of diagnosing a person as schizophrenic can carry prognostic implications by setting up a chain of expectations of poor functioning. These expec-

tations influence the way an individual diagnosed as schizophrenic is treated by others in the society, and can lead to further deterioration (Scheff, 1974). According to labelling theories, schizophrenic patients will have poor outcomes partly because of the diagnostic label. A related issue is the effect of chronic institutionalization. In the past, a diagnosis of schizophrenia often resulted in long-term hospitalization. The period of hospitalization itself had potential influence on patient outcome, in the form of social withdrawal and loss of initiative (Goffman, 1961; Wing & Brown, 1970). Poor outcome in some schizophrenic patients could result from the combined effects of both the illness and the chronic institutionalization.

The assumption that schizophrenia has a poor prognosis has led to the definition of separate diagnostic categories for schizophrenic-like patients who may not follow a chronic course. Robins and Guze (1970) suggest that good prognosis schizophrenia should be considered as an illness distinct from schizophrenia. Langfeldt (1939) used the term schizophreniform psychosis to describe patients who resembled schizophrenics but showed good outcome. Langfeldt believed that these schizophreniform patients represented a diagnostic entity discrete from schizophrenia. Schizoaffective disorder, schizophreniform psychosis, and atypical psychosis are diagnoses suggested for patients who show some schizophrenic features but who are not expected to show the same chronic unremitting course as schizophrenic patients.

Those who believe that schizophrenia always follows a chronic course would contend that many patients with a diagnosis of schizo-

phrenia and a good outcome may have been misdiagnosed. Patients with affective disorders have many features in common with schizophrenic patients, and it is often difficult to determine if an actively psychotic patient fits into the category of schizophrenia or the category of affective disorder (Stone, 1980; Strauss & Carpenter, 1975). It has been suggested that many good-outcome schizophrenics should have been diagnosed as having an affective disorder. Vaillant (1962), in a follow-up study of 30 "recovered" schizophrenics, concluded

> Schizophrenics who recover have much in common with depressive psychoses... As a rule, the recovered schizophrenic presented symptoms suggestive of an affective psychosis and often possessed an heredity positive for psychotic depression (p. 541).

In a separate follow-up study, Vaillant (1963) found that among schizophrenic patients with good outcome, many had received diagnoses of manic-depressive disorder at some point in their lives.

Comparisons of follow-up studies must consider the diagnostic criteria used by the researchers to define schizophrenic groups. Studies conducted prior to DSM-III generally define a broader group of patients as schizophrenics than do more current studies. Studies using DSM-III or similar criteria may apply the diagnosis of schizophrenia only to patients with established chronicity and poor prognosis.

Outcome Studies of Schizophrenic Patients

M. Bleuler (1968) challenged the assumption that schizophrenia progresses toward complete deterioration. His observations of 205 schizophrenic patients over a period of 23 years was based on his personal treatment and knowledge of these patients.

> More than 20 or 30 years after the onset of a severe schizophrenic psychosis the general tendencies are towards an improvement. This improvement is by no means only apathy, it is not due mainly to a loss of energy and activity, it is not a burning-out, as it was formerly supposed to be. It is true that it is mostly a partial improvement, but it consists of a real appearance of both healthy and intellectual life and very warm-hearted, very human emotional life in certain situations and in contact with certain persons (p. 6)

In terms of shorter-term outcome, Bleuler (1974,1979) noted that the schizophrenics he followed, on the average, showed no further deterioration after five years of illness, but rather showed a tendency toward improvement. After five years of illness, about 25% of his sample were hospitalized, and 75% were living outside the hospital. Only 10% of Bleuler's schizophrenics were reported living in hospital wards for sverely ill chronic patients. Bleuler noted that the trend in recent years is for chronic schizophrenia to be more rare, and to be milder when it does occur; and for acute schizophrenia with improvement to become more frequent.

Bleuler combined his study of schizophrenic patients with observations on several other hospital groups for a total sample of 1158 schizophrenic patients (Bleuler, 1978). His major conclusion was that after an average of five years, the schizophrenic psychosis does not progress any further, but tends to improve. Although the condition of most patients fluctuates over time, Bleuler found that the trend in the fluctuations was in the direction of improvement. Bleuler stated that 25% of all schizophrenics recover entirely and remain recovered, 10% remain permanently hospitalized, and the others alternate between periods of acute psychosis and periods of improvement.

Klonoff, Hutton, Gundry, and Coulter (1960) also found the post-hospital course of schizophrenia to be more positive than earlier formulations would predict. These authors studied World War II veterans in British Columbia who carried a diagnosis of schizophrenia. Although most schizophrenics showed impairments in occupational functioning and decreased work status after hospitalization, the schizophrenic sample showed improvements in the areas of thinking, psychosis, and personality distortions. The range of interpersonal relationships tended to decrease, although many of the schizophrenics were able to establish some enduring relationships.

Huber, Gross, and Schuttler (1975) and Huber, Gross, Schuttler, and Linz (1980) followed 502 schizophrenic patients longitudinally over an average course of illness of 22 years. Twenty-two percent of the sample obtained a state of complete remission, a result very similar to that in Bleuler's studies. However, the authors cautioned that for individual patients, even a complete recovery does not guarantee life-long freedom from symptoms. A small percentage of "recovered" schizophrenic patients develop a recurrence of psychotic symptoms, and 15% develop residual syndromes after a period of time free of signs of illness. These studies also reported a high percentage (56%) of schizophrenic patients who were socially recovered at the time of the follow-up. Social recovery was defined as being fully employed either at or below a previous occupational level.

In a similar study, Ciompi (1980) followed up 289 schizophrenic patients an average of 37 years after their initial hospitalizations.

Twenty-seven percent of these patients were recovered at the time of the follow-up, 22% had mild signs of schizophrenia, 24% showed moderately severe deterioration, and 18% were severely ill. Combining the first two categories, almost half of the schizophrenic patients were seen as having a favorable outcome.

Lo and Lo (1977) did follow-up evaluations on 82 schizophrenic patients 10 years after assessment at a psychiatric clinic in Hong Kong. Sixty-five percent of the patients were determined to have either a lasting remission or only mild deterioration with some relapses. More specifically, Lo and Lo report that 21% of their sample had lasting remission, 44% had relapses with no or only mild deterioration, 22% were found to have relapses with moderate deterioration or residual psychotic symptoms, and 12% had symptoms which were persistent or incapacitating.

Vaillant (1964) followed 72 schizophrenic patients 12 to 15 years after hospitalization, and 103 patients one to two years after hospitalization. Twenty-five percent of the short-term follow-ups had achieved full remission. In the long-term group, 41% of the patients were classified as social remissions, and the other 59% were functioning poorly. In another study, Vaillant (1963) reported on a 50 year follow-up of 12 recovered schizophrenics who were diagnosed between 1904 and 1906 and were considered recovered at the time of hospital discharge. Vaillant found that although 75% of these patients eventually were rehospitalized, the majority of the recovered schizophrenics were leading independent, working lives 25 years after admission. Vaillant's conclusion was that schizophrenics do recover, but retain a vulnerability to psychosis.

Vaillant's findings of relatively good outcome must be considered in light of the fact that, as mentioned previously, many of Vaillant's schizophrenic patients were diagnosed manic-depressive when they relapsed. It is likely that many of these patients would not have been diagnosed as schizophrenic by more modern diagnostic systems.

Astrachan, Brauer, Harrow, and Schwartz (1974) found that when symptom picture at follow-up is examined more closely, schizophrenic outcome appears to be more negative. These authors followed 132 schizophrenic patients, excluding patients who were continuously hospitalized or rehospitalized at the time of the follow-up. They found that two-thirds of the schizophrenic patients had some evidence of psychotic symptoms two to three years after hospital discharge. Twenty-five percent were considered actively psychotic at the time of the follow-up. Of the 41 schizophrenic patients in the study who did not evidence psychotic symptoms at follow-up, 36 had significant neurotic symptoms.

Harrow, Jacobs, Westermeyer, and Grinker (1982) examined changes in the course of schizophrenic illness by comparing schizophrenic patients in the first four years of illness with longer-term schizophrenic patients. At follow-up, 57% of the patients assessed five or more years after their first psychotic break were free of psychotic symptoms. The data suggested that after five years of illness, psychotic symptoms in schizophrenics begin to diminish. This improvement in functioning was not reflected in measures of overall outcome, suggesting that defects in social and occupational spheres do not show the same pattern of remission as do psychotic symptoms.

Pollack, Levenstein, and Klein (1966) followed up 81 schizophrenic patients three years after hospitalization. A wide variety of outcomes was found, suggesting that schizophrenia may not be a unitary clinical entity. The results indicated a significantly worse outcome for schizophrenics whose first episode was during adolescence than for schizophrenics whose first episode was in adulthood. The differences in outcome included a higher rate of relapse and a lower level of occupational functioning for the shizophrenics whose illness began during adolescence.

Gittleman-Klein and Klein (1969) followed up 84 schizophrenic patients two years after hospitalization. Thirty-six of the patients were classified as functioning adequately, and 48 had very poor overall outcome. The authors also found that premorbid social functioning was correlated with functioning at follow-up.

Comparisons with Other Psychiatric Groups

Because schizophrenia is usually conceptualized as including a course and outcome which is more negative than that of other psychiatric disorders, many researchers compare outcome of schizophrenic patients to outcome of psychiatric patients with other diagnoses.

Strauss and Carpenter (1972, 1975) studied a cohort of psychiatric patients two years after hospital admission and again five years after admission. Eighty-five patients in the follow-up sample were diagnosed as schizophrenic, the others were diagnosed affective psychoses, neurotic disorders, and personality disorders. The outcome of the schizophrenic group was compared to the non-schizophrenic patient group. At

the two year follow-up, the authors noted, "Although the level of dysfunction of schizophrenics at follow-up was slightly poorer than the non-schizophrenics, the degree of overlap was impressive (Strauss & Carpenter, 1972, p. 745)." At the five year follow-up, results were similar. The authors found that schizophrenic outcome ranged from severe impairment to full recovery. Strauss and Carpenter stress the heterogeneity of outcome rather than a universally poor outcome for schizophrenics.

> There are authorities today who believe that recovery is incompatible with a diagnosis of schizophrenia and many more who consider that the diagnosis implies deteriorating course and poor outcome for most patients. However, in recent years considerable variability in the course of illness has been documented from both clinical and research experiences (Strauss & Carpenter, 1981, p. 59).

Strauss and Carpenter believe that early models of schizophrenia as a disorder leading to progressive deterioration were based on samples of chronic institutionalized patients. They suggest that, as treatment availability has increased, more recently-ill and mildly ill schizophrenics are being evaluated, and that these samples include more cases with good prognosis. Additionally, modern treatment of schizophrenia includes shorter hospital durations and an effort to get patients involved socially and in communities. Strauss and Carpenter suggest that this change in treatment efforts has helped to produce a revision of the poor prognosis once associated with schizophrenia.

The International Pilot Study of Schizophrenia (Sartorius, Jablensky, & Shapiro, 1977) followed 90% of an original sample of 1202 patients in nine countries. Follow-up evaluations were conducted two years after initial evaluation. Like Strauss and Carpenter's study,

this study found a wide variability in schizophrenic outcome. In terms of overall outcome, 26% of the schizophrenics were found to have a good outcome, including full remission and no social impairment. Eighteen percent of the schizophrenic sample had a very poor outcome, with continual psychosis, and 56% had intermediate outcomes. Generally, schizophrenics fared worse than other psychiatric groups, but in some countries the differences between schizophrenic and non-schizophrenic groups were small. The wide variability of outcomes was interpreted as meaning that the diagnosis of schizophrenia has low predictive power. However, the authors stress that a diagnosis of schizophrenia does have prognostic implications.

In a two year and a five year follow-up of schizophrenic and borderline patients (Carpenter & Gunderson, 1977; Gunderson & Carpenter, 1975) no significant differences were found between the groups on rehospitalization, employment, absence of symptoms, or overall functioning. The schizophrenic group did show a significant impairment in the area of quality of social relationships, relative to the borderline group.

Harrow and Silverstein (1977) studied 94 psychiatric patients, including 60 schizophrenic patients, during hospitalization and at a follow-up three years later. Of the schizophrenic group, 47% showed clear psychotic features at the time of the follow-up evaluation, and an additional 22% showed weak or sporadic psychotic features. The incidence of psychotic features was significantly greater in the schizophrenic group than in the non-schizophrenic group. Harrow and Silverstein concluded "the diagnosis of schizophrenia carries generally clear,

predictable diagnostic implications, and ... a schizophrenic state at the time of acute hospitalization suggests a moderate to high probability of subsequent psychotic symptoms (p. 614)."

Using a similar sample Harrow, Grinker, Silverstein, and Holzman (1978) assessed 132 psychiatric patients an average of 2.7 years after hospital discharge. In this study schizophrenic patients showed significant differences from non-schizophrenic patients on overall outcome, and on presence of psychotic features. In addition, schizophrenic patients showed a lower level of social and occupational adjustment. Fifty percent of the schizophrenic patients had a very poor outcome with marked symptomatology and low levels of adjustment, while only about 15% showed adequate functioning. These authors concluded that modern-day schizophrenic patients continue to show lower levels of functioning after hospitalization than do psychiatric patients with other diagnoses, and that schizophrenic outcome, though better now than in earlier decades, is still a negative one.

Grinker, Harrow, Westermeyer, Silverstein, and Cohler (1981) also reported on significantly more negative outcome for schizophrenic than for non-schizophrenic patients, but found that both groups showed a tendency to improve as the time since hospitalization lengthened. Patients were followed three years and five years after hospitalization. The schizophrenic patients showed a lower incidence of psychosis and a lower rate of rehospitalization at the second follow-up than they had shown at the first follow-up. The authors concluded that schizophrenic patients show poor post-hospital functioning, but that some schizophrenic

patients tend to improve three to five years after a period of illness.

Summary of Related Literature

Progressive deterioration and poor functioning in all areas was once thought to be inevitable for schizophrenic patients. This prognosis has been modified to some extent by recent research. M. Bleuler and other researchers emphasize that the majority of schizophrenic patients today live outside of hospitals, and a substantial number recover and show no further signs of illness. Among schizophrenic patients who relapse and are rehospitalized, many show adequate functioning between relapses. Other studies have found that symptoms of illness, including psychotic symptoms, persist in schizophrenic patients after hospital discharge. There is some evidence that psychotic symptoms begin to diminish after about five years of illness. Some researchers conclude that schizophrenic patients regain an adequate level of occupational functioning, other researchers find severe impairment in this area of functioning.

When compared to other psychiatric groups, schizophrenic patients tend to do worse in most areas of functioning. However, there is overlap between groups in that some schizophrenics do well and some patients with other diagnoses do very poorly. Schizophrenics, and possibly psychiatric patients in general, may show some improvements in functioning after an initial period of decline.

Present Study

The present study is similar in design to the study by Harrow, Jacobs, Westermeyer, and Grinker (1982). In the present study, changes in schizophrenic functioning over time will be evaluated by a comparison of schizophrenic patients assessed within the first four years of illness with schizophrenic patients assessed after five or more years of illness. This study differs from the previous one in that patients will be assessed on functioning in a number of areas in addition to the presence of psychotic symptoms. In the present study, subjects are from a patient population at a state hospital. The previous study had used a patient sample from a private hospital. Also, the present study uses a comparison group of depressed and schizoaffective patients to examine if patterns of schizophrenic outcome generalize to other psychiatric groups.

Five hypotheses will be tested.

1. The schizophrenic patients have a pattern of outcome which is more negative than that of a comparable group of non-schizophrenic patients. This pattern includes lower levels of overall adjustment and occupational functioning, and a higher incidence of rehospitalization and psychotic symptoms for Schizophrenic patients as compared to nonschizophrenic patients.

2. Among patients in the first four years of illness, schizophrenic patients have a more negative level of overall adjust-

ment at follow-up than do non-schizophrenic patients.

3. Among patients who have a five year or greater history of illness, schizophrenic patients have a more negative level of overall adjustment than do non-schizophrenic patients.

4. Schizophrenic patients show signs of improvement after about five years of illness. Schizophrenic patients whose first episode of illness was five years or more prior to the follow-up evaluation have more positive patterns of outcome than do schizophrenic patients who are in the first four years of illness. This pattern includes higher levels of overall adjustment and occupational functioning, and a lowered incidence of rehospitalization and psychotic symptoms.

5. Non-schizophrenic psychiatric patients also show signs of improvement after about five years of illness. Schizoaffective and depressed patients whose first episode of illness was five or more years prior to the follow-up evaluation have more positive patterns of outcome than do schizoaffective and depressed patients who are in the first four years of illness.

CHAPTER III

METHOD

Subjects

The subject population consisted of 125 psychiatric patients who were part of an ongoing research program at Illinois State Psychiatric Institute (ISPI). The mean age at hospitalization of the patients in the follow-up sample was 30 years. Fifty-four percent (67) of the subjects were male and 46% (58) were female. The majority of the subjects were from social classes III - V according to the Hollingshead-Redlich Scale (Hollingshead & Redlich, 1958). This is a five-point scale, with social class I denoting upper-class and social class V denoting lower class. Table 1 gives the mean age, education level, social class, and number of previous hospitalizations for the follow-up sample and for each diagnostic group.

All subjects were diagnosed at the time of hospitalization according to the Research Diagnostic Criteria (RDC). The follow-up sample included 40 patients diagnosed as schizophrenic by the RDC, 44 patients diagnosed as schizoaffective, and 41 patients diagnosed as Major Depressive Disorder. There was a larger percentage of male subjects among the schizophrenic group and a larger percentage of female subjects among the depressed group. This sex difference is to be expected, as it reflects a general tendency in psychiatric populations.

TABLE 1

Demographic Information on the Patient Sample

Patient Group	N	Age Mean(SD)	Educational Level Mean(SD)	Previous Hospitalizations Mean(SD)	Social Class Mean(SD)
Schizophrenic Patients	40	27.8(8)	11.4(2.6)	2.6(3.9)	4.3(1)
Schizoaffective Patients	44	30.1(9)	11.7(3)	2.5(2.7)	3.6(1)
Depressed Patients	41	32.7(11)	12.9(3)	1.8(2.2)	3.2(1)

Measures

The diagnostic system used in the study, the RDC, is a set of criteria for functional psychiatric disorders, developed in order to establish a consistent diagnostic system for the description and selection of subjects for research programs in various settings (Spitzer, Endicott, & Robins, 1975, 1978). The RDC include both inclusion and exclusion criteria for diagnosing many psychiatric disorders, to facilitate separating out atypical psychotic reactions from the more typical or clear-cut syndromes. Diagnoses were facilitated by the use of two structured interviews, the Schedule for Affective Disorders and Schizophrenia (SADS; Spitzer & Endicott, 1978), and the Present State Examination (PSE; Wing, Cooper & Sartorius, 1974).

The Global Assessment Scale (GAS; Endicott, Spitzer, Fleiss, & Cohen, 1976) was rated during the first week of hospitalization. The GAS is a simple rating scale for evaluating the overall functioning of a patient during a specified time period on a continuum from psychiatric illness to health. Scores range from 1 (extremely poor functioning, severe symptoms) to 99 (well-adjusted, no impairment).

A structured interview developed by Harrow, Grinker, Silverstein and Holzman (1978) was used to evaluate functioning in specific areas. The following areas of adjustment were included in the assessment interview: 1) social functioning, 2) occupational performance, 3) psychotic symptomatology, 4) cognitive functioning and thought disorders, and 5) incidence of relapse or rehospitalization. The scales used to measure

social and occupational functioning have cut-off points producing categories of good, intermediate, and poor functioning in these areas. The occupational functioning scale also assessed an individual's functioning according to whether the individual's primary occupation was that of a worker outside the home, a homemaker, or a student.

The Schedule for Affective Disorders and Schizophrenia (SADS) was used to assess current symptomatology. Psychotic symptoms were rated on a three-point scale, 1 indicating absence of psychotic symptoms, 2 indicating weak, uncertain, or sporadic symptoms, and 3 indicating psychotic symptoms definitely present.

Two composite scales which give an index of overall outcome were also used. One of these, an outcome scale developed and used by Strauss and Carpenter (1972,1974) produces scores in the four areas of (1) rehospitalization, (2) social contacts, (3) work performance, and (4) presence and severity of symptoms. These scale scores are then combined to obtain an overall outcome score for each subject. Possible scores on the Strauss - Carpenter index range from 0 (poor functioing in all 4 areas) to 16 (adequate functioning in all 4 areas).

The second measure of overall outcome was the Levenstein, Klein, and Pollack (1966), LKP, index. The LKP index takes into account work and social adaptation, life disruptions, self-support, symptomatology, relapse, and rehospitalization. A decision-tree approach produces a score for each subject on a nine-point scale of overall outcome. This nine-point scale can be divided into categories of good outcome (scores

of 1 or 2), intermediate or equivocal outcome (scores of 3 - 6), and poor outcome (scores of 7 - 9).

Procedure

The Mental Health Clinical Research Center for the Study of the Major Psychoses is a multidisciplinary research program funded by the National Institute of Mental Health to study the biological and psychological factors in major psychiatric disorders. Subjects in the research program are studied at the time of their hospitalization at ISPI, and then studied longitudinally one, three, and five years after hospitalization. Follow-up evaluations included detailed assessments of functioning in the time interval between hospitalization and the follow-up interview. Since the longitudinal phase of the research program is still in its early stages, the current study focuses on comparisons of patient groups at the time of the one year follow-up.

Attempts were made to contact all the subjects in the original sample, approximately one year after each subject's discharge from ISPI. Subjects who were available for the follow-up assessment were paid for their participation in the project. Eighty percent of the original sample participated in the follow-up assessment. Patients in the follow-up sample were compared to those patients not available for follow-up. A series of t-tests indicated that the patients in the follow-up sample did not differ significantly from those not available for follow-up on age, t (144) = .97, p>.05, on social class, t (100) = 1.55, p>.05, or on

the Global Assessment Scale rating at admission, t (123) = .87, $p > .05$. The average interval between hospital discharge and follow-up session was 13 months.

To examine outcome as a function of years since first incidence of psychosis, patients' psychiatric histories were examined, and a determination was made for each subject as to the year of initial onset of psychiatric illness. Patients were divided into two groups according to whether the time interval between the first onset of illness and the follow-up assessment was between one and four years (recent onset group) or five or more years (early onset group). There were 18 recent-onset schizophrenics and 22 early-onset schizophrenics. In the schizoaffective group there were 18 recent-onset subjects and 26 early-onset subjects. Among the depressed subjects 24 were recent-onset subjects and 17 were early onset subjects. The mean age of the recent-onset group was 26, and the mean age for the early-onset group was 34. This difference was significant, t (123) = 4.86, $p < .05$.

The following comparisons were made:

1. Schizophrenic subjects were compared with schizoaffective and depressed subjects on the LKP and Strauss-Carpenter measures of overall outcome, on occupational functioning, the presence of psychotic symptoms, and the incidence of rehospitalization;

2. Schizophrenic subjects with recent onset were compared to recent-onset subjects in the schizoaffective and depressed

groups on the same outcome measures;

3. Schizophrenic subjects with early onset were also compared to early-onset subjects in the other two groups;

4. Within the schizophrenic group, subjects with early onset were compared to subjects with recent onset on outcome measures to determine if differences indicated changes in functioning over time; and

5. Early-onset and recent-onset comparisons were also made within the depressed and schizoaffective groups.

CHAPTER IV

RESULTS

Comparisons Between Diagnostic Groups

Overall Outcome. Table 2 reports the results of the comparison of schizophrenic, schizoaffective, and depressed patients on the LKP scale of overall outcome. On the basis of LKP score, patients were categorized as having good, intermediate, or poor outcome. A good outcome on this scale (scores of 1 or 2) means adequate functioning with a possible relapse of brief duration. Intermediate outcome (scores of 3 to 6) includes moderate symptom levels, some period of hospitalization, or total dependence on others. A poor outcome (scores of 7 to 9) means that the subject has continuous marked symptoms, is not self-supporting, and has been rehospitalized. Only 7.5 % of the schizophrenic group showed good overall functioning in the year between hospitalization and follow-up assessment. In contrast, 22.7 % of the schizoaffective group and 34.1 % of the depressed group showed good overall functioning at follow-up. The majority of the schizophrenic subjects (62.5%) showed overall functioning in the poor category (scores of 7 or 8). Only 34.1% of the schizoaffective subjects and 24.4% of the depressed subjects showed outcome scores in the poor category.

TABLE 2

Overall Outcome for Schizophrenic, Schizoaffective, and Depressed Groups

Patient Group	LKP Scale of Overall Outcome: Good (1-2)	Intermediate (3-6)	Poor (7-9)	Mean	SD	N
Schizophrenic Patients	7.5%	30.0%	62.5%	6.1	1.8	40
Schizoaffective Patients	22.7%	43.2%	34.1%	4.8	2.3	44
Depressed Patients	34.1%	41.5%	24.4%	4.0	2.4	41

One-way analysis of variance: $F(2,122) = 9.25$, $p < .001$

A one-way analysis of variance indicated significant differences between diagnostic groups on the LKP scale, F (2,122) = 9.25, $p < .001$. Planned comparisons showed that the schizophrenic group differed significantly from the non-schizophrenic patients. ($p < .01$). A Student-Newman-Keuls post-hoc analysis showed no significant differences between the depressed group and the schizoaffective group.

Group comparisons using the Strauss-Carpenter scale of overall outcome yielded similar results to those obtained using the LKP scale. A one-way analysis of variance indicated a significant between-groups difference, F (2,120) = 11.88, $P < .001$. For two subjects, a score on the Strauss-Carpenter scale was not available. Planned comparisons showed that the schizophrenic group differed significantly from the non-schizophrenic groups, $P < .05$. A Student-Newman-Keuls test showed that the schizoaffective and the depressed groups were also significantly different from each other, $p < .05$.

The results on both measures of overall outcome indicate that schizophrenic subjects at the one year follow-up functioned at a poor level of overall adjustment relative to the schizoaffective and depressed subjects. This is in support of Hypothesis 1, which stated that schizophrenic patients have a pattern of outcome which is more negative than that of non-schizophrenic patients.

Separate comparisons were performed on the measures of overall outcome using only subjects with recent onset of illness, to determine if the diagnostic groups differ in the early stages of psychiatric ill-

ness. A one-way analysis of variance using the LKP scale showed significant between-group differences, F (2,57) = 3.50, $p < .05$. Planned comparisons showed that recent-onset schizophrenics had a significantly higher LKP score (indicating a worse overall outcome) than did recent-onset non-schizophrenic subjects, $p < .05$. This is in support of Hypothesis 2, which states that among patients in the first four years of illness schizophrenic patients have a more negative level of overall adjustment than do non-schizophrenic patients. A Student-Newman-Keuls post-hoc analysis showed that the depressed and schizoaffective groups did not differ significantly from each other.

To compare diagnostic groups at a later stage of illness separate analyses were performed using the early-onset subjects. A one-way analysis of variance yielded significant differences on the LKP scale between diagnostic groups, F (2,62) = 5.34, $p < .01$. Planned comparisons indicated that the early-onset schizophrenics functioned at a significantly lower level of overall outcome than did the early-onset non-schizophrenics, $p < .05$. This is in support of Hypothesis 3, which states that among patients with a five year or greater history of illness schizophrenic patients have a more negative level of overall adjustment than do non-schizophrenic patients. A Student-Newman-Keuls post-hoc analysis showed that the depressed and schizoaffective groups did not differ significantly from each other.

Taken together, these two analyses indicate that schizophrenic subjects differ in terms of overall outcome from subjects in other diag-

nostic groups in two stages of illness. Schizophrenics in the first four years of illness and schizophrenics with a history of five or more years since first onset have a poor outcome relative to subjects with schizoaffective or depressed diagnoses.

Specific Areas of Outcome. Table 3 reports the percentages of patients who, as determined by the SADS interview, had psychotic symptoms at the time of the follow-up assessment. The majority of the schizophrenic subjects (55%) were clearly psychotic at follow-up, and another 10 % showed intermittent or psychotic-like symptoms. In contrast, the majority of subjects in the other two diagnostic groups (51% of the schizoaffectives and 68% of the depressed subjects) were free of psychotic symptoms at follow-up. A chi-square analysis showed that the differences in occurence of psychotic symptoms approached significance, chi-square (4) = 9.03, $p = .06$.

TABLE 3

Incidence of Psychotic Symptoms at Follow-up in

Schizophrenic, Schizoaffective, and Depressed Groups

Patient Group	N	Presence of Psychotic Symptoms		
		Absent	Intermediate	Present
Schizophrenic Patients	40	35%	10%	55%
Schizoaffective Patients	43	51%	9%	39.5%
Depressed Patients	41	66.7%	10.3%	23.1%

chi-square (4) = 9.03, $p = .06$.

Table 4 reports the percentages of patients in each group that were rehospitalized in the interval between hospital discharge and the follow-up assessment. Forty-five percent of the schizophrenic subjects had been rehospitalized. The schizoaffective and depressed groups had similarly high rates of rehospitalization (43% for the schizoaffective group and 34% for the depressed group). There were no differences among diagnostic groups on the incidence of rehospitalization, chi-square (2) = 1.47, $p > .05$.

Incidence of rehospitalization is a major factor in determining overall outcome. Subjects who had been rehospitalized in the past year and those not rehospitalized in the past year were compared on LKP score. As expected, patients not rehospitalized had a significantly better overall outcome, t (123) = 6.91, $p < .001$. Among those patients not rehospitalized in the past year, the diagnostic groups were compared on overall outcome score. A one-way analysis of variance showed a significant difference between groups on the LKP scale, F (2,71) = 10.08, $p < .001$. Planned comparisons showed a significant difference between schizophrenic and non-schizophrenic groups, $p < .001$. A Student-Newman-Keuls test showed that the schizoaffective and depressed groups were not different. When the factor of rehospitalization is removed, and only those patients not rehospitalized in the past year are considered, schizophrenics still show a significantly more negative overall outcome than do non-schizophrenic patients.

TABLE 4

Incidence of Rehospitalization in the Past Year for Schizophrenic, Schizoaffective, and Depressed Groups

Patient Group	N	Not Rehospitalized	Rehospitalized
Schizophrenic Patients	40	55%	45%
Schizoaffective Patients	44	57%	43%
Depressed Patients	41	67%	34%

chi-square (2) = 1.47, $p > .10$.

Scores on the scale measuring occupational functioning for employment, homemaking, and students were evaluated for differences among diagnostic groups. Table 5 reports the results of the comparison of diagnostic groups on occupational functioning. The majority of the schizophrenic subjects (60%) were classified as having poor occupational adjustment. Only 12.5% of the schizophrenic group showed occupational functioning in the good category. In contrast, 50% of the schizoaffective group and 61% of the depressed group had scores in the good category of occupational functioning. A one-way analysis of variance on the raw scores on occupational functioning indicated significant differences among the diagnostic groups, F (2, 122) = 7.52, $P < .001$. Planned comparisons indicated that the schizophrenic group differed significantly from the non-schizophrenic groups, $p = .001$. A Student-Newman-Keuls test showed that differences between the depressed group and the schizoaffective group were not significant.

TABLE 5

Occupational Functioning of Schizophrenic, Schizoaffective, and Depressed Groups

Patient Group	Occupational Functioning					
	Good	Intermediate	Poor	Mean	SD	N
Schizophrenic Patients	12.5%	27.5%	60%	3.9	1.2	40
Schizoaffective Patients	50%	18.2%	31.8%	2.8	1.5	44
Depressed Patients	61%	9.8%	29.3%	2.7	1.9	41

One-way analysis of variance: $F(2,122) = 7.52, p<.001$

Hypothesis 1 stated that schizophrenic patients have a pattern of outcome which is more negative than the pattern shown by non-schizophrenic patients. Comparisons of diagnostic groups on specific areas of outcome lend mixed support to this hypothesis. As predicted, schizophrenic patients did show lower levels of overall adjustment and occupational functioning than did non-schizophrenic patients. However, the expected significant differences between schizophrenic and non-schizophrenic patients on the incidence of rehospitalization and psychotic symptoms were not obtained.

Recent-Onset and Early-Onset Schizophrenics

Overall Outcome. Recent-onset and early-onset schizophrenic groups were compared on the LKP scale of overall outcome. Among the schizophrenics in the first four years of illness (recent-onset group) 50% scored in the poor category of overall outcome, and only 11.1% were categorized as having a good outcome. The early-onset schizophrenics, with a five year or greater history of illness, tended to show a more negative picture. Of this group, 72.7% were in the poor outcome category, and 4.5% had a good outcome. A t-test showed that the difference between the groups was not significant, t (38) = 1.12, $p > .05$. On the Strauss-Carpenter scale of overall outcome, the early-onset schizophrenics and recent-onset schizophrenics had similar average scores, with no significant difference between the groups on a t-test, t (38) = .02, $p > .05$.

Specific Areas of Outcome. Table 6 reports the incidence of rehospitalization in early-onset and recent-onset schizophrenics. One year after discharge, 55.6% of the recent-onset group had been rehospitalized at least once in the past year, and only 36.4% of the early-onset group had been rehospitalized. The difference in incidence of rehospitalization between early-onset and recent-onset schizophrenics was not significant, chi-square (1) = 1.47, $p > .05$. Recent-onset and early-onset schizophrenic groups were compared on incidence of psychotic symptoms at the time of the follow-up interview. In the recent-onset group, 44.4% had psychotic symptoms at follow-up, and 63.6% of the early-onset group had psychotic symptoms at follow-up. The difference between early-onset and recent-onset schizophrenics on incidence of psychotic symptoms was not significant, chi-square (2) = 2.26, $p > .05$. Occupational functioning in early-onset schizophrenics and recent-onset schizophrenics was similar, with the early-onset group showing a non-significant tendency to have a lower level of functioning in this area, t (38) =1.15, $p > .05$.

TABLE 6

Rehospitalization of Recent-Onset and Early-Onset Schizophrenic Patients

Patient Group	N	Not Rehospitalized	Rehospitalized
Recent-Onset Schizophrenics (1-4 years since onset)	18	44.4%	55.6%
Early-Onset Schizophrenics (5 or more years since onset)	22	63.6%	36.4%

chi-square (1) = 1.47, $p > .10$.

Overall, the results from the comparison of schizophrenics with recent onset and schizophrenics with early onset showed nonsignificant tendencies for the recent-onset group to have a better outcome. This tendency is in the opposite direction of that predicted by Hypothesis 4, which stated that schizophrenic patients with a five year or greater history of illness have a more positive pattern of outcome than schizophrenics in the first four years of illness.

Recent-Onset and Early-Onset Non-schizophrenics

Comparisons were made between recent-onset and early-onset subjects in the schizoaffective and depressed groups. No significant difference was found between recent-onset and early-onset schizoaffective subjects on the LKP measure of overall outcome, t (42) =1.15, $p > .05$. No difference was found between recent-onset and early-onset depressed subjects on the LKP scale, t (39) =0.52, $p > .05$. The tendency in both diagnostic groups was for a more negative overall outcome in the early-onset patients.

The early-onset and recent-onset schizoaffective group did not show a difference in rate of rehospitalization in the past year, chi-square (1) = 1.20, $p > .05$., or in the incidence of psychotic symptoms at follow-up, chi-square (2) = 1.23, $p > .05$. For the depressed group, early-onset and recent-onset subjects did not differ on incidence of rehospitalization, chi-square (1) = .64, $p > .05$., or in the incidence of psychotic symptoms at follow-up, chi-square (2) = .09, $p > .05$.

Schizoaffective subjects with early onset showed a significantly lower level of occupational functioning than did schizoaffective subjects with recent onset, t (42) = 2.07, $p < .05$. There was no difference on occupational functioning between early-onset and recent-onset depressed subjects, t (39) = 0.14, $p > .05$.

The comparison of recent-onset and early-onset subjects in the schizoaffective and depressed groups was similar to the comparison within the schizophrenic group. There was a tendency for recent-onset subjects to have better functioning at follow-up than early-onset subjects, and this was significant only in the instance of occupational functioning of the schizoaffective group. The results in this area do not support Hypothesis 5 which stated that schizoaffective and depressed patients with a five year or greater history of illness have a more positive pattern of outcome than schizoaffective and depressed patients in the first four years of illness.

Table 7 outlines the major analyses performed and the results and levels of significance for comparisons between schizophrenic and non-schizophrenic groups and between recent-onset and early-onset groups.

TABLE 7

Summary Table of Major Comparisons

Comparison	Outcome Measures at Follow-up: LKP Overall Outcome*	Presence of Psychotic Symptoms**	Rehospitalization**	Occupational Functioning*
All Subjects Schizophrenics vs. Non-schizophrenics	$p<.01$	$p=.06$	N.S.	$p<.001$
Recent-Onset Group Shizophrenics vs. Non-schizophrenics	$p<.05$			
Early-Onset Group Shizophrenics vs. Non-schizophrenics	$p<.01$			
Schizophrenic Group Recent-Onset vs. Early-Onset	N.S.	N.S.	N.S.	N.S.
Non-schizophrenic Group Recent-Onset vs. Early-Onset	N.S.	N.S.	N.S.	$p<.05$

* Analysis used was one-way analysis of variance.
** Analysis used was chi-square.

CHAPTER V

DISCUSSION

Comparisons of Schizophrenic and Non-schizophrenic Groups

Hypothesis 1 predicted that schizophrenic patients would show a more negative pattern of outcome than would non-schizophrenic psychiatric patients. This pattern was found, with the schizophrenic patients showing a significantly more negative overall outcome, significantly worse occupational functioning, and a higher incidence of psychotic symptoms which approached significance. More than half of the schizophrenic group showed a poor overall outcome, and a similar percentage showed poor occupational functioning. A majority of the schizophrenic patients continued to experience psychotic symptoms. Nearly half of the schizophrenic patients had been rehospitalized in the previous year, although this did not differentiate the schizophrenics from the other diagnostic groups. These results are similar to those obtained by Astrachan et al. (1974) in that they present a generally negative picture of the post-hospital functioning of schizophrenics.

Comparisons of recent-onset schizophrenics with recent-onset non-schizophrenic patients yielded similar results. As predicted by Hypothesis 2, recent-onset schizophrenics showed a pattern of outcome significantly more negative than that shown by recent-onset non-schizophrenics. Early-onset schizophrenics also showed a pattern of outcome

significantly more negative than that shown by early-onset non-schizophrenics, as predicted by Hypothesis 3. In patients in the first four years of illness, and in patients with a five year or greater history of illness, schizophrenic patients show an outcome that is poor relative to that of non-schizophrenic patients. When incidence of rehospitalization is controlled for, and only those patients not rehospitalized in the past year are considered, the results are the same. Schizophrenic patients who have stayed out of the hospital for the past year function at a significantly lower level than do non-schizophrenic patients not rehospitalized in the past year. One year after hospital discharge, schizophrenic patients are seen as having a significantly lower level of functioning regardless of the length of illness or the incidence of rehospitalization.

The negative pattern of outcome for schizophrenic patients could reflect, in part, a self-fulfilling prophecy. That is, if a diagnosis of schizophrenia is assumed to imply a poor prognosis, this expectation can have an impact on the patients so diagnosed. If society, including family and clinicians, behave according to the assumption that a schizophrenic patient will have a chronic deteriorating course, schizophrenic individuals may react by fulfilling these expectations.

The results on comparisons of diagnostic groups indicate a lower level of functioning for schizophrenics at the posthospital phase of illness. The results do not address the issue of whether this is indicative of a downhill progression for schizophrenic patients or of a tendency for schizophrenic patients to maintain a level of functioning that

is lower than that of non-schizophrenic patients both during hospitalization and afterwards. An additional post-hoc analysis was performed to compare the diagnostic groups on level of pathology at the time of hospitalization. The measure of pathology used was the GAS, which had been rated during the first week of hospitalization for 104 of the patients in the sample. A one-way analysis of variance indicated a significant between group difference on GAS score during the first week of hospitalization, f (2,101) = 4.77, $p<.05$. A Student-Newman-Keuls test showed that both the schizophrenic and schizoaffective groups had significantly worse scores on this scale than did the depressed group.

Thus, at hospitalization, the schizophrenic and schizoaffective groups had a level of functioning which was poor relative to that of the depressed group. At follow-up, the schizoaffective and depressed groups had a level of functioning (as assessed by the LKP scale) which was good relative to the schizophrenic group. These differences in functioning of subjects in the three groups indicate that depressed patients, at the time of illness, have a more favorable picture than do other groups. At follow-up also, depressed patients function relatively well. Schizophrenic patients have a low level of functioning at hospitalization, and they maintain a level of functioning which is poor relative to that of other psychiatric groups. Schizoaffective patients function at a low level when hospitalized, much like schizophrenic patients, but at follow-up the schizoaffectives achieve a level of functioning that is more similar to that of the depressed group. The schizoaffective group, with similarities in symptom picture and level of pathology to schizophrenic

patients, but also affective symptoms and a relatively good outcome, present a syndrome similar to good-prognosis schizophrenia. Another interpretation of the pattern of functioning of the schizoaffective group is that schizoaffective disorder is an illness which lies on a continuum between schizophrenia and affective disorders. The relationship between functioning of psychiatric groups at follow-up and the classification of schizoaffective disorders is discussed more fully in two earlier studies (Lechert, Harrow, Schyve, Grossman, & Meltzer, 1981; Grossman, Harrow, Fudala, & Meltzer, In Press).

Overall, the results from the comparison of schizophrenic outcome to non-schizophrenic outcome are similar to the findings of Harrow and Silverstein (1977) and Harrow et al.(1978). Schizophrenic patients after hospitalization are seen as continuing to show impairments in several areas of functioning, and to show a more negative pattern of outcome than patients with other psychiatric diagnoses.

Comparisons of Recent-onset and Early-Onset Patients

Hypothesis 4 predicted that schizophrenic patients with a five year or greater history of illness would show better functioning than would schizophrenic patients in the first four years of illness. Comparisons of recent-onset and early-onset schizophrenics did not lend support to this hypothesis. Recent-onset and early-onset schizophrenics did not differ significantly on outcome measures. On overall outcome, occupational functioning, and psychotic symptoms, the tendency was for recent-onset schizophrenics to have more positive functioning than early-onset schizophrenics. Outcome studies by Bleuler (1974, 1979), Klo-

noff et al.(1960) and others conclude that schizophrenic functioning after hospitalization begins to improve after five years of illness. The present results on overall outcome, occupational functioning, and psychotic symptoms suggest a weak opposite effect, that of continual deterioration in functioning after five years of illness.

When rates of rehospitalization in the past year were examined, there was a non-significant tendency for the recent-onset schizophrenics to have a higher incidence of rehospitalization than the early-onset schizophrenics. This suggests a tendency in the direction of a lower incidence of rehospitalization as the length of illness increases, similar to Bleuler's findings, and in support of Hypothesis 4.

In comparing schizophrenics by length of prior illness, a non-significant trend toward further impairment over time was noted in the areas of overall outcome, occupational functioning, and psychotic symptoms. A non-significant effect in the direction of improvement over time was noted on incidence of rehospitalization. Non-schizophrenic patients, with an outcome that was good relative to that of the schizophrenics, also showed a tendency for decline in functioning over time.

One possible explanation of the results concerns the method by which subjects were selected for the study. Subjects were followed one year after discharge from ISPI. Since patients were not necessarily followed from their first hospitalization, some patients with longer histories of illness may have been missed by this selection process. This is a drawback to the study, because patients with a longer history of illness who were not rehospitalized at ISPI would be excluded from

the study. If these patients could have been studied as well, it could have increased the number of patients in the early-onset group with favorable outcomes, and thus possibly influenced the results on the comparison of early-onset and recent-onset schizophrenics. The trend for schizophrenic patients to show a decline in level of functioning over time while showing a lowered incidence of rehospitalization over time suggests that patients thus excluded from the study may have had fewer hospitalizations, but would not necessarily have had good outcome scores. The selection process used could account partially for the results of the study, and limits to some extent the generalizability of the downhill trend for schizophrenics. The selection process could also have effected the results for schizoaffective and depressed patients in the recent-onset vs. early-onset comparisons.

A second possible explanation for the observed downhill trend of schizophrenic patients concerns the differences in assessing outcome between the present study and previous studies. In M. Bleuler's studies in which he concluded that schizophrenics improve after five years (Bleuler, 1974, 1979), his main criteria for improvement was that the patient was not hospitalized. Other studies also have relied heavily on rehospitalization for assessing outcome, and have found improvements over time in this area. The present study also found a trend for lowered incidence of hospitalization over time, but when overall outcome, occupational functioning, and symptomatology are examined, the trend was for more negative functioning over time. Many patients who are out of the hospital continue to show significant impairments in functioning in

these areas. The results from the present study suggest that the outcome of psychiatric patients must be viewed in terms of functioning in a number of areas, and not limited to whether a patient is in or out of the hospital.

A third possible explanation for the results on schizophrenic functioning over time concerns diagnosis. Previous studies have used DSM-II or similar systems to define schizophrenic groups. This results in a broader range of patients considered to be schizophrenic. The present study used the RDC to diagnose patients. The RDC were developed specifically for separating atypical reactions from the more clear-cut psychiatric syndromes, and provides a much more narrow delineation of schizophrenia. The RDC classification of schizophrenia is similar to that defined by DSM-III. Schizophrenic patients in the sample were re-diagnosed according to the DSM-III by a team of clinicians and researchers who reviewed the charts. Of the 40 patients diagnosed schizophrenic by the RDC, 35 were also diagnosed schizophrenic by DSM-III criteria. The narrower view of schizophrenia reflected by the RDC and DSM-III could define a group with a more negative prognosis than that defined by DSM-II and studied by previous researchers.

This explanation is supported by the finding that schizoaffective patients show a better outcome than do schizophrenic patients. The RDC and DSM-III provide specific criteria for the diagnosis of schizoaffective disorder. In previous diagnostic systems, including the DSM-II, patients with a combination of schizophrenic and affective symptoms were included in the category of schizophrenic disorder. Studies

using these earlier diagnostic systems may find improvements over time for schizophrenic patients because of the inclusion of schizoaffective patients in the diagnostic category. In the present study, schizoaffective patients were considered separately from the schizophrenic group, resulting in a more negative outcome for the narrowly-defined schizophrenic group.

A fourth possible explanation of the results has to do with the social class of the patients in the study. the present study is similar to one by Harrow, Jacobs, Westermeyer and Grinker (1982) conducted at Michael Reese Hospital. In that study, the patients were almost exclusively from social classes I,II, and III. In the present study, the majority of patients were from social classes III, IV, and V. Previous research has indicated that low social class has negative implications for the outcome of psychiatric patients (Myers & Bean, 1968; Schwartz, Myers, & Astrachan, 1976). Possibly, improvement in functioning over time does not pertain to lower-class psychiatric patients. Perhaps the self-fulfilling prophecy, as discussed earlier, has a greater impact on the post-hospital adjustment of lower social class patients who have fewer opportunities for success in treatment and rehabilitation.

The results from the present study can be viewed in relation to conclusions by Sartorius, Jablensky, and Shapiro (1977) and by Strauss and Carpenter (1972). These authors stress the heterogeneity of outcomes of schizophrenics and other psychiatric patients. In these two studies, as in the present study, schizophrenic patients showed a worse outcome than did non-schizophrenic patients, but there was overlap

between the groups. In the present study some, though few, schizophrenic patients showed adequate functioning, self-support, and no relapses or symptoms. In the depressed and schizoaffective groups, there were patients with continuous symptoms and poor functioning in all areas. Though schizophrenic and non-schizophrenic groups differed significantly, diagnosis alone cannot predict outcome for all patients.

Overall, the present study suggests that schizophrenic outcome is still a negative one relative to other psychiatric disorders, and in some cases leads to progressive deterioration in functioning. After hospital discharge, many schizophrenic patients continue to show low levels of functioning and major difficulties in adjustment. A tendency to show improvements in functioning over time, reported by other researchers, was not found in this case. On the contrary, comparisons of psychiatric patients at different stages of illness suggested a downhill trend in functioning, not only for schizophrenics, but for psychiatric patients with other diagnoses as well, when the starting point of analysis is a psychiatric hospitalization.

CHAPTER VI

SUMMARY

Since first defined as a psychiatric syndrome, schizophrenia has carried implications about a negative outcome with deterioration over time. In recent times, researchers have challenged the assumption of progressive deterioration for schizophrenic patients. Several studies have found that schizophrenic patients show some improvements in functioning and that some schizophrenics recover from the illness completely. Comparisons with other psychiatric groups have concluded that schizophrenics continue to show severe impairment, and have a relatively poor outcome.

In this study, patients were assessed one year after discharge from a state hospital. Schizophrenic patients were compared to non-schizophrenic patients from the same setting. In addition, patients with a history of illness of one to four years were compared to patients with a history of illness five years or greater. Hypotheses predicted a more negative outcome for schizophrenic patients than for non-schizophrenic patients, and a more positive outcome for schizophrenics with a longer history of illness. Comparisons were made on measures of overall outcome, incidence of rehospitalization, presence of psychotic symptoms, and level of occupational functioning. Statistical analyses indicated a significantly more negative outcome for schizophrenic than for non-

schizophrenic patients. This difference was also obtained when comparisons were between schizophrenic and non-schizophrenic patients with a one to four year history of illness, when comparisons were between schizophrenic and non-schizophrenic patients with a five year or greater history of illness, and when only patients who were not rehospitalized were compared. Analyses of outcome scores of schizophrenic patients at different stages of illness did not support the view that schizophrenics improve over time. Four possible explanations were offered to account for these results. The study tended to support a view of schizophrenia with a negative outcome relative to other psychiatric groups, and a tendency for further deterioration in functioning over time.

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The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Masters of Arts.

4/18/84
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