

Variations in Behavioral Symptom
Patterns of Schizophrenia
as a Function of Age of Onset

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Abstract

Defining, studying, and explaining schizophrenia has always been a difficult undertaking. One major problem is differentiating it from other major disorders. Another problem is determining whether schizophrenia is a single disorder or a cluster of related disorders. A third issue is the validity and reliability of the diagnostic criteria for schizophrenia defined in The Diagnostic and Statistical Manual of Mental Disorders, Third Edition (DSM-III); which states that schizophrenia cannot be diagnosed in an individual exhibiting the symptoms for the first time after age 45. However, since many researchers and clinicians come into contact with people over the age of 45 who appear to display the symptoms of schizophrenia for the first time, many terms have been used to classify these "schizophrenics."

The purpose of this thesis is to describe the variations in behavioral symptom patterns of schizophrenia as a function of age of onset. The most common age used to divide early-onset versus late-onset is 45. Minor differences were discovered between the two age groups. Schizophrenics with late-onset were usually female, subtyped as paranoid, and responded well to low doses of neuroleptics. Younger schizophrenics were usually male, and did not respond as well to treatment (Jeste et al, 1988). Results suggest

similarities between early-onset and late-onset schizophrenia.

Variations in Behavioral Symptom Patterns of Schizophrenia as a Function of Age of Onset

Ever since Bleuler coined the term schizophrenia, there have been misconceptions and confusion concerning the disorder. Goldstein (1986) stated, "The term schizophrenia has become controversial because it has been applied to a wide variety of conditions that apparently have little in common" (p.147). The National Institute of Mental Health (1986) answered the question "what is schizophrenia?" with the following:

Schizophrenia is a term used to describe a complex , extremely puzzling condition-- the most chronic and disabling of the major mental illnesses. Schizophrenia may be one disorder, or it may be many disorders, with different causes. Because of the disorder's complexity, few generalizations hold true for all people who are diagnosed as schizophrenic. (p.1)

In the United States, schizophrenia is classified according to

course and type. Conflicting opinions exist whether schizophrenia is one disorder with subtypes, or a cluster of related illnesses.

Schizophrenia is difficult to categorize as to type because symptoms often vary over time within the same individual. Clinicians generally agree on the main disorder (such as personality disorder or schizophrenia), but disagreement occurs when specifying type. The Diagnostic and Statistical Manual of Mental Disorders, Third Edition-Revised [DSM-III-R (1987, p.195-198)] lists five courses and five types. Huber (1980, p.596), however, listed twelve different courses and types of schizophrenia. Huber's characterization of course types takes into account the shifting of symptoms often seen with schizophrenics over time. Huber's course types were classified according to social recovery.

Langfeldt (cited in Jeste et al, 1982) divided schizophrenia into two separate types: process and reactive. Process schizophrenia is insidious: the personality prior to the onset of the illness lacked integration, the individual had always been rather withdrawn, and there was no obvious environmental cause for the breakdown. Process schizophrenia is considered the true schizophrenia. Reactive schizophrenia is now called a brief reactive psychosis [DSM-III-R (1987 p.205)]. The prognosis is better for brief reactive psychosis since the premorbid personality was healthy, the onset was much more sudden, and a precipitating event probably triggered the

breakdown. If there are many disorders with some similar and overlapping symptoms, diagnosis of schizophrenia can become quite difficult. For this reason the DSM-III-R has very detailed diagnostic criteria for schizophrenia. According to the DSM-III-R (1987,p.192), at least ten illnesses or situations must be ruled out before a diagnosis of schizophrenia can be made. These diagnoses include organic mental disorder; mood disorder; schizoaffective disorder; schizophreniform disorder; delusional disorder; obsessive-compulsive disorder; hypochondriasis; factitious disorder with psychological symptoms; personality disorders--especially schizotypal, borderline, schizoid, and paranoid types; and beliefs or experiences of members of religious or other cultural groups.

Organic mental disorders can be differentiated from schizophrenia by looking at the history of the patient to see if there is evidence of an accident, drug abuse, or physical illness. Lezak (1983) provided more help for differentiating the two. If an organic factor initiated and maintained the illness, the diagnosis of schizophrenia is not made.

Mood disorders can be distinguished from schizophrenia by focusing on affect and thought processes. If affect is the focus of the main disturbance, and thought processes are basically intact, the diagnosis would be mood disorder. However, in his review, Volavka (1985) claimed that the older the patient is at the time of onset of

the illness, the more difficult differential diagnosis becomes between schizophrenia and affective disorders.

Schizophreniform disorders can only be distinguished from schizophrenia by course, not symptomatology. Schizophreniform is a disorder that has been evident for more than two weeks but less than six months. The diagnosis of schizophreniform or schizophrenia--provisional can be used for a patient who meets most of the criteria for schizophrenia, but whose history is not well known. The diagnosis can later be confirmed or changed when more is known about the patient.

Delusional disorders differ from schizophrenia in the sense that the delusions are not bizarre, and if hallucinations are present they are not prominent. In addition, the overall behavior of a person with delusional disorder is not obviously odd or bizarre. A person with a delusional disorder may feel that his coworkers are laughing at or talking about him, coming to the conclusion that they are trying to get him fired. He may also hear noises outside at night that cause him to believe people are trying to rob his house. A schizophrenic's delusions are odd. A schizophrenic may believe whole-heartedly that clouds are alien energy beings from different time dimensions that tell her how to save the Earth. In fact, they may tell her she is the Earth and her anger is what causes earthquakes. Another way to distinguish between the two disorders is by differential response to chemical

treatment. Gold (1985) found that "delusional disorder will not respond to any of the available antipsychotics, regardless of dosage. Thus, it is vital to differentiate this condition from schizophrenia, which usually is responsive to antipsychotics"(p.227).

In some cases of obsessive-compulsive disorders, the obsession may become so strong and overvalued that it seems to be a bizarre delusion and therefore a symptom of schizophrenia. However, the stereotypical behavior seen in both disorders differ. The schizophrenic's stereotypical actions are usually based on strong delusions that cannot be shaken; the person with obsessive-compulsive disorder has stereotypical behavior stemming from a compulsion that is recognized, to some extent, as irrational (DSM-III-R, 1987).

During an initial evaluation, hypochondriasis can be confused with schizophrenia, since some schizophrenics have somatic delusions of physical disease. However, the hypochondriac's delusions are not as bizarre as the schizophrenic's and do not involve the same degree of conviction that a serious disease is present. A hypochondriac may complain of an upset stomach and feel it may be indicative of ulcers or some other serious medical problem. When tests reveal no physical reason for the pain, the person remains confused and unsure about the problem. However, a schizophrenic may explain that an upset stomach is a result of poisonous snakes that

have crawled into the intestines at night and are eating the stomach away. Other symptoms of schizophrenia are rarely present in a case of hypochondriasis.

Factitious disorders with psychological symptoms can be very difficult to differentiate from schizophrenia. One way to determine the diagnosis is to observe the patient both openly and unobtrusively. Most "psychotic" symptoms will appear only when the individual believes he or she is being watched, suggesting that the symptoms are under some voluntary control. According to the DSM-III-R (1987):

In a true psychosis, such as Brief Reactive Psychosis or Schizophreniform Disorder, the person's behavior on the ward will generally not differ markedly from his or her behavior in the clinician's office. In contrast, in a Factitious Disorder with psychotic features the person may appear to respond to auditory hallucinations only when under the impression that he or she is being watched. (p.319)

Many personality disorders can be mistaken for schizophrenia. The major difference between schizophrenia and personality disorders is the lack of severe psychotic symptoms in personality disorders. If psychotic symptoms are present in a personality disorder, they are usually transient, not as severe, and usually occur only during very stressful times.

There are also individuals who seem to have strange delusions and behave strangely according to the standards of the larger culture. However, they may be part of a sub-culture with beliefs and experiences that stem from religious or other cultural ideas which deviate from that of the larger culture. Therefore, these odd beliefs would not be considered psychopathological, because they are considered normal or acceptable in their social context.

Along with the problem of differential diagnosis, concerns arise as to the validity and reliability of the diagnostic criteria of schizophrenia in the DSM-III. These concerns include: 1. criteria specific to schizophrenia; 2. different disorders being labeled as schizophrenia because of certain symptoms that are included in the criteria of schizophrenia; 3. schizophrenia onset after age 45. A review of the literature on this topic reveals vagueness, contradictions, and confusion. Past research (Fish 1960; Larson and Nyman 1970; Jeste, Kleinman, Potkin, Luchins, and Weinberger 1981; and Jeste, Harris, Pearlson, Rabins, Lesser, Miller, Coles, and Yassa 1988) supports the idea that late-onset schizophrenia does exist. Yet the DSM-III explicitly states that a person cannot be diagnosed as schizophrenic if the onset is after age 45. (Unlike the DSM-III-R that provides specification of late onset if the disturbance begins after age 45.) It was important for treatment and research that only and all schizophrenics met the DSM-III diagnostic criteria for

schizophrenia. A symptom analysis of the criteria in the DSM-III was conducted by Morey and Blashfield (1981). To be helpful at all in isolating and defining schizophrenia, it was crucial that the diagnostic criteria be reliable and valid. Three concepts were examined: diagnostic informativeness, descriptive validity, and consistency among clinicians. Diagnostic information is contained in every symptom definition. Yet there may be some diagnostic criteria included that are relatively uninformative when it comes to the diagnosis of schizophrenia. "Weak links" allow people to be diagnosed as schizophrenic on the basis of exhibiting several symptoms included in the criteria, but are not specific to schizophrenia. An example of a "weak link" is the criterion of experiencing lack of energy, interest, or initiative. People suffering from many different disorders experience these symptoms. If these "weak links" exist, they may not aid in diagnosis and only function to make diagnosis of schizophrenia difficult. (Morey and Blashfield, 1981).

The next concept examined was descriptive validity. Descriptive validity is defined by Robert L. Spitzer, Chair of the DSM-III Task Force, (as reported by Morey and Blashfield, 1981) as:

The extent to which the characteristic features of a particular mental disorder are unique to that category, relative to other mental disorders and conditions....The presence of descriptive validity justifies the assumption

that a category represents a relatively distinct behavioral syndrome or pattern, rather than a random collection of clinical features. (p.261)

If the DSM-III had descriptive validity, then differential diagnosis should be easier and perhaps some of the confusion may be cleared up as to whether schizophrenia is a distinct disorder or a cluster of related conditions. Finally, there must be consistency in clinically interpreted symptoms. If a symptom is defined vaguely or ambiguously, there is room for subjective interpretation among clinicians, resulting in unreliable diagnoses.

In the analysis by Morey and Blashfield (1981), 47 schizophrenic symptoms were used, as well as 20 dementia symptoms, 22 mania symptoms, and 15 personality disorder symptoms. When tests on descriptive validity were concluded, 32 of the 47 symptoms were significantly more informative for schizophrenia than for either mania or dementia. Most of the problem areas of the schizophrenic symptoms had to do with prodromal and residual symptoms such as social isolation, impairment of personal hygiene, and markedly peculiar behavior. Ten of the 18 symptoms in this category failed to have significant descriptive validity. As for agreement among clinicians, it was determined that symptoms were rated fairly consistently from lowest to highest importance for a particular diagnosis. However, some symptoms had high variability,

suggesting that those symptoms were rather unimportant in determining a diagnosis or could be applied to many disorders. Varied ratings of some symptoms by clinicians indicated "that the symptoms did not 'band together' and that the clinicians did not perceive the forty-seven symptoms as being reasonably homogeneous in terms of the construct they represented" (Morey and Blashfield, 1981, p.264). Based on the preceding findings, modifications were made for the DSM-III-R, including specifying late-onset if the disorder, including the prodromal phase, develops after age 45.

It is obvious that schizophrenia is a confusing subject. A review of the literature confirms that schizophrenia is a little understood illness. Terms and diagnostic criteria vary widely, as do the conclusions drawn from schizophrenia research. The major focus of this literature review is to determine the presence or validity of late-onset schizophrenia. If late-onset schizophrenia is a valid diagnosis, are the symptoms similar to the symptoms manifested with early-onset? More succinctly, is late-onset schizophrenia the same disorder as early-onset schizophrenia, or is it a different disorder, or are both early-onset and late-onset subtypes of schizophrenia?

Studies of Schizophrenia

A review of the literature was conducted to identify the terms used for late-onset schizophrenia, the diagnostic criteria employed,

and the conclusions drawn by various researchers. Articles found dated from 1960 to 1988, and included both American and European studies.

Fish (1960), a European researcher, used the term senile schizophrenia to denote onset after age 60. One-hundred and ten female chronic schizophrenics were studied, 23 of whom had onset after age 40. The criteria for diagnosing schizophrenia, late-onset, were not stated in the article. Fish concluded that schizophrenics with onset after the age of 40, even after the age of 60, do exist and they present almost the same clinical pictures as early-onset schizophrenics. Fish found no homogeneous group of senile schizophrenics. Both early-onset and late-onset schizophrenia are heterogeneous groups.

Larson and Nyman (1970) used the term schizophrenia, and specified onset after age 40 as late-onset. Further diagnostic criteria were not given. Subjects studied were 153 European male schizophrenics with onset ranging from age 9 to age 77. Forty percent were found to have onset after age 40. Larson and Nyman found that the paranoid subtype had the widest onset range (age 16-77) compared to the hebephrenic (age 12-43) and simple (age 16-47) subtypes of schizophrenia. The mean age of onset for paranoid schizophrenia was age 42 ± 12 years.

Huber et al (1980) used the term schizophrenia, sometimes

specified as late-onset. Diagnostic criteria were not stated. Two samples of schizophrenics were used: Huber's, and a sample from a previous Bonn study. Huber's group consisted of 209 males and 293 females, for a total of 502 subjects. The Bonn sample consisted of 2,991 schizophrenic patients of both sexes. Huber et al concluded that the age of onset of schizophrenia is lower for men than women. In Huber's group, 14% of the patients had onset after age 40, compared to 40% in the Bonn patient group. Age of onset was found to have no significant prognostic value, and late-onset schizophrenia required no special nosological classification. The most common initial psychotic symptoms for onset after age 40 were paranoid hallucinations (37% of the cases) and paranoia (17% of the cases).

Jeste et al (1982) used the term schizophrenia for 93 chronic schizophrenic inpatients, all with onset before age 40. Jeste and colleagues employed the 1975 Research Diagnostic Criteria for schizophrenia. It was concluded that schizophrenia is a syndrome composed of sub-groups but, overall, includes heterogeneity of symptomatology.

Rabins, Pauker and Thomas (1984) used several terms to denote late-onset schizophrenia: delusional disorder, atypical psychosis, and late-onset paraphrenia. DSM-III criteria were used for schizophrenia (except age of onset) or schizophreniform disorder. Thirty-two subjects met this criteria, while three met the DSM-III criteria for

paranoia. The patients had a female-male ratio of 10.7:1. All 35 subjects met Kay and Roth's criteria for late-onset paraphrenia: presence of a persistent delusional state, onset after age 44, and absence of mood and cognitive disorders. Rabins, Pauker and Thomas concluded that these subjects were similar to patients diagnosed as late-onset paraphrenics or late-onset schizophrenics in other studies. They also found that symptoms of paraphrenics were similar to symptoms of schizophrenics. Late-onset schizophrenic patients do not appear to be suffering an affective disorder. Frequently there are auditory hallucinations, but most paraphrenic symptoms respond well to neuroleptics. Onset appears to be at a later age in women, earlier in men. Patients with a late-onset (after age 44) were generally occupationally successful, socially isolated, and eccentric prior to the onset of the illness. Another interesting conclusion was that patients with onset of schizophrenia between ages 45-59 may be more similar to early-onset patients than patients with onset after age 60 or 65.

Gold (1984) conducted a review of the schizophrenia literature and used the term late age of onset schizophrenia for those over age 45. The diagnostic criteria was not reported. He concluded that, though infrequent, late-onset schizophrenia is possible. Those suffering late-onset were predominately women, had a family history of schizophrenia, and benefited from antipsychotic drugs.

Volavka (1984) also used the term late-onset schizophrenia for those over age 45. It was concluded that patients who met DSM-III criteria for schizophrenia, except for the age limit of 45, do exist. However, Volavka stated that most studies have too many methodological problems to allow more conclusions to be drawn.

Harris and Jeste (1988) reviewed the literature for late-onset schizophrenia (after age 40). It was pointed out that many studies have methodological shortcomings. However, patients exist that do have schizophrenic symptoms for the first time after age 40. It appears that schizophrenics with late-onset are characterized by paranoid symptomatology, high female-male ratio, elevated prevalence of hearing loss and ocular pathology, schizoid or paranoid traits in premorbid personality, tendency toward chronicity, and symptom improvement with neuroleptics. The response to neuroleptics is comparable to the experience of younger schizophrenics. Harris and Jeste (1988) concluded that, in general, most symptoms of late-onset schizophrenics are similar to those of early-onset schizophrenics, especially paranoid types. Late-onset schizophrenia appears not to be a distinct entity but a combination of several different, and some overlapping, subtypes.

The final study reviewed was conducted by Jeste et al (1988). The term used was late-onset schizophrenia for onset after age 45. Two groups were used for comparison: 15 early-onset and 10

late-onset schizophrenics. All subjects met DSM-III-R criteria for chronic schizophrenia. Patients with a history of substance abuse or neurological disorders were excluded. The authors concluded that the two groups were similar in regard to mean duration of illness, rarity of deafness or blindness, high frequency of bizarre delusions and hallucinations, tendency to chronicity, high frequency of paranoid subtype, and treatment with Haldol. Differences indicated that younger patients had greater prevalence of loose associations, inappropriate affect, and required a higher mean dosage of neuroleptics. Both groups scored similarly on the Brief Psychiatric Rating Scale (BPRS). The two groups were also compared according to positive symptoms (for example, hallucinations and delusions) and negative symptoms (such as emotional blunting and social withdrawal). The results of Andreasen's Scale for Assessment of Positive Symptoms (SAPS) were also similar for both groups. However, early-onset patients scored higher on Andreasen's Scale for Assessment of Negative Symptoms (SANS). Jeste et al (1988) concluded that the late-onset schizophrenic syndrome is similar, but not identical to, early-onset schizophrenia. Specific conclusions could not be drawn due to small sample size.

General Discussion

Schizophrenia research has been fraught with controversy and difficulty. There has been disagreement concerning course and type,

including age of onset and the existence of late-onset (after age 45) schizophrenia. A major disagreement has centered around criteria and terms.

Difficulty in differential diagnosis has compounded the problem. Disorders that seem most often misdiagnosed as schizophrenia are substance abuse disorders, personality disorders--especially paranoid type, affective disorders, and organic syndromes. Organic syndromes and affective disorders appear to be even more difficult to differentiate from schizophrenia in the elderly.

The studies reviewed had methodological shortcomings which made drawing conclusions difficult. For example, many of the studies reported no explicit diagnostic criteria for schizophrenia. Furthermore, the cut-off age between early-onset and late-onset varied from age 40 to age 60. Another problem is the difficulty in identifying late-onset schizophrenics in the general population, compounded by the difficulty in determining age of onset.

This isn't to say that late-onset schizophrenia does not exist. Several explanations for the difficulty in finding this group come to mind. If most clinicians follow the DSM-III criteria, patients over the age 45 who present with schizophrenia for the first time are automatically excluded from being diagnosed as schizophrenic. Another reason may be that some clinicians or researchers do not support the theory that schizophrenia can have a late onset.

Determining the age of onset is a very difficult task. When presented with a late-onset schizophrenic, some clinicians may feel that the disorder actually began at an earlier age.

Another possible explanation is that late-onset schizophrenics may avoid or be unaware of mental health services. Elderly schizophrenics may also lack the finances or mobility to receive services. They may wish to try to hide their problems or deal with them alone. Mental health services seem to be more publicized and accepted today than they were decades ago. It makes sense that the younger population, having a greater awareness and acceptance of mental illness, would seek out these services more than the older population. The third problem with the studies reviewed is that many of them were based on assessments of the subjects by clinicians other than the researchers. The clinicians may have used criteria that differed from those of the researcher's, resulting in invalid and unreliable findings.

The major problem surfacing is the confusion in terminology. Although the latest American researchers seem to be using the term late-onset schizophrenia, many other terms are still being used to refer to this disorder: late paraphrenia, senile schizophrenia, atypical psychosis, atypical paranoid disorder, paranoid psychosis, and senility.

Among the studies reviewed, it was concluded unanimously that

onset of schizophrenia after age 40 or 45 does exist. When the results of the studies are compared, the majority of the researchers asserted that late-onset schizophrenics, like early-onset patients, form a heterogeneous group. The majority also concluded that late-onset schizophrenia is similar to the clinical picture of early-onset patients. This heterogeneous quality is probably a main reason that studying schizophrenia is so difficult. Yet some differences were found between early-onset and late-onset schizophrenia. Statistics show that schizophrenia seems to have an earlier onset for men than for women. Reasons for this sex difference in regard to age of onset is unclear. Seeman (cited in Gold, 1984) has suggested that later onset of schizophrenia in women may be due to hormonal factors.

Late-onset schizophrenic patients are predominately of the paranoid type. The majority of these individuals have hallucinations, specifically paranoid ones. One study also showed that later-onset patients had fewer negative symptoms (such as apathy or lack of motivation) than younger patients (Jeste et al, 1988).

It seems fairly safe to conclude that late-onset schizophrenia exists and is quite similar to the early-onset syndrome. The late-onset schizophrenics may have some behavioral symptom patterns that differ from younger patients, but not enough conclusive research has been conducted to determine if these variations are

significant.

Suggestions for Future Research

Several issues need to be dealt with in order to improve future research. First, diagnostic criteria for schizophrenia needs to be specified in studies. Agreement among clinicians on criteria of schizophrenia would also be beneficial. If this agreement existed, results of studies could be compared more easily. Finally, confusion in terminology needs to be cleared up. Perhaps a universal term with universal criteria can be agreed upon for late-onset schizophrenia.

Studies need to be conducted comparing early-onset and late-onset schizophrenics. Large sample sizes collected from a number of psychiatric centers are needed for both onset groups. Diagnostic criteria must be agreed upon and specified. Perhaps schizophrenia could be diagnosed according to the DSM-III-R, which specifies "late-onset" as developing after age 45. Individuals with a history of drug addiction, neurological disorders, or mood disorders should be excluded from the study. Information needs to be collected on current age, age at onset of the illness, sex, medication and dosage, the type of schizophrenia, symptoms, and scores on Andreasen's Scale for Assessment of Positive Symptoms and the Scale for Assessment of Negative Symptoms. Such studies would help determine if there is any difference in behavioral symptom patterns as a function of age of onset.

For future research, it is recommended that an analysis of differences in symptomatology as a function of age of onset be conducted. Based on the use of the DSM-III-R in psychiatric communities since 1987, it is conceivable that in the future a large sample of patients would be available for quasi-experimental studies of the function of age of onset while matching subjects on such variables as sex, education, socio-economic status, duration of the disorder, and family history.

To aid in the task of isolating schizophrenia from other disorders, more research in the biology and physiology of schizophrenia needs to occur. Objective laboratory testing may provide more accuracy for determining if a patient is suffering from schizophrenia. The next step is to find the cause or causes of schizophrenia. Why do some individuals remain mentally stable until later in life? Were these individuals somehow vulnerable to schizophrenia only as they grew older? It is interesting to wonder if late-onset schizophrenics have "something" that protects them from the disorder until later life. If that "something" could be found, perhaps we would be one step closer to finding a cure, rather than a treatment, for schizophrenia.

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