Catamnestic Long-term Study on the Course of Life and Aging of Schizophrenics

by Luc Ciompi

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Abstract

The author summarizes a monograph study on the course of schizophrenia into old age, which he co-authored with C. Müller, and which includes mortality and cause-of-death statistics on 1,642 original cases and an average of 37 years of catamnestic observation of the 289 patients who survived until the final followup examination. The separate investigations of the development of schizophrenia, the psycho-organic symptomatology, and the social adaptability show that the long-term course was favorable in at least half of the cases. From a statistical viewpoint, outcome depended primarily on premorbid personality factors, on certain psychopathological factors, and on the influence of advanced age. These findings supported and supplemented important findings by other authors (in particular those of Bleuler and Huber), on the long-range development of schizophrenia.

Sample Characteristics

It is intended to report, in summary form, on the major findings included in a recently published monograph in German, titled Course of Life and Aging in Schizophrenics by Ciompi and Müller (1976). In the study described, it was possible to observe the course of schizophrenia systematically in a large number of patients over an extremely long observation period averaging nearly 37 years and extending well into advanced age.

The investigation was done in Switzerland, where conditions for this type of long-term study are excellent for a number of reasons. It is part of a research program titled “the Lausanne Investigations,” in which exceptionally long-term followup studies have been carried out for other types of psychiatric disorders (such as for alcoholism, depression, mania, epilepsy, oligophrenia, progressive paralysis, and hysteria). The global aim of the Lausanne Investigations, in addition to supplementing our knowledge of courses running over decades, is principally to assess the influences of old age on different psychiatric illnesses—a area that has received too little past investigative attention (Ciompi and Müller 1969; Ciompi 1972).

Sample Characteristics

The initial sample of the Lausanne Investigations included all former hospital patients who were less than 65 years old at their first hospitalization and who had reached an age of 65 years or more at the beginning of the study in 1963 (born between 1873 and 1897). The sample was thus highly representative of those psychiatric patients in need of hospitalization within the given age grouping and originating from the predominantly rural and small-town population of this area of Switzerland.

The selection of an initial sample of schizophrenics out of this total number of probands was based upon the clinical diagnosis at first hospitalization. We should remark here that, at the University Psychiatric Clinic of Lausanne, from the beginning of the century on, a diagnosis of schizophrenia or dementia praecox was made at first strictly according to Kraepelin’s standards and then according to E. Bleuler’s and M. Bleuler’s. All diagnostically marginal groups of fringe determination were excluded (as, for example, “paranoia,” “paranoid,” “acute delusions,” “hallucinatory delusions,” and “delusional confused state”), along with a series of cases in which the ini-

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tial diagnosis of schizophrenia appeared as doubtful in the light of the followup examination.

The concept "schizophrenia" on which this investigation is based might be described as follows: A case of schizophrenia was assumed whenever a personality disturbance of psychotic proportions existed which was marked by manifold and alternating combinations of so-called "primary disorders" of thought and emotion, autism, ambivalence, loss of contact, and experiences of depersonalization or de-realization. In those very rare cases in which only those kinds of "primary symptoms" existed, a "schizophrenia simplex" was diagnosed. If so-called "secondary symptoms" were also present (such as delusions, hallucinations, hebephrenically silly, puerile, or catatonic psychomotor disturbances), a paranoid, hebephrenic, or catatonic schizophrenia was diagnosed, in accordance with the predominating symptom pattern presented.

The diagnostic concept applied, therefore, is considerably more restrictive than the one currently used in the United States where, according to Stephens (1970), "practically all nonorganic psychoses are diagnosed as schizophrenias." On the other hand, it is certainly broader than the concept of those (predominantly Scandinavian) authors, such as Langfeldt (1937), Holmboe and Astrup (1957), and Achte (1967), who try to distinguish between a so-called "schizophrenic core group" and the "schizophreniform psychoses," depending on the type of course. In contrast to this concept, it was the specific concern of the present study not to confuse the diagnosis with the unpredictable disease course, but rather to proceed from clearly discernible initial diagnoses of psychotic states, and to treat their continuing development (over the long term) as an open problem to be investigated.

What is often overlooked in investigating the phenomena of aging is the fact that these phenomena can only be studied among the survivors from a population previously decimated by death. Thus, it was expected that a substantial portion of the initial probands born between 1873 and 1897 would have expired by the time of the followup examinations in 1964-69. This turned out to be the case for about 75 percent of the originally selected probands from the 1,642 schizophrenics. In addition, approximately 7 percent of the probands were lost to followup for other reasons. Thus, 289 probands (18 percent of the initial sample) were ultimately available for a direct followup examination.

Research Strategy, Methodology, and Length of Followup

The conditions described led us to investigate the sample material from two totally different perspectives:

- The initial sample of 1,642 cases was first studied for mortality statistics and causes of death up to the beginning of the actual catamnestic followup examinations. In this way the decisive selection factor that determined which probands would and would not be included in the followup examination—to wit, death—was investigated so that the results of followup examinations could be interpreted with greater accuracy.

- Personal followup examination of the 289 surviving probands (92 male and 197 female) was to provide data about the entire disease course from the initial hospitalization through old age, about the patients' final state of health in old age, and about a multitude of ancillary variables that might possibly have influenced the course.

The direct, personal followup examination was performed by a trained psychiatrist from the investigative team. It usually took place at the home of the proband in the form of a 2-hour semistructured interview, which was supplemented by the systematic study of all available documents (e.g., patient histories, judgments, correspondence) and by systematically collected information from several third persons (e.g., family members, acquaintances, care personnel, physicians, official agencies). Insofar as subjective judgments based on these followup examinations were necessary, they were rendered after previous reliability tests by two independent consultants; remaining differences were resolved by consensus.

The median-duration catamnestic followup examination amounted to 36.9 years, widely distributed (SD = 13.3 years). For approximately one-fifth of all probands, catamneses in excess of 50 years could be rendered. The median age at first hospitalization was 33.2 years (SD = 10.6) for men and 41.4 years (SD = 12.0) for women. At the time of the followup examination men averaged 75.2 years (SD = 4.8) and women 75.8 (SD = 5.7).

These figures show that these schizophrenia catamneses are among the longest that appear in the world literature1; furthermore, to our knowledge, this is the only study in

1In the instructive tables by Stephens (1970) on 31 course studies of schizophrenia, there are only four papers with catamneses in excess of 20 years, and none of these is fully comparable to this report in respect to number of probands and median duration of catamnesia.
which it was possible systematically to follow so many courses well into advanced age.

Results From the Investigations of Mortality and Causes of Death

The complex results of the study on mortality and causes of death will be discussed here only insofar as they contribute to a better understanding of the results of the final followup examinations of the surviving probands. The detailed comparisons in the same years of mortality data between the initial patient sample of 1,642 schizophrenics and an average Swiss population sample similar in age and sex showed, as expected, a generally higher mortality among schizophrenics, although it was somewhat less pronounced than other authors found it to be (Malzberg 1934, 1953; Ödegård 1951; Niswander, Haslerud, and Mitchell 1963a, 1963b, and 1963c; and Lindelius 1970).

If the mortality among the average population was to be set at 100 percent, then among the schizophrenics of the present sample it was 173 percent. Compared to the other subgroups, the mortality rate among catatonic schizophrenics was particularly high (252 percent), and somewhat low for paranoid schizophrenics (143 percent).

Women died at a higher rate (185 percent) than men (161 percent), as did first admissions after age 40 (178 percent) compared to first admissions before age 40 (170 percent). Compared to other patient groups similarly investigated in the Lausanne Investigations (Ciompi and Medvecka 1976), the increased mortality in schizophrenics interestingly assumes an intermediate position between the typically psychogenic diseases and the cerebro-organic ones (see figure 1).

Certain differences compared to the average population were also noted in respect to causes of death, for which, however, sufficiently precise information was available only from 1942 on; that is, when the probands—all born between 1873 and 1897—had already reached a rather advanced age. As always in cause-of-death statistics, a number of other sources of errors dictate considerable caution in evaluating the results; however, in 181 of the 570 total deaths considered here (32 percent), an autopsy was performed. On these grounds we found (with some differences between the sexes) that along with an unusual number of unknown causes of death, infectious diseases (tuberculosis in particular), respiratory diseases, disorders of the nervous system (especially apoplexies), and to a lesser degree debility of old age and suicide significantly more often led to death among the schizophrenic probands than among the general population. On the other hand, the schizophrenics appeared to die relatively less often from certain causes that were common in the average population. As other investigators had reported (e.g., Schulz 1949; Bleuler 1972), both sexes died more rarely than might be expected of malignant tumors, women also of circulatory diseases or blood and metabolic disorders. In respect to death by suicide, a comparative study by Aubry (1974) performed as part of the Lausanne Investigations showed that suicide plays a smaller role among former schizophrenics of advanced age than it does among patients with several other psychiatric disorders (see figure 2).

As a decisive selection factor for the 289 probands who underwent the final followup examinations, death obviously had a favorable, as well as an unfavorable selection effect. So, for example, death eliminated at a preferred rate the catatonic schizophrenics, whose long-term course is often quite favorable. The contrary effect is realized, among others, in the increased death rate of the more severe cases by suicide, possibly also from diseases of the nervous system, and other unknown causes. By and large, the favorable selection effects seem to predominate slightly, and the results of final followup examinations should be interpreted accordingly.

Results of the Direct Catamnestic Followup Examinations

In previous outcome studies, insufficient attention has been paid to the fact that an investigation running over several decades—and especially one that pursues the development of a disease well into advanced age—is too complex to be understood in terms of a single dimension: for example, that of recovery, of improvement, or of deterioration in respect to the initial disease picture.

One ought to remember that schizophrenic disturbances may appreciably recede or even disappear completely in the course of time, but later be replaced by something quite different—for example, a psychoorganic syndrome. Furthermore, and particularly in schizophrenics, there often exists only a minimal parallelism between the actual psychopathological and the social development. The social adaptation may improve despite stationary psychopathological disturbances (as for example, delusions or hallucinations); in other cases it deteriorates with relentless consistency despite the disappearance of any florid schizophrenic symptoms. These complicated conditions led to a procedure in which we first evaluated separate aspects of outcome that were only
Psychiatric Hospitalizations During Proband's Lifetime. It was quite surprising that, despite the strict selection of unequivocally psychotic diagnoses in the beginning, about half (47 percent) of the probands presenting for the final followup examination after an average of 37 years had been hospitalized only once in their lives, and that the duration of this hospitalization had lasted no longer than 6 months for two-thirds of the probands. In the same context, the absolute total time of hospitalizations during the entire observation period amounted to less than 1 year for 47 percent of the probands. On the other hand, it amounted to more than 20 years for 23 percent of the probands. The polarization suggested here between a majority of transient hospitalizations and a minority of almost permanent hospitalizations is supported by the fact that 59 percent of probands did not require hospitalization for more than about 10 percent of the overall observation time, while 14 percent of the probands remained hospitalized almost constantly; that is, for 80 to 100 percent of the observation period. It is particularly interesting that among the minority of patients requiring further hospital care, the shorter hospitalization group steadily decreased with advancing age, while the long-term hospitalization group steadily increased. In contrast to current views, based only on cross-sectional or brief longitudinal investigations, the most common hospitalization periods of schizophrenics occur in advanced age. It follows then that, sociopsychiatrically, schizophrenia is important not only during youth, but also in old age.

Of course, it must be remembered that hospitalization periods are in no
The Long-term Course of Schizophrenic Syndromes. The conclusions indicated above are fully verified in the detailed analyses of psychopathological changes occurring during the patient's lifetime. The longitudinal structure of the schizophrenic syndrome was determined according to the type of onset, the course type, and the "end state"; that is, by the nature of the state of health or state of illness as it was observed during the last 5 years. Except for about one-eighth of the cases, which were uncertain, the onset of the disease was about as often acute as it was insidious (wherein a time lapse of more or less than 6 months from appearance of the first symptoms to a complete picture of a psychosis was used as a criterion). In 50 percent of the cases, the course type proved to be undulating, and in 43 percent of the cases, to be simple-progressive (with 7 percent remaining as uncertain).

The end states were determined according to criteria established by M. Bleuler (1972). In 27 percent of the cases, the end state was determined as "recovery," in 22 percent as "mild," in 24 percent as "moderately severe," and in 18 percent as "severe" (9 percent being uncertain). According to these criteria, about half (49 percent) of all schizophrenic syndromes developed favorably; that is, to a recovery or a mild end state (figure 3).

Schematically depicted and arranged according to frequency (see figure 4), the eight course types developed from these observations (applied a simplifying summarization of recoveries and mild end states on the one hand, and intermediate to severe end states on the other).

In view of these data, the most frequent course combinations, each accounting for about one-fourth of all cases, were either acute-undulating-favorable (course type 1) or chronic-simple-unfavorable (course type 2). Unfavorable outcomes after acute-undulating courses (course type 3), and favorable outcome in cases of a chronic-simple course type (course type 4) were considerably less common, each accounting for about one-tenth of all cases. Course types 5 through 8 were observed only as rare exceptions. The most unfavorable disease development conceivable, course type 6 (an acute onset, running a simple course to an intermediate or severe end state) occurred in 8.3 percent of all cases. Course type 6 is in many ways similar to the so-called "catastrophic schizophrenias" described by M. Bleuler.

As far as the development of individual schizophrenic symptoms is concerned, advanced-age cases also revealed a pronounced general tendency toward improvement and recovery. Sixty-two percent of all individual symptoms observed upon...
initial hospitalization had completely vanished in old age, and an additional 11 percent were clearly improved, while just 20 percent of all individual symptoms had either remained unchanged in old age or had intensified.

It is interesting here to note that the particularly intensive symptoms belonging to the catatonic typology, such as stupor, anxiety, excitability, and disturbance of consciousness, in the long run develop significantly more favorably than the entirety of schizophrenia symptoms, while indifference, abulia, affective withdrawal, auditory hallucinations, delusions, motor stereotypies, and mannerisms, on the other hand, develop significantly more unfavorably.

Except for the psycho-organic deterioration manifestations, which will be discussed below, it was rare when truly new symptoms appeared in advanced age (at a maximum, in about 20 percent of the probands, although for most symptoms, in less than 10 percent of them). When this was the case, then, in descending order of frequency, it was most usually indifference, affective withdrawal, abulia, thought disturbances, motor stereotypies and mannerisms, mutism or semi-mutism, negativism, hypochondria, depressive or manic features, hallucinations, delusions, or depersonalization manifestations. These new symptoms nearly always remained within the bounds of a more or less despecified schizophrenic residual state; there was not a single case in which a truly new nosological nonschizophrenic disease syndrome appeared.

Quite unspecific, residual states with predominately nonproductive symptoms (such as indifference, affective withdrawal, abulia, negativism, mutism or semi-mutism, mannerisms or stereotypies, and, more rarely, delusions and hallucinations) were by far the most frequent manifestations of schizophrenia in old age, insofar as any disease symptoms could be detected at all. The prominent symptom pictures that had originally suggested the patients' inclusion in one of the classic schizophrenic sub groupings, were almost totally or nearly flattened out beyond recognition at the time of the final catamnestic followup examinations. This far-reaching despecification and flattening, along with a general tendency toward calming and improving, seemed to be the most characteristic influence of advancing age on the schizophrenic manifestations.

In comparison to probands' conditions at initial hospitalization, as shown in figure 5, 20 percent of all cases were considered as "recovered" in old age, and an additional 43 percent as definitely improved (a somewhat stricter concept for "recovery" was applied than Bleuler used in his criteria for the "end states").

Thirty-six percent of the cases, however, were unchanged (30 percent) or worse (6 percent).

Quite contrary to the original—and today still popular—concepts of the nature of schizophrenia, a good majority of definitely "genuine" schizophrenias (from initial diagnoses) may develop favorably in the very long run, obviously partly under the calming and alleviating effect of advancing age. Does this favorable picture persist when, in addition to the actual schizophrenic disorders, other kinds of aspects of the overall psychic condition are taken into consideration?

Schizophrenia and the Psycho-organic Aging Syndrome. Typical psycho-organic aging disorders in the context of a senile or arteriosclerotic dementia—contrary to earlier findings (e.g., Riemer 1950; Bychowsky 1952)—certainly did appear in the advanced age of our schizophrenic subjects; however, they were pronounced in only a small minority of cases. As figure 6 shows, 58 percent of all 289 probands presented with no (23 percent) or only very minor (35 percent) manifestations of that kind of deterioration, while 25 percent presented with in-

2Not the slightest trace of disease symptoms was allowable.
Figure 4. Schematic representation of observed course types

<table>
<thead>
<tr>
<th></th>
<th>Onset</th>
<th>Course type</th>
<th>End state</th>
<th>Percent (n=228)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Acute</td>
<td>Undulating</td>
<td>Recovery or mild</td>
<td>25.4</td>
</tr>
<tr>
<td>2</td>
<td>Chronic</td>
<td>Simple</td>
<td>Moderate or severe</td>
<td>24.1</td>
</tr>
<tr>
<td>3</td>
<td>Acute</td>
<td>Undulating</td>
<td>Moderate or severe</td>
<td>11.9</td>
</tr>
<tr>
<td>4</td>
<td>Chronic</td>
<td>Simple</td>
<td>Recovery or mild</td>
<td>10.1</td>
</tr>
<tr>
<td>5</td>
<td>Chronic</td>
<td>Undulating</td>
<td>Recovery or mild</td>
<td>9.6</td>
</tr>
<tr>
<td>6</td>
<td>Acute</td>
<td>Simple</td>
<td>Moderate or severe</td>
<td>8.3</td>
</tr>
<tr>
<td>7</td>
<td>Chronic</td>
<td>Undulating</td>
<td>Moderate or severe</td>
<td>5.3</td>
</tr>
<tr>
<td>8</td>
<td>Acute</td>
<td>Simple</td>
<td>Recovery or mild</td>
<td>5.3</td>
</tr>
</tbody>
</table>

1 In 61 cases (21.1 percent of 289) onset, course type, or end state could not be determined with certainty.
Figure 5. Total development of the schizophrenic disease picture

<table>
<thead>
<tr>
<th>Condition</th>
<th>Female (n=197)</th>
<th>Male (n=92)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Recovered</td>
<td>20.1</td>
<td>21.7</td>
</tr>
<tr>
<td>Improved</td>
<td>44.6</td>
<td>19.4</td>
</tr>
<tr>
<td>Unchanged</td>
<td>41.6</td>
<td>42.6</td>
</tr>
<tr>
<td>Worse</td>
<td>29.8</td>
<td>30.4</td>
</tr>
<tr>
<td>Uncertain</td>
<td>7.1</td>
<td>3.3</td>
</tr>
</tbody>
</table>

Figure 6. Frequency of degrees of the psycho-organic syndrome

<table>
<thead>
<tr>
<th>Degree</th>
<th>Female</th>
<th>Male</th>
<th>n=289</th>
</tr>
</thead>
<tbody>
<tr>
<td>None</td>
<td>22.8</td>
<td>24.4</td>
<td>66</td>
</tr>
<tr>
<td>Mild</td>
<td>34.9</td>
<td>34.1</td>
<td>101</td>
</tr>
<tr>
<td>Moderate</td>
<td>16.9</td>
<td>16.2</td>
<td>49</td>
</tr>
<tr>
<td>Severe</td>
<td>8.0</td>
<td>18.5</td>
<td>23</td>
</tr>
<tr>
<td>Uncertain</td>
<td>17.3</td>
<td>15.7</td>
<td>50</td>
</tr>
</tbody>
</table>

As an additional point of interest, it was discovered that organic deteriorations occurred significantly more often in unfavorable-course schizophrenias than in favorable ones, which in fact allows for the existence of interrelationships between the two diseases. In closer examinations of these interrelationships, however, it was discovered that every conceivable combination may occur. First were the simple mixtures; that is, the superposition of organic and schizophrenic elements without any clear “interference.” Second in frequency were cases characterized by an increasing “covering” and weakening of the schizophrenic symptoms, sometimes to the point of total disappearance, behind the picture of a pure organic dementia. Third, there was the occasional cumulative intensification of certain individual schizophrenic features; fourth, transient “schizophrenic coloring” of an organic dementia long after abatement of the original psychosis; and, fifth, complete temporal and psychopathologic independence between the two syndromes.

These findings concerning the relationships between schizophrenia and organic deterioration of aging, hitherto investigated rather inadequately, may shed new light on the old and still controversial question of the significance of organic factors in schizophrenia. Even in advanced age, schizophrenia in no way assumes the character of a typical organic disease. Indeed, it may combine with such a disease in the most varied forms, although the nature of its appearance is something quite different. On the other hand, the reported relationships suggest that organic factors, at least in the aging process in schizophrenias, might play some role. The most important indices, among many, that support this interpretation are the higher mortality among...
schizophrenics and a statistical relationship between simple, unfavorably developing schizophrenic courses and increased organic deterioration.

Social Situation and "Social Adaptation" in Advanced Age. By and large, the reported, generally quite favorable psychopathological developmental tendencies were also reflected in the external social aging situation of the probands included in the final followup examination. Fifty-six percent of them were living, usually for many years, outside of psychiatric hospitals, either alone (13 percent), in a family situation (26 percent), or in nursing homes or pensions (17 percent). In spite of the high average age in excess of 75 years, more than half of them were in good physical health and somehow vocationally or nonvocationally active—15 percent in full-time employment and 37 percent doing part-time work. Only 17 percent were married; the remainder were either single, widowed, separated, or divorced.

Of course, such figures depended not only on the disease course, but also on a large number of social environmental factors that were undoubtedly heavily dependent on time and locale. Therefore, "social adaptation" was evaluated with a special scale that was designed to be independent of the patient's concrete social situation. It showed that in advanced age, the probands were "better adapted" insofar as relationships to their environments had become predominantly (57 percent) free of conflicts, calm, and peaceful. Simultaneously, however, a majority of patients (72 percent) appeared to be definitely poor in their social relations or dependent (65 percent). Overall the "social adaptation"—defined as a combination of these three behavioral aspects—was judged good or satisfactory in only about a third of the probands, but as mediocre or poor in two-thirds—a proportion that appreciably exceeds the normally expected degree of dependency and disengagement in advanced age. Thus, our analysis showed in the old age of these former schizophrenics some serious disorders in the area of social behavior which appeared as more subtle indices of a previously endured psychosis rather than the purely psychopathological symptoms.

Global Mental Health at Advanced Age. By the combined evaluation of the above individually analyzed course aspects, the "global mental health state" in old age could finally be evaluated. An overall rather unfavorable result was to be expected since, in accord with a severe mode of evaluation, disturbances (but not their absence) in any given area were weighted at full value. By this system it was, in fact, shown that, at the time of final followup examination, only 12 percent of the probands were completely free of any disturbances. Nineteen percent of the cases suffered from mild disturbances of some kind; hence, the overall global mental health state was good or satisfactory in one-third of the probands. The remaining two-thirds, on the other hand, presented moderate (37 percent) to severe (31 percent) mental, psycho-organic, or social behavioral disturbances.

An analysis of these results showed that the relatively unfavorable overall evaluations depended in the first place on delicate disturbances in the social behavior, but often to a much lesser extent on the clearly psychotic, psycho-organic, or other psychopathological disease symptoms.

Favorable and Unfavorable Factors in the Long-term Development of Schizophrenia. Five of the previously determined aspects of long-term development, specifically the total course of the schizophrenia, the observed end states, the psycho-organic disorders, the social adaptation, and the global mental health state in advanced age were systematically tested for their statistical relationships to 13 general and anamnestic variables, to 11 psychopathological, and to 5 actual situational variables. The most important results of these extensive calculations were:

The anamnestic variables. In descending order, the following variables were significantly associated with a favorable disease course into old age: good premorbid social, familial, and professional adaptation; few premorbid personality disorders; a marriage; completion of vocational training; and a higher premorbid occupational level. On the other hand, gender, intelligence, education, family relationships during childhood (investigated retrospectively), and surprisingly family history of schizophrenia or other types of mental disorders, as well as constitution, did not significantly influence long-term course. Presumably a common "personality factor" is expressed in these correlations and exercises so much force that it influences decisively the psychic well-being throughout the entire life. Not only would this support the earlier reports of the great importance of personality factors in the course of schizophrenia (e.g., Vaillant 1962), but it would also confirm reports of the importance of such factors.
for the psychic well-being in old age (e.g., Neugarten 1964).

Psychopathological variables. The psychopathological variables that were significantly correlated with a favorable disease course were the undulating course type and the acute onset; an initial hospitalization lasting less than 1 year; the presence in the initial symptomatology of depersonalization and derealization experiences, depressive features, optical hallucinations, delusions, and the absence of indifferences—abulia—affective withdrawal; and an initial hospitalization before age 45.

No such relationship resulted for the age at onset (as differentiated from age at first hospitalization); for the period of initial hospitalization (in any previous or following decade between 1900 and 1960, either before or after the introduction of the more active treatment methods in the 1930s); or for the applied preneuroleptic treatment methods (insulin, electroshock, drugs, or no special treatment whatever).

This reveals yet another basic factor influencing the course, namely, a structural disease factor—as we may choose to call it. It is reflected extensively in the old principle—which has also been statistically verified in several newer investigations on prognosis (e.g., Vaillant 1964; Jansson and Alstrom 1967; Lindelius 1970; Stephens 1970)—which holds that the disease tends to run a more favorable course, the more acute, the more lively, and the more mobile the onset of the illness is in the beginning stage. The presumption does not seem to be without justification that this "structural disease factor" might be closely related to the previously mentioned "personality factor."

The fact that the first-hospitalized schizophrenias of the 1940s and 1950s ran courses no better than those of the first decades of this century was a painful disappointment that seemed to discredit as totally ineffective every improvement in the care conditions and treatment of schizophrenics from the beginning of the century until nearly the 1950s. A more precise analysis of these findings, however, showed that such radical conclusions would not be justified. In the first place, the absence of an influence on the long-term course into old age by no means excludes earlier and short-term favorable effects, and in the second place, among the initial hospitalizations later in this century there were more relatively unfavorable late-onset schizophrenias in the prognosis of probands than before. This suggests that any possibly favorable influences of improvements in care and treatment that were introduced during the course of time were not powerful enough to counteract certain unfavorable selection effects into advanced age. We may furthermore conclude that those treatment factors investigated were much less important for the long-term course than the above-described personality and disease factors.

Personal situational variables. A noninstitutional residential environment, a fairly high occupational level, good physical health, marriage, and age under 75 were correlated with a favorable disease outcome in old age. But since typically circular interrelationships undoubtedly existed between a number of these variables and good mental health—residential milieu and level of occupation in old age could just as easily be the result as the cause of a good or a poor state of health—only very limited conclusions could be drawn from these findings for the importance of the personal situational factors.

Discussion and Conclusions

Our results are reported here in summary form, and we will limit our discussion to just a few salient points that will be of relevance to the field of schizophrenia in general, and to the influence of advanced age in particular.

First, it should be emphasized that the reported results are based on a selected sample of "survivors" from a larger, more representative initial population of hospitalized patients. In addition to this and other methodological limitations on the generalizability of our results, it might justifiably be argued, for instance, that the exceptionally favorable socioeconomic conditions which prevail in Switzerland might have appreciably influenced the course of schizophrenia. But in 1941, M. Bleuler reported surprisingly few differences between the outcomes observed in a Swiss and an American sample of patients. However, if the socioeconomic conditions in Switzerland did indeed exert a favorable influence on outcome, that would certainly be a highly significant finding. It would suggest that under favorable circumstances schizophrenia may run a predominantly favorable course. Indeed, one of the principal results of this study is that, in the long run, about three-fifths of the schizophrenic probands have a favorable outcome; that is, they recover or show definite improvement. By and large, our results are a confirmation, and extension into the period of old age, of the reports of other investigators (Rennie 1939; Bleuler 1941, 1968, 1972; Noreik et al. 1967; Gross et
and valid replication of Bleuler's many. (A study comparing the findings of Bleuler and Huber has recently been published; Bleuler et al. 1976.) In respect of the proportion of favorable outcomes (after several decades Huber et al. found 57 percent, Bleuler 53 percent, and Ciompi and Müller 59 percent recoveries or mild end states), there is impressive agreement among these extensive studies of long-term course. In contrast to the cross-sectional or short-term longitudinal studies of modern geronto-psychiatric research, which reveal principally the great variety of unfavorable age-related influences, but in good agreement with the long-term course observations of permanently hospitalized schizophrenics done by C. Müller as early as 1959, the present study demonstrated that advanced age has favorable—that is, quieting, stabilizing—influences, along with the unfavorable ones. (On the other hand, a developmental tendency "from delusion to hallucinations," as postulated by Janzarik, 1957, was not supported.) The predominantly mitigating influence of old age on schizophrenia found in the "Lausanne Investigations" is also found, to varying degrees, in other severe mental diseases (Ciompi 1972).

The findings of the present investigation concerning the interrelationships between psycho-organic brain syndrome and schizophrenia deserve special emphasis. In addition to providing what is possibly the most reliable data available on the frequency of psycho-organic degenerative syndromes in schizophrenics, the study essentially supports the theory that these two afflictions must be different in nature; that is, that even in advanced age schizophrenia in no way assumes the character of a typical organic disease.

There were, however, some indications of a role for organic factors in the development of schizophrenia. Findings that support this interpretation were (1) the intermediate position of schizophrenia between psychogenic and organic afflictions in relation to mortality, and (2) the somewhat higher frequency of senile dementias as compared to the general population, especially in patients with progressive, deteriorating courses.

These findings also bear upon the important question of whether "true schizophrenias" and "schizophreniform psychoses" constitute separate disorders. Certainly it is possible to observe a distinction between particularly good and particularly poor courses (the former amount to about one-fourth and the latter to about one-fifth of all cases). The variables that were found to influence course development also revealed marked differences between these two groups, in particular for a series of personality factors and of "structural disease factors." But all these differences are only statistical; they are far removed from any form of regularity (Cole's associative coefficients usually range around 0.30 to 0.60); the median range of in-between and transitional cases is about the same as the two extreme groupings (about 50 percent).

Despite extensive analysis, we failed to find one variable—or combination of variables—that would permit any reasonably accurate prediction of outcome during the first few years of illness for the individual case; that is, an assignment to either the group of the malignant or of the benign psychoses. Since there are scattered cases observed of surprisingly late improvements, even after decades of the most severe illness (there were five such cases in the present sample), such a categorization would have to be held in abeyance until the patient died.

Bleuler and Huber both concluded that schizophrenia is in no sense a "basically" or even "predominantly" unfavorable "disease process" running an inexorably deteriorating course. Its course is as vulnerable to change as life itself, and is obviously subject to a multitude of influences. The major influences on long-term course identified in the present study were certain premorbid personality factors and, possibly related to them, certain "structural disease factors." Finally, the study confirmed that schizophrenia is affected by the aging process which, as in normal people, is capable of generating not only additional difficulties, but also amelioration and tranquilization.

References

Achté, K.A. On prognosis and rehabilitation in schizophrenic and...


Langfeldt, G. The prognosis in schizophrenia and the factors influencing the course of the disease. Acta Psychiatracta Scandinavica, Supplement 13, 1937.


Malzberg, B. Mortality Among Patients With Mental Disease. New York: State Hospital Press, 1934.


Rennie, T.C. Followup study of 500 patients with schizophrenia admitted to the hospital from 1913 to 1921. *Archives of Neurology and Psychiatry*, 42:877–891, 1939.


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**World Congress of Biological Psychiatry**

The World Federation of the Societies of Biological Psychiatry and the Swedish Society of Biological Psychiatry announce the Third World Congress of Biological Psychiatry, to be held in Stockholm, Sweden, June 28–July 3, 1981. Each day a plenary session will be followed by two or three symposia suggested by the various societies. Participants are invited to structure reports either as oral presentations or as posters. Abstracts will be made available.

Preliminary deadline for papers: February 1, 1981.

English, French, and Spanish will be official languages. Simultaneous translations from and into these languages will be arranged.

Exhibitions will display new equipment in experimental disciplines relevant to biological psychiatry, as well as drugs used in treatment and research.

An attractive social program, as well as pre- and postcongress tours will be offered by the Congress Committee to participants and all accompanying persons. Weather in Sweden is generally at its best in June, with an average temperature of 20–23°C, light evenings, and short nights.

For further information, write to:

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