bibliography and abstracts on schizophrenia

The abstracts that appear below are drawn from the computer-based information storage and retrieval system operated by the National Clearinghouse for Mental Health Information. They were selected for inclusion here on the basis of their direct relevance to schizophrenia: judgments about the quality of the article or book abstracted have been left to the reader. Foreign titles have been translated and the city of the journal’s origin noted. Languages that use neither the Latin nor Fraktur (German) alphabets (e.g., the Slavic languages) have been transliterated. Titles of articles, books, and infrequently cited journals have been translated from these languages, and all other identifying information appears in English in their citations.

This collection is not exhaustive. The Clearinghouse routinely scans all mental health related literature, and its information system includes references to a great many articles of potential use to readers who are involved with research, training, or treatment in schizophrenia. Many of these references—notably reports of basic research—may not be published in the Bulletin, but are available from the Clearinghouse in other publications or through individually generated bibliographies. Because Psychopharmacology Abstracts publishes a comprehensive list of new articles on drug trials in schizophrenia monthly, only those articles that review a number of psychopharmacological studies are published here. Readers who wish to request computer printouts of late references or comprehensive bibliographies on specific aspects of schizophrenia may write to the following address: Technical Information Section, National Clearinghouse for Mental Health Information, National Institute of Mental Health, 5600 Fishers Lane, Rockville, Md. 20852.

The articles described in these abstracts are not available from either the Clearinghouse or the Center for Studies of Schizophrenia.

attention, perception, and cognition


A forced-choice auditory signal detection method was used to test the hypothesis that, compared to acute paranoid schizophrenics, chronic nonparanoid schizophrenics would show a restricted range of sensitivity to environmental cues. Ability to detect the presence of an auditory cue, while concurrently tracking a visual stimulus, was measured under two conditions, auditory monitoring being given primary or secondary importance. In this task, a narrowed range of sensitivity implied a greater deficit in ability to detect the auditory cue when the primary focus is placed elsewhere. As expected, this deficit was significantly greater in the chronic patients in both initial and replication experiments. Discussion centered on the function of restricted sensitivity in limiting the range of both relevant and distracting stimuli that are responded to by chronic nonparanoid schizophrenics. (10 references)—Author abstract.


A sample of schizophrenics at Vermont State Hospital who were participating in a rehabilitation training program was tested on improvement of performance on an industrial subcontract task. Predictions were made on the assumption that schizophrenics suffer from an attentional deficit and that the acquisition and retention of performance speed and accuracy would increase as a function of feedback information about the errors of performance. The feedback information facilitated the acquisition of performance accuracy for schizophrenics as a group, but the optimal amount of feedback differed between the paranoid and nonparanoid subjects. Increase in the speed of performance was a function of the diagnostic category, and retention of speed was dependent on the chronicity status of the patients. (3 references)—Author abstract.


Evidence concerning the stability and sensitivity of three classes of performance measures used to determine
different aspects of schizophrenic behavior for their stability and sensitivity to drug effects is presented. The measures, stable over a 21-day interval, were: 1) word association quality, 2) perceptual coping style, and 3) skin resistance level and reactivity. Acute schizophrenic males were administered these measures 7 and 28 days following admission to a State hospital. Half of the patients were assigned to active phenothiazine medication at 7 days and half continued on placebo. Comparison of correlations between 7- and 28-day data for drug and placebo groups revealed different patterns of stability across time and sensitivity to drug ingestion for each of these three classes of measures.—Author abstract, modified.


Three series of experiments with multidimensional scaling of art experiences (with eight paintings) are reported. In the first study, groups which had followed lectures in art history were compared to otherwise similar groups without lectures in this field. The second study compared four age groups (8, 10, 12, and 14 years). The third study was a comparative study with a group of schizophrenic patients. The particular value of the third experiment is that it demonstrates certain possibilities of obtaining meaningful similarity estimates from this group of patients. For practical reasons, the data from this exploratory experiment say relatively little about the perception of art by this clinical group. A closer analysis is required of data for individuals, partly in view of the uncertainty surrounding the validity of the diagnosis as a group designation. (3 references)—Author abstract, modified.


An attempt was made to reconcile discrepant findings in the size constancy performance of poor-premorbid, process, nonparanoid schizophrenic men. It was postulated that an impairment of basic cognitive skills, and particularly of conservation, differentiates schizophrenics and normals, and underconstant and overconstant nonparanoid schizophrenics, and that this and an associated primitive visual centration effect may lead to paradoxical overconstancy for some schizophrenics. The results confirm that schizophrenics may be both underconstant and overconstant, and that they exhibit significantly low levels in primitive cognitive operations. The latter abnormalities are particularly marked in overconstant schizophrenics, for whom there is strong evidence of centration with a distant standard. Contradictory findings of overconstancy as well as underconstancy in nonparanoid schizophrenics may thus be a function, apart from other determinants, of differences in the availability of conserving operations and of differences in centration strategies, where the latter would be influenced by characteristics of the experimental display. (24 references)—Journal abstract.


An empirical study of stimulus overinclusion (difficulty in attending selectively to relevant stimuli), hypothesized as an important underlying factor in schizophrenia, is presented. A test for stimulus overinclusion was administered to 80 acute schizophrenics and 119 acute nonschizophrenic patients during the first week of hospitalization, and to 53 normal controls. The patients were retested 6 weeks later, after their acute symptomatology had diminished. The results suggest that 1) schizophrenics score significantly higher on stimulus overinclusion, but it is unlikely that stimulus overinclusion is an important etiological factor for all or most early schizophrenics; 2) periods of acute upset lead to some increase in stimulus overinclusion; 3) stimulus overinclusion is found in normals as well as patients; and 4) consistent relationships between stimulus overinclusion and personality variables found for patients are similar to those relationships found for normals. (33 references)—Author abstract, modified.


A rationale for the importance of using measures of motility in assessing schizophrenic and other psychopathology is discussed. The presumed importance of motility lies in its critical role in the organization and control of many psychological processes including perception. Its role in monitoring effective and adaptive response to stimulus inputs, to executive intentions, and its central importance in regulation through feedback are emphasized. The involvement of the musculature in schizophrenia is underscored with reference to some significant research findings. (24 references)—Author abstract, modified.

The perceptual style of processing stimuli (kinesthetic and figural aftereffects) by 53 acute psychiatric inpatients was related to disorders in their perceptual experience of the environment and in their formal thought processes (overinclusive and idiosyncratic thinking). Psychiatric patients who reduced incoming stimuli also manifested greater abnormal perceptual experiences and thought disturbances. At the time of hospitalization the schizophrenics reduced incoming stimuli to a greater extent than did the nonpsychotics and latent schizophrenics. (25 references)—Author abstract.


The hypothesis that overinclusive thinking in schizophrenics reflects a retention failure was studied. As part of a wider study, 17 unequivocally diagnosed schizophrenics were administered two tests of overinclusive thinking—the Goldstein Object Sorting Test and the Chapman Card Sorting Test. Subjects' scores on the two tests correlated 0.67, and when age and IQ were partialed out, the correlation rose to 0.78. The correlation accounts for some 60 percent of the variance between the two tests. The results do not support the hypothesis. (5 references)

768. Ivison, D. J. A theoretical note and some empirical data on overinclusion and retardation in the schizophrenics. Australian Psychologist (St. Lucia, Brisbane), 7(3):254, 1972.

It is hypothesized that chronic nonparanoid schizophrenics who are retarded and not overtly R-overinclusive (Payne's perceptual overinclusion, Broen's response interference) will become overtly R-overinclusive when forced to increase their rate of responding. The prediction was confirmed, but questions were raised about the role of the intelligence quotient and the hypothesis that there is a single limited capacity channel for both internal and external stimuli. (1 reference)—Author abstract, modified.


The subjects in a multivariate study of attentional dysfunction were 120 hospitalized male psychiatric patients (60 schizophrenics and 60 nonschizophrenics, half of each group acute and half chronic). Contrary to assumptions, the five tests administered were found not to intercorrelate highly. A large number of individual difference variables were also collected. Generally, they failed to correlate significantly with task performance. (15 references)—Journal abstract, modified.


A review of the use of the Continuous Performance Test (CPT), a simple test of attention, in assessing drug effects in schizophrenic patients is presented. Results of experiments are reviewed, showing the sensitivity of the procedure to both acute and chronic administration of phenothiazine drugs. In single doses the drug impairs performance, while after chronic administration of medication performance improves. Impairment in performance on the CPT is found in approximately 40 to 45 percent of testable patients who show no deficit in performance on a simple cognitive test. In patients with a deficit on the CPT, performance after chronic drug therapy covaries with rating scales of clinical state. Patients who perform poorly on the CPT are more likely to have a history of mental illness in the family than those patients whose performance is indistinguishable from that of normal subjects. (15 references)—Author abstract, modified.


The relationship between stimulus content and attention in paranoid and nonparanoid schizophrenics was studied, based on attentive-looking behavior as a function of stimulus content and diagnostic classification. A feedback EEG measure of orienting operationally defined interest and motivation. Three hypotheses were formulated: 1) a power hypothesis—attentive looking for the paranoid would vary as a function of the perceived powerfulness of the stimulus; 2) vigilance hypothesis—attentive looking would vary as a function of diagnostic classification, with paranoids exhibiting longer looking times than nonparanoids, regardless of the stimulus content; and 3) the interest hypothesis—within the nonparanoid sample, attentive looking would vary as a function of premorbidity, with the good-premorbid subgroup showing greater visual attentiveness than the...
poor-premorbid subgroup. Four types of stimuli in the form of color slides were presented. The results confirmed the interest hypothesis and provided partial support for the vigilance hypothesis. Concerning the vigilance hypothesis, the paranoid group failed to attend longer to all of the presented color slide series than the good-premorbid nonparanoids, as was predicted. The poor paranoids did, however, attend longer than the good paranoids.—Journal abstract, modified.


Eye movements during perception of pictures were examined in 24 chronic schizophrenic and 20 normal subjects. The moving range of the gaze in chronic schizophrenics was much more limited than in normal subjects. A large number of the small rapid eye movements with closed eyes appeared in the schizophrenic subjects who showed limited moving range of eye fixation points. Chronic schizophrenic patients probably look at certain parts vaguely. This tendency may reflect their decreased motivation and lack of interest in trying to get information about the pictures and to understand them. (16 references)


Differences in auditory signal detection between paranoid and nonparanoid schizophrenics were examined on and off phenothiazine medication. Compared to normals, 1) paranoids detected signals less accurately and used more conservative decision-making criteria; 2) nonparanoids detected signals less accurately under easy signal to noise (S/N) conditions but as well as normals under difficult conditions; they were neither more nor less conservative in the criteria they adopted; and 3) paranoid and nonparanoid subjects had a constant number of commission errors under all S/N conditions, while normals showed an increase with each decrease in S/N ratio. Although no significant overall effect of phenothiazine medication on the signal detection performance of schizophrenics was found, there was a significant interaction between dosage level and diagnosis. The signal detection measure does not appear to be a direct measure of sensory sensitivity in schizophrenics. (25 references)—Author abstract, modified.


Differences in auditory signal detection between paranoid and nonparanoid schizophrenic patients were examined under six signal to noise conditions for those off and those on different dosages of phenothiazine medication. Their performance was compared with normals. It was found that, with increasing levels of phenothiazine medication, the signal detection performance of paranoids increased while for nonparanoids it decreased. Normals performed best under all signal to noise conditions, and paranoids, worst. Only paranoids as compared to nonparanoids adopted consistently and significantly more conservative decision-making criteria. Both normals and nonparanoids adopted decision criteria close to optimum. The d' measure of signal detection theory used to assess signal detection performance does not appear to reflect solely the sensitivity of the auditory mechanism in schizophrenics; rather, it reflects the combined influences of decreased correct responses, increased propensity to make omission errors, and large response variability. (34 references)—Author abstract, modified.


It was hypothesized that the following comparable groups would differ significantly in their scores on the Bender-Gestalt Test: 1) schizophrenic and organic mental patients; 2) normal subjects and organic mental patients; 3) schizophrenic and normal subjects; and 4) organic mental patients and the combined group of nonorganic mental patients and normal subjects. The results confirmed the hypotheses. Thus, there are marked differences in the nature of perception and the corresponding visual-motor functions of the schizophrenic, organic (brain-damaged) mental patients, and normal individuals when the performance of each of these groups is considered individually as well as when the visual-motor functions of the combined group of the schizophrenics and normals are compared with those of the organic mental patients. The results obtained here support the findings of other psychologists regarding the applicability of the Bender-Gestalt Test in differentiating the nature of cognitive functions and expressive behavior of organic and nonorganic mental patients. (16 references)

A strategy is proposed to study the time course of antipsychotic drug effects upon performance measures in parallel with the time course of drug effects upon the symptoms of schizophrenia, general morbidity, and ward behavior. Critical for the productivity of this strategy is the inclusion of performance measures that reflect functioning in psychological processes—e.g., attention and perception—in which schizophrenic-specific deficit or deviance has been demonstrated and which may be presumed to mediate symptom formation. Promising candidates for inclusion in a battery of performance measures under these criteria are those reflecting functioning in the information-processing sequence, that is, in sensory-attentional/perceptual-cognitive processes. Given this approach, the examination of relationships between patterns of change at the level of deficit performance and of symptomatology has the potentiality of disclosing both mechanisms of drug action and critical mediating mechanisms of schizophrenic disorder. (13 references)—Author abstract.

biological


The level of serum transaminases and serum alkaline phosphatase in 96 schizophrenic patients aged 17 to 60 was studied. The serum transaminases are sharply elevated in agitated paranoid cases of recent onset. The level of serum alkaline phosphatase tends to be elevated as the disease enters the chronic stage, and steady deterioration sets in. Although it is unlikely that factors unrelated to schizophrenia cause alterations in the enzyme values, no satisfactory explanation for the mechanism or significance of the observations is yet apparent. Isoenzyme studies of alkaline phosphatase will reveal the source of this enzyme, and a detailed study of the liver functions in all types of schizophrenia would also be useful, since certain enzymes are found elevated in liver diseases. Statistically significant elevations of serum gamma globulins, characteristic of liver disease, have also been found in chronic schizophrenics. (5 references)


The results of a psychophysiological (conditioning) analysis of 60 chronic schizophrenics are presented. A relationship between the level of psychophysiological performance and differential drug withdrawal effects, based upon the use of phenothiazines and the Verdun (Quebec) Conditioning Program, is revealed. Regression from a higher to a lower level of organization—for example, from integrational to skeletal-muscular or from skeletal-muscular to autonomic functional systems—and dissociation within a functional system or between the different functional systems tested were shown to be prevalent in schizophrenic patients. It appears that in various schizophrenic patients there may be a differential disturbance of functioning in the brain, inasmuch as an equilibrium was not found to be maintained between excitatory and inhibitory processes in the brain. (20 references)—Author abstract, modified.


Within the intermediary metabolism, biochemical parameters are demonstrated which can be correlated to schizophrenia. The change of ADP concentration and of ATP/ADP-Quotient (factor A) indicates the genotype of schizophrenia in manifest cases as well as in healthy heterozygotes. The regulations type 1 (asthenic type, factor B) is connected with a schizoid personality and indicates a dominantly inherited constitution. The change of DPGS concentration is linked with tendencies toward acute and phasic type of courses as well as toward remissions and good prognosis. Tendencies of regulation seen in the Q-ADP show good prognosis and phasic courses. In spite of the presence of factors A and B, the manifestation of schizophrenia may be inhibited by these regulations. It is concluded that all manifestations of schizophrenia are a result of an interaction between the metabolic processes and the mechanisms of regulation within the group of metabolism of energy rich phosphates. (15 references)—Author abstract, modified.


A relationship between psychoses and the intermediary metabolism of the catecholamines has been postulated by various scientists. Supporting the claims that indole metabolism is involved in schizophrenia, model psy-
choices have been artificially created by substances such as mescaline and lysergic acid diethylamide (LSD). Another possible effect in the production of psychoses is associated with the precursor amino acids of the biogenic amines. In this connection, the long-term treatment of Parkinsonism with L-dihydroxyphenylalanine (L-DOPA) has revealed that amino acid administration, without the addition of a monoamine oxidase (MAO) inhibitor, can produce a psychosis. Tryptophan administration has provoked psychotropic effects and neurological aberrations in healthy subjects. Friedhoff and Van Winkle have reported the occurrence of 3,4-dimethoxyphenethylamine in schizophrenic patients, and not in healthy subjects. Sprince has observed that methionine or tryptophan administration, in combination with an MAO inhibitor, provokes an increase in urinary tryptamine, accompanied by an exacerbation of psychotic symptoms. It is postulated that a disturbance in the chemical equilibrium of certain transmitter substances is responsible for psychoses.


The quantitative changes in schizophrenic dementia are compared with the normal brain, in terms of four areas of the cerebral cortex. In each of these areas the relation between neuron number, nuclear volume, and depth was measured. The thickness of the cortex in the normal brain gave a mean value of 2,646 μm; the thickness in the schizophrenic brain was 2,122 μm. Significant differences were found between the nuclear volumes in normal and schizophrenic brains. Cell loss was significant in schizophrenia (about 57 percent); in combination with this cell loss, the cortical thickness was diminished by more than 20 percent, and it is suggested that other cortical elements are also diminished. The cell loss was found minimal in area 17 (most posterior part of the cortex), and the nuclear volume was also less in this area (it may be due to the fact that nuclear volume is swollen in other areas). Attention is drawn to the results in presenile dementia which suggest the same loss of neurons and the same atrophy as in schizophrenic brains. (19 references)—Author abstract, modified.


Chemogenic theories regarding the cause and treatment of schizophrenia are discussed. These theories may be divided into roughly two schools. One, proposed by Dr. Robert G. Heath of Tulane, contends that schizophrenia is an autoimmune disorder and that taraxein, found in the blood of schizophrenics, is an antibody working against the brain’s septal caudal region. Drs. Charles Frohman and Edward Domino of the Lafayette Clinic in Detroit belong to a second school which contends that schizophrenia results from a malfunction of amine metabolism in the brain. They have discovered in nonschizophrenics an enzyme that appears to destroy the alpha helical formations of alpha-2-globulin which are believed to lead to increased transport of the amino acid tryptophan into certain brain cells. The excess tryptophan is converted to an indoleamine known to be a potent hallucinogenic. A related theory is held by Dr. Larry Stein of Wyeth Laboratories, who contends that the disruptive agent is a phenylethylamine rather than an indoleamine. Instead of creating a hallucinogen, phenylethylamine gets into nerve terminals and damages nerve cells which control goal-directed behavior and the ability to experience pleasure. In addition to the chemogenic theories, the genetic, social, and psychological theories of the etiology of schizophrenia are also mentioned. The conclusion is that possibly all of these theories are valid to one extent or another.


A connection between cerebral trauma and the onset of a schizophrenic psychosis is illustrated by five cases. The principal characteristics of these are 1) sex, four females, one male; 2) age at the time of the accident, 38 to 48 years; and 3) loss of consciousness, in only one case, a retrograde amnesia during the accident, two cases of dizziness, and two cases of cloudiness (one of whom lost consciousness for 12 days). A delay between the shock of the accident and the onset of hallucinations was from 3 weeks to 1 year. For each of the injured subjects, the apparition of hallucinations occurred during an encephalopathic syndrome, which was very intense with gross neurological disorders involving sensory motor and functions either unilateral or bilateral. It is submitted that there is a direct relationship between the cerebral injury and the onset of the hallucinatory psychosis since, in each of these cases, the patient had been healthy before the accident. Similar observations from the literature are cited. (24 references)

784. Dohan, F. C.; Martin, L.; Grasberger, J. C.; Boehme, D.; and Cottrell, J. C. Antibodies to wheat...
Evidence that cereal grains may be harmful to schizophrenic as well as celiac patients led to the hypothesis that serum antibodies to wheat gliadin would occur in schizophrenics, as in celiac patients, considerably more frequently than in normal controls. Although the frequency of gliadin antibodies in hospitalized schizophrenics was considerably increased, it was equally increased in hospitalized nonschizophrenic psychotic patients. The frequency (20.3 percent) in all psychiatric patients (presumably the most emotionally distressed of the test groups) was over six times that of the normal controls (3.1 percent) and was significantly greater than in the presumably less distressed group, the hospitalized nonpsychiatric patients (13.7 percent). However, 76 percent of a sample of positive nonpsychiatric patients had hopeless crippling disease (e.g., advanced cancer) compared to 35 percent of a random sample of negative patients and were thus more likely to experience severe anxiety and despair. It was hypothesized that sustained emotional distress increases the probability of developing antibodies to gliadin (and possibly other food antigens). It is suggested that a decrease in gut barrier function may enhance absorption of gliadin polypeptides, some of which may be harmful to those with the genotypes for schizophrenia or celiac disease. (27 references)—Author abstract, modified.


Red cell and plasma cholinesterase levels of 39 drug-free male, chronic schizophrenic patients, using acetylthiocholine as substrate, were determined and compared to a normal control population. Nutritional factors, liver disease, intestinal parasites, and genetic influences were studied. Approximately two-thirds of the chronic schizophrenic patients had normal plasma cholinesterase, and all had normal red cell acetylcholinesterase activity. There was a significant correlation between plasma cholinesterase and total globulin. Almost all of the schizophrenic patients had normal dibucaine (DN) and fluoride (FN) numbers for plasma cholinesterase inhibition, indicating a usual (U) phenotype. One of the 30 chronic schizophrenics had a US and another a UA phenotype. Feeding a 4,800-calorie diet per day for 3 months to three patients with a U-phenotype but low plasma cholinesterase resulted in an increase in weight and plasma cholinesterase toward normal in only one patient. Most of the schizophrenic patients with a normal or subnormal plasma cholinesterase level ate an adequate diet of 2,300 calories per day, but did not seem to be able to gain weight. In spite of laboratory findings of normal liver function, about one-third of the chronic schizophrenic patients had low plasma cholinesterase activity. This was unrelated to the presence of intestinal parasites. In the chronic patients, the incidence of genetic abnormalities of plasma cholinesterase was very low, but greater than expected in a normal population. Steady state levels of plasma cholinesterase activity are not directly correlated with chronic schizophrenia. However, plasma cholinesterase can be used in research studies of schizophrenia as an index of liver, nutritional, or other metabolic alterations. (47 references)—Author abstract, modified.


Plasma free fatty acids (plasma FFA), serum cortisol, blood sugar, pulse rate, and systolic blood pressure were studied in 28 male mental patients before and after I.V. injections of a standard amount of regular insulin (0.1 IU/kg body weight). Of these, 14 subjects were diagnosed as acutely schizophrenic and 14 subjects were nonpsychotic. The schizophrenic patients displayed higher FFA levels throughout, and a greater circulatory response to insulin. Thus, an earlier postulated hypothesis that schizophrenics are less reactive than normals in sympathetic responsivity does not refer to schizophrenics in an acute phase of the disease. A correlation was found between circulatory variables and plasma FFA at rest, but correlations were generally lacking between serum cortisol and plasma FFA, as well as circulatory variables. Increased activity in the autonomic nervous system seems to play an important role with regard to the higher FFA values in this group. There was an interesting difference between the FFA response and the blood glucose response to insulin: the schizophrenics showed positive correlations, while the nonpsychotics exhibited negative ones. This suggests a defective homeostasis in schizophrenia. (16 references)—Author abstract.

In a paper presented at the 11th Annual Meeting of the Association for the Psychophysiological Study of Sleep, it is reported that following 2 nights of partial rapid-eye-movement (REM) sleep deprivation by the awakening method, six actively ill schizophrenics failed as a group to have a REM rebound over a 5-day recovery period, although five nonpsychotic psychiatric patients as a group did have a REM rebound. Within each group, however, there was some variability of response to the deprivation.—Journal abstract, modified.


Ascorbic acid retention was studied in schizophrenics. Deficiencies in a novel test designed to determine the presence of urinary ascorbic acid have cast doubt on the validity of previous studies purporting to demonstrate gross abnormalities in the utilization of ascorbic acid by the schizophrenic. Due to a dilution effect, apparent retention of ascorbic acid is characteristic of subjects drinking large volumes of fluids, which in turn is more characteristic of the hospitalized schizophrenic than of a control. Using an established ascorbic acid test procedure, no differences in ascorbic acid utilization were noted in a patient and control group, while true retention was characteristic of the cigarette smoker. (8 references)—Author abstract.


In a heterogeneous sample of 80 schizophrenics, both institutionalized and noninstitutionalized, skin conductance orienting responses to repeated 85-dB tones either failed or were slow to habituate to criterion, or failed to occur. Schizophrenics with orienting responses had higher skin conductance levels and a higher incidence of spontaneous fluctuations of skin conductance. Schizophrenics had higher response amplitudes, faster latencies, and faster recovery times than a control group of 20 nonpsychotic patients or normal controls. The results are discussed as possible evidence of limbic forebrain pathology in schizophrenia. (44 references)—Journal abstract.


Computer analysis of brain waves telemetered from a freely moving patient with chronic schizophrenia has permitted automatic recognition of a variety of behaviors and successful discrimination between bizarre and normal-appearing behavior in the same patient. A small percentage of misclassification was noted entirely in the bizarre group, but in no instance was bizarre behavior misclassified as normal or vice versa. (13 references)—Author abstract, modified.


The similarities between LSD-induced psychosis and schizophrenia are discussed. Electroconvulsive therapy (ECT) is reported to be effective in terminating LSD-induced psychosis. Observation of patients shows that schizophrenia was clearly present for some time before subjects began to consume LSD and other hallucinogens. It is felt that LSD merely activates or trips a latent or undetected psychosis. Unilateral ECT combined with chemotherapy is suggested as a very effective treatment method. Vitamin B3 is also shown to be highly effective in decreasing the perceptual component of the schizophrenic-like experience resulting from LSD-induced psychosis. (14 references)


Using psychological methods, the hypothesis that verbal hallucination in chronic schizophrenic patients is experienced at the decreased level of attention is examined. Seven patients in whom verbal hallucinations were usually accompanied by an increased electromyographic (EMG) activity of speech muscles were used. In these patients, the verbal hallucination was judged to be experienced when such an EMG increase occurred. They had been experiencing verbal hallucination for more than 2 years but were relatively indifferent to it. The level of attention was considered to be decreased when the amplitude of averaged visual evoked response (VER) was reduced and reaction time (RT) was prolonged. In all subjects, longer RT and reduced VER amplitude were observed at the presence of EMG increase of speech muscles when compared to its absence. An analysis of
Quantitative pharmacoelectroencephalography, a new method which utilizes digital computer analysis of the EEG and statistical procedures, was applied to the determination of the effect and effective dosage range of a new benzodiazepine derivative, SCH-12,041. The subjects were six men with acute anxiety syndromes and four male and three female schizophrenics. As predicted by the pharmacoelectroencephalographic evaluations, a single oral dose (10 to 20 mg in anxiety patients and 80 to 100 mg in schizophrenics) of SCH-12,041 was effective in reducing anxiety. In addition, this compound reduced the symptoms of depression and had a therapeutic effect on different types of epileptic syndromes. It is concluded that the method used is better suited for testing the effects of minor as opposed to major tranquilizers. (8 references)—Author abstract, modified.

Based on digital computer sleep prints, it was found that 31 schizophrenic patients, compared with 13 nonpsychotic subjects, have significantly fewer deep sleep stages, more light sleep stages and awakening periods, a later onset of spindle sleep, and a marked variability in the sleep profile, both in a single night and from night to night. No significant differences between the two groups were observed regarding the length of REM sleep (paradoxical sleep), the amount of single REM and burst REM activity, and the nature of the REM cycles. The evaluation of the computer-analyzed EEG variables during both all-night sleep and total REM time demonstrated that schizophrenics have fewer slow delta waves, less frequency deviation, lower amplitude variability and average absolute amplitude, and more superimposed very fast activity than nonpsychotic subjects. In contrast, nonpsychotics had fewer 5- to 8-cycle-per-second and 12- to 16-cycle-per-second waves. The comparison of the all-night sleep patterns of hallucinating and nonhallucinating schizophrenics did not reveal any significant differences regarding the length of sleep stages and length of REM periods. Hallucinating schizophrenics had longer periods of REM burst activity than nonhallucinating schizophrenics, but this was only at $p<0.10$ level of statistical significance. No significant differences between hallucinating and nonhallucinating schizophrenic patients were found in the computer-analyzed EEG variables. (30 references)—Author abstract, modified.

Neurophysiological patterns of psychotic patients were differentiated from those of normal healthy volunteers. The following methodological aspects are considered: 1) selection of carefully diagnosed patients; 2) avoidance of the interference of therapeutic procedures with the spontaneous neurophysiological patterns; 3) careful selection of matched control subjects; 4) use of quantitative methods; and 5) implementation of prospective rather than retrospective investigation methods. Taking into account the first four methodological points and using visual as well as analog power spectrum and digital computer period analysis, it was possible to detect statistically significant differences between the EEG's of 100 chronic schizophrenic patients and 100 matched normal volunteers. Schizophrenics revealed more delta, theta, and fast beta activity, and less fast alpha and slow beta waves than normals, who, in turn, exhibited more rhythmical activity, occipitofrontal synchronization, and alpha and beta bursts, as well as less general dysrhythmia. Schizophrenics also exhibited smaller EEG amplitudes and fewer sleeplike patterns than normals. The pathophysiological significance of these findings, which corresponded using all three evaluation methods, is discussed. (37 references)—Author abstract, modified.

Abnormal movements of tardive dyskinesia are presumed to result from hyperactivity or supersensitivity of dopaminergic neurones in the brain. Methyldopa (Aldomet) is known to affect dopaminergic systems either by competitive inhibition of dopa decarboxylase or by synaptic action of its metabolite as a false neurotransmitter. Dual action of methyldopa on the dopamine receptor could then be expected theoretically to result in a somewhat equivocal response, although it was hoped that the results would be more helpful than harmful to the patients. On these theoretical grounds, methyldopa was administered to nine schizophrenics with tardive dyskinesia at daily dosages up to 1,000 mg over 6 weeks. Methyldopa did not show any marked clinical effect in suppressing abnormal mouth movements, although it induced considerable decrease in blood pressure. Psychotic episodes presumably due to methyldopa were observed in two patients. (38 references)—Author abstract.


Vulnerability to schizophrenia is examined in light of its clinical and psychological characteristics as well as biochemical hypotheses that it may generate. Two biochemical hypotheses seem most tenable. One centers upon the hallucinogenic properties of substances; the other is the transmethylation hypothesis. Recent neurophysiological studies on schizophrenics have focused upon the phenomena of hyperarousal and attention deficits and their possible relationships to brain stem mechanisms of arousal. Although he considers it premature to formulate specific hypotheses, the author stresses the importance of recognizing the newer biochemical and pharmacological approaches to schizophrenia and the relevance of that disorder of fundamental studies of the biogenic amines and the neuronal and behavioral systems that employ them in the brain. (32 references)


The pathophysiology of schizophrenia and the striatum is discussed. Schizophrenia is a disease of unknown pathophysiology with no demonstrable structural lesion. In several neurological disorders, altered physiology of the striatum without altered structure of the striatum is related to their pathophysiology. The treatment of these disorders is directed at the abnormal neuronal physiology, which is thought to involve dopamine acting at dopamine receptor sites in the striatum. The neuroleptic agents known to be of value in the treatment of schizophrenia influence the activity of dopamine at striatal dopamine receptor sites. This is true in experimental animals and in humans with schizophrenia. The diagnosis of schizophrenia is often made on clinical grounds in patients with Huntington's chorea. Chronic L-dopa administration and chronic amphetamine abuse, which both lead to chronic increased dopamine input into the striatum, can produce schizophrenialike syndromes. Taken as a whole, these data suggest that the activity of dopamine at dopamine receptor sites in the striatum may participate in the pathophysiology of schizophrenia. (82 references)—Author abstract.


The coefficient of variation of the absolute EEG voltage and the delta band spectral intensity, both presumed measures of subject arousal, were investigated for their interrelationships in a group of 18 control and 18 chronic schizophrenic subjects. For selected scalp and ocular leads, 150 EEG blocks were analyzed in each subject. The coefficient of variation was calculated between 10-second blocks and also for each block using five contiguous 2-second intervals. Data blocks were analyzed after ordering both by delta band spectral intensity and coefficient of variation. The occipital lead coefficient of variation was confirmed as a patient/control separator. A significant correlation was shown between the coefficient of variation and the delta spectral intensity, this relationship being more marked in controls than in patients. Subject age and prior medication experience affected the findings. Consideration of the overall data was interpreted as indicating that the schizophrenic subjects were less than normally aroused and showed diminished movement to either higher or lower level of cortical arousal. (14 references)—Author abstract, modified.


The activity of creatine phosphokinase (CPK) was simultaneously measured in the serum and spinal fluid of 11 acutely psychotic patients (most of them schizo-
The hypothesis of disordered transmethylation in schizophrenia was examined by comparing S-adenosylmethionine (SAMe) concentration and catechol-O-methyltransferase (COMT) activities in venous blood of schizophrenic and non schizophrenic patients. No differences in blood SAMe concentrations were found between the groups. A significant correlation was found between blood COMT activity and SAMe concentration, which suggests that some schizophrenics may methylate biogenic amines more actively than others. (24 references)—Author abstract, modified.


An introduction to biological studies and experiments on psychosis is presented, centering on schizophrenia and manic depression. Biological studies of schizophrenia by Himwich, Hoffer and Osmond, and Kety, biological studies on manic depression, and the results of autonomic nerve function tests obtained from 54 chronic schizophrenics, 33 manic-depressives, and normal healthy subjects are discussed. The results from chronic schizophrenics show: 1) schizophrenics are more of type P, and less of type S or N according to Mecholyl tests; 2) few schizophrenics react to adrenalin or trocarpine; 3) no significant difference is observed in tests of atropine levels between schizophrenics and normal subjects; 4) the fluctuation between the highest and lowest blood pressure in schizophrenics is smaller in the Hines-Brown Blood Pressure Test than for normal subjects; and 5) 32.0 percent of schizophrenics show abnormal levels in Thorn Tests, but normal subjects show none. The results from manic-depressives show: 75.0 percent are classified by type N Mecholyl tests, but no type P is found; no significant difference is observed in the adrenalin test, trocarpine test, or Hines-Brown Blood Pressure Test between normal subjects and manic-depressives; and 3 out of 27 patients in depressive states show abnormalities in Thorn Tests and metabolism rate. (25 references)


The hypothesis of disordered transmethylation in schizophrenia was examined by comparing S-adenosylmethionine (SAMe) concentration and catechol-O-methyltransferase (COMT) activities in venous blood of schizophrenic and nonschizophrenic patients. No differences in blood SAMe concentrations were found between the groups. A significant correlation was found between blood COMT activity and SAMe concentration, which suggests that some schizophrenics may methylate biogenic amines more actively than others. (24 references)—Author abstract, modified.


Biopsies of the frontal gyrus from both schizophrenic and nonschizophrenic brains were examined by electron microscopy. The results indicated the presence of the following: prominent Golgi apparatus within the cytoplasm of the nerve cell; membranous structures with interconnected tubules in the nerve fibers; abnormal structures in the synapses, and a lack of vesicles in many synapses; granular and vesicular material accumulation in the axon oligodendroglial interface of myelinated nerve fibers (it is suggested that this is due to a disturbance of the metabolism of the neuron, due to an enzyme deficiency); a large amount of lipofuscinlike material in the cytoplasm and the processes of the oligodendroglia. Only the neuron and the oligodendroglia showed specific changes. (35 references)—Author abstract, modified.


Because monoamine oxidase (MAO) has important regulatory functions in biogenic amine metabolism, and because MAO-inhibiting drugs may on occasion contribute to exacerbations of psychotic behavior, MAO activity in blood platelets of 33 schizophrenic patients was examined. Results confirmed that MAO activity was markedly decreased as compared with enzyme activity in 22 nonhospitalized age- and sex-matched normals. Other biological differences between schizophrenics and normals have been found to result from the effects of phenothiazine drug treatment, hospitalization, and differences in diet and activity. A study of 17 chronic schizophrenic patients who had been withdrawn for 2 weeks or longer from phenothiazines and other drugs revealed slightly lower mean platelet MAO activity. As the life span of platelets is 9.9 days, it is unlikely that...
reduced MAO activity is due to phenothiazines. Five patients studied within 2 weeks of admission for acute, first episode schizophreniform symptoms, who had not received drugs, also had significantly reduced platelet MAO activity. This suggests that reduced MAO activity is not an effect of hospitalization alone. The possibility that there is a similar reduction of this enzyme in other tissues, including brain, in schizophrenics is important to explore, since treatment with MAO-inhibiting drugs in normals, medical, and psychiatric patients has been associated with exacerbation of psychotic phenomena and the de novo onset of psychosis. The development of psychotic symptomatology in schizophrenic patients during methionine and tryptophan administration may be potentiated by MAO-inhibiting drugs. (22 references)


The behavior and urinary excretion of the N,N-dimethyltryptamines in chronic schizophrenics free of drugs and on unrestricted diets were compared with those of normal individuals challenged with a diet rich in foods containing serotonin. In the absence of tranquilizing drugs and without chemical stress as well, the behavior of all six patients worsened but to different degrees. The worsening of their symptoms may be due to the removal of the constraints afforded by the tranquilizing drugs. Four of six chronic schizophrenics eliminated N,N-dimethyltryptamines. On the other hand, none of the seven normals, even with the serotonin-rich diet, excreted any of these substances or revealed any changes in behavior that could be attributed to the diet. (11 references)—Author abstract, modified.


A new method of determination of bufotenine in the urine of schizophrenic and normal control patients is presented. Reagents used for positive identification are: 1) p-dimethylaminocinnamaldehyde; 2) diazotized o-tolidine; and 3) o-phihaldehyde (OPT). OPT was found to be the most sensitive and specific, since it combines in one step the qualitative identification, separation by two-dimensional thin-layer chromatography, and the quantitative estimation. The urine samples of normals showed no bufotenine in contrast to the samples of chronic and acute schizophrenics. (15 references)


An experiment was conducted to discover if 3,4-dimethoxyphenethylamine (DMPEA) is a normal metabolite occurring in normal subjects or an abnormal one occurring in schizophrenics. Over 100 urine samples from normal controls and schizophrenics were examined for DMPEA by a selective and sensitive method which converts the primary amine into an isothiocyanate (NCS) derivative. In no case was DMPEA detected in the urine. When five of these samples were also run by gas chromatography-mass spectrometry (GC-MS), the results confirmed the negative findings. Two of the controls were subjected to a high tea intake during the period of urine collection. (14 references)—Author abstract.


Since methyldopa has been classified as a central nervous system depressant that produces tranquilization and reversible extrapyramidal symptoms, as well as reducing central amines, it has been suggested that it might have an antipsychotic potential. A study showed a statistically significant deterioration in patients treated with methyldopa as compared with those treated with methotrimeprazine; however, five patients showed some improvement on methyldopa. It is suggested that methyldopa's lack of general antipsychotic activity is related to a reduced dopamine concentration in the brain instead of an increased turnover rate, which is characteristic of more effective neuroleptic drugs. (34 references)—Author abstract.


Schizophrenic patients with high or low blood histamine levels are found to have correspondingly high or low basophil counts. The correlation coefficient is +0.92 for 57 females and +0.51 for 90 males. These data may lead to automated basophil counting as a screening method in emotionally disturbed young adults. (16 references)—Author abstract, modified.

An account is given of a pharmacogenetic study of O-methylation (with particular reference to 4-O-methylation) by 21 acute schizophrenics and 55 control subjects. The urinary metabolites of protocatechuic acid, a compound which is extensively methylated in man and which can be administered under loading conditions, were measured. No significant differences in the methylation process were detected between normal subjects and schizophrenics. (37 references)—Author abstract, modified.


In a study of average auditory evoked responses in the EEG's of schizophrenics over a time course, 21 schizophrenics and 21 controls were exposed to a 10-minute sequence of frequent and infrequent auditory stimuli. The amplitude of the third positive-going component (P3) of the average evoked response to infrequent stimuli was much larger in the control group. When a P3 amplitude of 3.20 µV in the first 2.5 minutes was used as a dividing point, only 7 of the 42 subjects were misclassified. This amplitude had a significant correlation with patient's age at first hospitalization. Amplitude of the second positive-going component (P2) to frequent stimuli was also much larger in the control group. This amplitude had a significant correlation with medication dosage in terms of equivalent amounts of chlorpromazine. Behavioral scales failed to correlate significantly with evoked response measures. Evoked response latencies did not distinguish the two groups. (32 references)—Author abstract, modified.


Measurements of pupillary dilatation and constriction were employed as indices of sympathetic-adrenergic and parasympathetic-cholinergic activity, respectively, to study autonomic dysfunction in active and in remitted schizophrenic patients during and following stress. The integrated reciprocal relationships between the sympathetic and parasympathetic systems that characterized normal individuals during stress and homeostatic recovery were not found in any of the patients. Instead, all actively psychotic as well as remitted patients showed distinct, discrete varieties of disorganized, unintegrated autonomic responses to stress and during homeostatic recovery. The results suggest that the schizophrenics are characterized by a persisting, possibly irreversible, defect of central autonomic origin, and that the nonintegrative autonomic mechanisms are unrelated to the patient's clinical picture, the course of illness, or the state of clinical recovery. (11 references)—Author abstract, modified.


In order to determine whether significant differences in the responsivity of cholinergic parasympathetic mechanisms controlling the activity of the sphincter pupillae in response to light stimulation existed between normals and schizophrenics, eserine, a reversible acetylcholinesterase inhibitor, was instilled into the conjunctival sac. The eserinizd iris of psychotics was found to constrict to a greater extent and more rapidly in response to light stimulation. In a complementary fashion, pupillary dilatation in darkness was found to be markedly attenuated. A mydriatic, cholinergic blocking agent, homatropine, when instilled into the conjunctival sac of normals and schizophrenics, was found to affect differentially the dilatation of the pupil in the darkness and the constriction of the pupil in response to light. The dark-adapted homatropinized pupil of normal subjects was found to be significantly larger than that of psychotics. Concomitantly, homatropine was found to be significantly more effective in blocking the cholinergic sphincter pupillae of normals in response to light. These results suggest that schizophrenics are characterized, in part, by excessive central parasympathetic outflow. (20 references)—Author abstract.
ences were found. Of the 27 patients who were actively psychotic, 93 percent were found to be aberrant on one or more of the variables, while 75 percent of the psychotics in remission were also found to deviate significantly. Moreover, observed patterns of aberrant pupillary response were found to be almost identical in both groups of patients. Based on the samples studied, it was concluded that 75 percent of schizophrenics in remission, about to return to their families and communities, manifested patterns of aberrant autonomic dysfunction that were indistinguishable from the patterns manifested by actively psychotic patients. (26 references)—Journal abstract.


The in vivo metabolism of chlorpromazine (CP) in schizophrenic patients is reviewed. Studies include: observation of CP in the excrement and the urine of animals and patients; metabolic intermediates of CP in animal and human bodies; metabolic intermediates of CP in the blood; and metabolic enzymes of CP. (54 references)


Similarities and differences between amphetamine psychosis, paranoid schizophrenia, and paranoid states are discussed. It is stressed that amphetamine psychosis appears to be a fruitful experimental model of paranoid schizophrenia or paranoid state. A variety of animal and human studies suggest that neurochemical mediation of certain behavioral effects of amphetamine in animals may reflect such mechanisms in human amphetamine psychosis. Specifically, locomotor stimulation appears attributable to central norepinephrine and stereotyped behavior to dopamine, while experiments with amphetamine isomers in man suggest a dopamine mediation of human amphetamine psychosis. Pharmacological and stereochemical evidence suggests that clinical efficacy of phenothiazine drugs in the treatment of schizophrenia may be related to blockage of dopamine receptors. Taken together, these findings provoke the speculation that specific and distinct effects of amphetamines on dopamine and norepinephrine neurons may combine to account for the major symptoms of amphetamine psychosis. (86 references)—Author abstract, modified.


The hypothesis in this study is that variability of attention, mood, and activity as characteristic of neurological and psychiatric disorders might be temporally associated with the deviations from normal frequency and voltage commonly recorded in the scalp electroencephalographic (EEG) results of such patients. Experimental and control subjects were given stimulus/response tasks. Results for the reaction time and remote spike analyses were as follows: Individuals with diagnosed schizophrenia and epilepsy demonstrated a wider range of reaction times and higher error rates. A distinct pattern was shown for scalp or subcortical spectra time locked to distant focal spike activity, compared to spectra triggered by a random control signal artificially generated between spikes. Recordings from subcortical electrodes have demonstrated spike activity related to disturbances in the mental state. In schizophrenic patients there is considerable variability in reaction time, particularly in the processing of relatively complex verbal information. When deviations of both EEG and consciousness are more severe, as during epileptic absence, there is an association between reaction time and abnormal discharges recorded in scalp or subcortical EEG's. Spectra preceding long latency or wrong responses to stimuli resemble the ramp configurations. The ramp pattern is consistent with the power spectrum from an epoch dominated by a single high-voltage transient, such as the EEG spike. (10 references)


The urinary excretion of catecholamines and their metabolites was studied longitudinally in a typical case of periodic catatonia. The patient has shown regularly repeated periods of catatonic stupor and remission for 18 years. Chemical determination and clinical observations were carried out for 4 years, covering 22 periods of stupor. Free norepinephrine (NE), epinephrine (E), and dopamine (DA) in 24-hour urine specimens were measured by fluorometric determination combined with thin-layer chromatography, and total normethanephrine (NMN), methanephrine (MN), vanillylmandelic acid (VMA), and homovanillic acid (HVA) were determined by paper chromatography. The patient was maintained on a vegetable-free liquid diet during the periods of study. The effects of enzyme inhibitors (monoamine oxidase inhibitor, Disulfiram), thyroid hormones,
reserpine, and lithium citrate were studied. The findings suggest that, in the catatonic phase, the patient possibly has an increased central noradrenergic activity, which may be associated with the clinical manifestations. However, the mechanism of overproduction or accumulation of NE in the central nervous system still remains obscure. (45 references)—Author abstract.


Studies of psychophysiologic responses of schizophrenics to drugs have involved cardiovascular measures (heart rate, blood pressure, and finger-pulse volume), electrical skin activity, digital temperature, pupillary response, muscle activity, and respiration. Drugs included phenothiazines and both sympathetic and parasympathetic agents. Effects of drugs were varied and complex and no simple conclusions are possible. Phenothiazines reduced generally elevated basal levels of psychophysiological activity of schizophrenics (except for heart rate) as well as their reactivity to stimuli. These changes were often accompanied by behavioral improvement, suggesting that schizophrenics can be characterized by excessive levels of arousal which are decreased by phenothiazines to more moderate levels. In contrast, Russian work indicated that the basal levels of schizophrenics are initially low and are generally elevated by drugs, including phenothiazines, with accompanying improvement in psychological functions. These diverse findings were interpreted as showing that the psychologi- cal functioning of schizophrenics is a nonmonotonic (inverted-U) function of psychophysiological arousal. A second hypothesis was proposed to account for nonphysiological (cognitive) deficits of schizophrenics, namely, that performance is a positive, monotonic function of attention. A two-process theoretical model involving attention and arousal processes was proposed to account for schizophrenic behavior. Several methodological questions prevented clear interpretation of many drug findings. One particular problem involved possible effects from homeostatic restraint mechanisms (law of initial values or LIV effect). A technique for removal of LIV effects is described. (185 references)—Author abstract, modified.


Peripheral plasma androgen levels have been studied in control subjects, and in acute and chronic institutionalized schizophrenic patients. The androgens determined included testosterone, dehydroandrosterone, and androstenedione. The schizophrenic groups did not show any significant difference from controls for plasma levels of testosterone and androstenedione. Both chronic schizophrenic groups have a significantly lower level of dehydroandrosterone. This change appears to be independent of age and institutionalization variables. Dehydroandrosterone is derived principally from the adrenal cortex, which suggests the possibility of reduced adrenal cortical functioning in chronic schizophrenia. (17 references)—Author abstract, modified.


Evidence for the importance of delta sleep is reviewed, and the hypothesis that marked deficits in these sleep stages are characteristic of chronic schizophrenics was tested. The sleep patterns of nine chronic schizophrenics were monitored for 8 consecutive nights by means of continuous all-night EEG eye- and chin-muscle recordings. The main finding was that all subjects showed dramatic and stable deficits in delta sleep stages 3 and 4. The role of factors other than chronic schizophrenia in producing this finding is discussed. (29 references)—Author abstract, modified.


Pneumoencephalographic findings in schizophrenia are described and compared with those of other diseases and normal findings. The results of the group of schizophrenics examined revealed dilatation of the ventricles, which is comparable to findings in diffuse cerebral atrophy. The differences appear to be purely quantitative. The actual changes in schizophrenia in pneumencephalograms are related to the duration of the disease and the severity of the defect, but no distinct areas in the brain can be associated with schizophrenia. In light of modern theories of schizophrenia, a truly organic basis must be found to explain the disease, one that leads to cerebral atrophy, or a metabolic disturbance, either extraneuronal or intraneuronal. Some of the theories of the etiology of schizophrenia refer to structural defects, not in the sense of inborn errors of metabolism, but due to damage encountered in early childhood. (16 references)

In a paper presented at the 11th Annual Meeting of the Association for the Psychophysiological Study of Sleep, the rapid eye movements (REM's) of seven pheno-thiazine-resistant, male chronic schizophrenic patients, free from all drugs for 3 weeks or longer, were studied for 6 nights. The mean total sleep was 289 minutes; non-REM, 232 minutes; delta sleep, 18 minutes; REM time, 56 minutes; REM percent, 20; the REM density (an estimate on a 0-8 scale of the total number of eye movements per minute of REM sleep) was 1.1. In 15 normal subjects, total sleep was 416 minutes; non-REM, 336 minutes; delta sleep, 43 minutes; REM time, 81 minutes; REM percent, 19; and REM density, 1.7. Of particular interest is the low REM density. Unlike the control group, the schizophrenics frequently had REM's during non-REM sleep (primarily stage 2). At times these REM's occurred as frequently as 2-3 per minute. Usually, they were accompanied by a change to a low-voltage, fast EEG and a drop in muscle potential (micro-REM) lasting several seconds. At other times, the REM's occurred in the midst of K-complexes and spindles.—Journal abstract, modified.


Oral administration of the serotonin precursor L-5-hydroxytryptophan with a peripheral decarboxylase inhibitor produced mild to moderate improvement in six of seven chronic undifferentiated schizophrenic patients who were resistant to phenothiazine treatment, as compared to an oral administration of a placebo. Two of four chronic paranoid schizophrenic patients who were resistant to phenothiazine treatment became worse with 5-hydroxytryptophan; one improved. It is presumed that these psychological changes were directly or indirectly produced from increases in brain serotonin. Indirect data from animals and humans indicate that there may be an abnormality in serotonin metabolism in some schizophrenics. (11 references) —Author abstract.


A study of catecholamines in a psychotic patient, who also manifested a form of tic compatible with Gilles de la Tourette's disease, is presented. Urinary amines were compared with those of a known case of this disease in a young woman. The urinary adrenaline in the present case was very low as that of vanillylmandelic acid (VMA). The dopamine was extremely low, whereas its major metabolite, homovanillic acid (HVA), was normal. In comparing the two cases, both total urinary amino acids were low; both had low dopamines and normal HVA's; the noradrenaline was not very low, and the metabolite of serotonin, 5-hydroxyindole-acetic-acid (SHIAA) was normal in both cases. The possible causes of the disequilibrium in catecholamines are discussed in relation to an excess of dopamine metabolism and its relationship to the Gilles de la Tourette's disease. (19 references)


Evidence and arguments are presented to support a thesis that central language deficits related to those found in children with developmental aphasia, but more severe, may be the necessary and sufficient cause of behavior which marks children as autistic and schizophrenic. Deficits which may cut across sensory modalities and may differ between individuals, but remain stable within, can be identified in both groups. The two groups also share difficulties such as sequencing problems and deficiencies related to meaning of words that are more subtle than echolalia and pronominal reversal. Language deficits, however, are not said to be the only ones, as other handicaps may account for some variability in clinical cases. Also presented are two case reports illustrating results of an experimental nine-word language used in the training and testing of psychotic children. (71 references)—Author abstract, modified.


A study of speech and language faults of schizophrenic children is presented and discussed in light of data from tape recordings of directed speech activities and non-
directed conversation. The sample comprised 25 schizophrenic children in residential treatment and 25 normal public school children matched for age, sex, race, and religious background. Appraised was the speech of each child with reference to presumptive norm in phonation (volume, pitch, voice quality), rhythm (rate, phrasing, fluency, stress, and intonation), articulation, communication of meaning and mood, and gestural manner and attitude. Although more schizophrenic than normal children showed specified speech faults, no single or specific clustering of faults uniquely characteristic of childhood schizophrenia was evident. Also, more schizophrenic children exhibited a wide variation and presence of antipodal phenomena, fluctuating from one extreme to the other in many voice and speech elements. (11 references) —Author abstract, modified.


A pilot study, designed to determine whether patients with a diagnosis of infantile autism excreted N,N-dimethyltryptamine, 5-methoxy-N,N-dimethyltryptamine and bufotenine, as do some adult chronic schizophrenic patients, is presented and discussed. Twenty-four-hour urinary collections from 12 children and adolescents, 10 boys and 2 girls, were made at their homes. Subsequently, 24-hour samples were also collected during 14 consecutive days from the six children who were possibly autistic and on controlled diet at the hospital. At home, samples of the normal controls and of two possibly autistic patients were negative for bufotenine. In the hospital, those of two of the six were positive. It is suggested that some patients with a diagnosis of early infantile autism excrete bufotenine, an ability they share with schizophrenic patients. (25 references) —Author abstract.


In this study of 25 schizophrenic boys and girls, five tasks derived from Piaget’s studies were used to evaluate the concept of number in children. The goal for this study was to find a method to place children mathematically, using developmental principles. The protocols derived from Piaget are given and are related to the five tasks, which are also detailed. One important finding was that there is a developmental lag with schizophrenic children, but the lag is not so great as with retardates. (17 references)


In an investigation of the effect of LSD-25 on childhood schizophrenic behavior and, in particular, of the consistency of drug responses in a single subject and over subjects, 50 µg LSD-25 were administered to 17 schizophrenic children aged 5-13; the dosage subsequently produced changes in affect which were mainly positive. However, seven of the children had one or more fear and panic responses. The responsiveness of the children to external events appeared to be reduced, and they spent considerable time intensely preoccupied with certain objects to the exclusion of other stimuli. Motor activity was considerably diminished in most of the children, and five were almost completely immobile during large segments of time while under the influence of the drug. None of the changes persisted longer than the experimental day. Although LSD-25 seems to have the capacity to alter the autistic barrier so characteristic of these children, the diminished responsiveness, variable affective response, and transiency of effect cast some doubt on its use as a therapeutic adjunct in the treatment of the disorder. Nevertheless, the results of this and other studies reviewed suggest several aspects of the drug effect that could bear further investigation. (5 references) —Author abstract, modified.

**diagnosis**


A study is made to discover the sensitivity of the Kahn Test of Symbol Arrangement (KTSA) in distinguishing a clearly diagnosed organic group from chronic schizophrenic and normal subjects and to ascertain the significance and extent of the test’s applicability in Indian conditions without changing the original stimulus objects. Twenty hospitalized male chronic schizophrenics, 20 male epileptic patients, and 20 male normal subjects, without any history of psychiatric illness, were administered the KTSA. The scoring pattern of symbol arrangement formulas differentiated chronic schizophrenic and epileptic patients from the normal group.
The overlapping between the chronic schizophrenic and the epileptic subjects' symbol pattern score was low, and the applicability of the KTSA with Indian populations appears promising. (11 references)


The interpersonal styles of paranoid and nonparanoid schizophrenics were investigated to determine whether the two groups could be differentiated on the basis of interpersonal variables. The study also attempted to determine whether the two types of subjects differed in level of premorbid adjustment and proceeded directly from a theoretical basis proposed by Kantor and Winder in 1959. Three measuring devices were used to measure the variables of hostility, lack of scruples, and defensiveness: the Inpatient Multidimensional Psychiatric Scale; the Interpersonal Style Inventory; and the Ullmann-Giovannoni Scale. The results provide partial confirmation for Kantor and Winder's theory. Paranoids were significantly more hostile and mistrustful as hypothesized, but not more unscrupulous or defensive. None of the original hypotheses concerning the interpersonal style of the nonparanoid group were verified. In terms of overall personality profile, it was found that the Interpersonal Style Inventory was a valid instrument for differentiating the two groups. In addition, paranoids had a higher level of premorbid adjustment, confirming other areas of the theory. When compared with normal subjects, both groups differed significantly on almost all 17 Interpersonal Style Inventory variables. Most significant was the fact that both of them were markedly lower in achieving and lacked scruples in relation to the normals.—Journal abstract, modified.


An Italian version of the Hoffer-Osmond Diagnostic Test, originally introduced at the Psychiatric Clinic of the University of Saskatoon in the form of a questionnaire designed to diagnose and quantify anomalies in perception and thinking of schizophrenic syndromes, is described and the results of its application to 237 patients are evaluated. The 145 items in the questionnaire were translated so as not to distort their original intent; six scales are used in the quantification which evaluate the perceptual, the paranoid, the depression, the ratio, and the short-form score. The 237 patients tested included normal subjects, neurotics, schizophrenics, brain-damaged individuals, and patients suffering from depression. The scores in the various groups were identical with those obtained by the authors of the test in groups of similar composition. (145 references)


A case-note study of 375 paranoid schizophrenic patients discharged from the Royal Edinburgh Hospital in the years 1966-68 is reported. By reviewing all the symptoms recorded for all admissions, it was attempted to ascertain whether the assignment to a particular subgroup as given in the case folder was justified. The data suggest that the overlap of symptoms is so great as to negate the value of any intragroup classification. A reclassification is attempted, using operational definitions of schizophrenia, schizophreniform psychoses, and paranoid psychoses: 41 subjects were reclassified to other; the schizophreniform group was enlarged by 2 subjects, the paranoid group by 40 subjects, and the schizophrenic group diminished from 232 to 149 subjects. (21 references)—Author abstract, modified.


Clinical criteria originally used to describe 525 patients with schizophrenia or affective disorders who were hospitalized from 25 to 35 years ago were compared with research diagnoses. Of patients originally diagnosed as having affective disorder, 25 percent were discarded from the research sample. Of patients originally diagnosed as schizophrenics, 63 percent were not included in the research sample, mainly because of acute onset or episodic course. A high degree of correlation between clinical and research criteria for affective disorders was found, but the criterion of agreement among experienced clinicians relatively poorly satisfies research criteria for schizophrenia. Very stringent research diagnostic criteria were used; but for 200 schizophrenics diagnosed systematically, there was chart agreement for 95 percent, and in 325 affective disorders diagnosed systematically, there was 93 percent agreement with...
original chart diagnoses made in 1935. (10 references)—Author abstract, modified.


The Missouri Division of Mental Health has standardized clinical observations on psychiatric patients. Information on demographic variables and mental status findings were used to determine ways clinicians describe and classify patients. To determine how clinicians separate patients into 10 subcategories of schizophrenia, 6,748 schizophrenic patients were studied. The most frequent and the most discriminating mental status items were determined for each of the 10 subcategories. It was found that clinicians classify schizophrenic patients according to the Diagnostic and Statistical Manual II (DSM II) rules and to concepts classically taught in psychiatric textbooks. The usefulness of the current DSM II classification and that of an alternative approach are discussed. (12 references)—Author abstract, modified.


A random sample of 91 first admissions to a Provincial Psychiatric Hospital were tested with the Hoffer-Osmond Diagnostic Test (HOD) and the Inpatient Multidimensional Psychiatric Scale (IMPS) to permit comparison of the tests’ ability to discriminate between various diagnostic groups, and to discriminate patients diagnosed as schizophrenic from all others in the sample. Both tests significantly discriminated between the diagnostic groupings, but the IMPS generally yielded more significant probabilities of difference. Discriminant analyses and a survey of mean score values suggested that the IMPS was tapping a wider variety of distinct symptom dimensions than the HOD. Canonical correlation indicated that the two tests reflect some similarities in dimensions of psychopathology. The results are discussed in terms of the relative values of the two tests for specific research purposes. (13 references)—Author abstract, modified.


A discussion of the role of Praecoxgefühl in diagnosing schizophrenia in aged patients is presented. Interviews were given to patients of various ages with various clinical symptoms and lengths of hospitalization. Praecoxgefühl was perceived in 1) 14 out of 23 patients with various mental illnesses who were hospitalized for more than 1 year; 2) 13 out of 18 schizophrenic patients who were hospitalized for more than 1 year; 3) 28 out of 46 patients with various mental illnesses who were hospitalized for more than 5 years; and 4) 27 out of 41 schizophrenic patients who were hospitalized for more than 5 years. Praecoxgefühl was observed in 10 out of 15 schizophrenic patients who were younger than 25 years of age, and in 2 out of 8 schizophrenic patients who were older than 60 years of age. (19 references)
association of schizophrenia with residence, educational status, or sex was found. (9 references)—Author abstract, modified.


An analysis of 250 students presenting with behavioral problems at a university student health service is described. Over half presented with depression and a further 19 percent with anxiety, while sexual problems and schizophrenia contributed 11 percent and 6 percent, respectively, to the total. Fifty-three percent had underlying personality traits which were disadvantageous to their well-being, the most common being a sensitive personality. The precipitating factors were, in hierarchical order: study, conflict with parents, emotional and sexual difficulties, and difficulty in interpersonal relations. Conflict about values not associated with emotional problems and financial difficulties leading directly to psychiatric illness were uncommon. Sixteen percent of students presented without any clear precipitants. Of those with sexual problems, homosexuality among men and frigidity among women were the most frequent. In only a minority of the former was the homosexual behavior fixed. Some reasons for these findings, their implications, and limitations are discussed. (6 references)—Author abstract, modified.

family


Bimodality, defined as attitudes, mental productions, or behaviors contradictory to each other and manifested by one person or by a family, was studied in relation to families of schizophrenic patients, families with psychopathology less severe, and families with only well children. These findings clear up some of the obscurities about conditions that are favorable for the development of serious mental disorder. The study evaluated what, if any, patterned transactions could be identified in families of schizophrenic children that differed from those of well children. The mode of communication that was pathogenic, bimodality, began to frame itself in the investigations of the individuals. Rorschach blots illustrate the concept. Four points of reference were used to judge the families and the effects on the child. Symptoms of traits antithetical to one another were discovered in the same family. Well families exhibited similar traits but seemed to recognize the psychological problems involved. The results indicate that the ultimate nutrient for schizophrenia in the individual is his society. What distinguishes the environments without psychopathology is what the persons within them do when faced with bimodality. (21 references)


A brief discussion of the relevance of environmental agents conducive to schizophrenic conditions is presented, with emphasis on the pathological influence of the family, which often appears to function as the main causal factor in determining such conditions. Together with the disease of the individual, and in connection with it, there is, first of all, a disarray of the whole family unit that can hardly be imputed to the difficulties of a single person but, rather, to the disturbed relations among family members. The patient is not the scapegoat of disturbed relations in the family unit; he is, rather, the outcome of a family where strong genetic disposition to mental pathology is at work. In such an unbalanced family unit, however, certain character types prevail—that is, the overprotective mother, the weak father, or vice versa. The relations between parents and patient are profoundly ambivalent and often very close to pathology. Thus, the mother’s affection acquires erotic modes of expression which elicit in the sick person abnormal and traumatic responses. In this situation it is difficult to attempt any kind of biological or psychological therapy without the active presence of the main family members. Therapy should be primarily directed toward the subject, but it should also include relatives in order to modify, whenever possible, the interpersonal conditions upon which the disorder itself developed, and to prepare the family to accept the sick person in new and different ways upon dismissal. Such therapeutic efforts are primarily intended to cope with the difficulties in readjusting the schizophrenic patient to social life; such difficulties are not only due to the patient’s lack of initiative, which is often the result of a schizophrenic process, but also to the lack of assistance by the family group, which resorts to a passive, noncommittal attitude that is by itself detrimental to the patient.—Author abstract, modified.

A study of psychogenic factors related to parent-child sex concordance in schizophrenia, which compared the incidence of psychosomatic disorders to the incidence of organic, nonpsychosomatic disorders in mothers of female schizophrenics, mothers of male schizophrenics, and mothers of nonschizophrenic offspring, is reported. The mothers of female schizophrenics had a significantly greater incidence of psychosomatic disorders, but no greater incidence of organic, nonpsychosomatic disorders than either of the other two groups of mothers. This finding appears to be quite consistent with earlier epidemiological findings of greater incidence of mother-daughter paired-sex concordance for schizophrenia and with sex role identification in psychological theories in schizophrenia. This finding may not be specific to schizophrenia, and research is indicated to determine whether it holds for mothers of daughters who have psychiatric disorders other than schizophrenia. (19 references)—Author abstract, modified.


Thirty schizophrenic patients and their 57 siblings were studied, with concentration usually devoted to the flagrantly ill member of the 30 families represented. A predominantly interview method was used to determine the validity of the hypothesis that some difference in the extent or kind of involvement with the family might be the mechanism through which schizophrenia occurs in one offspring and not another. Of particular interest was the evaluation of how deeply the sibling was entangled with his family of origin. It was found that the level of illness was associated with the degree of family entanglement; however, it appears that the percentage of these siblings at various levels of illness may not differ from proportions to be found among young persons in the general population. No correlation could be found between the rank order of health of the patient and that of siblings in the same family. The siblings did not fit a single pattern in personality, but fell into several clusters that were characterized by different survival styles within the family of origin. (23 references)—Author abstract, modified.


The essence of a theory of schizophrenic disorders, derived from studies of patients and the family settings in which they grew up, and from an understanding of the critical functions of language in human adaptation and of the family as an essential derivative of man's biological makeup, is presented. The studies were originally undertaken because schizophrenic patients were found always to emerge from seriously disturbed homes. The theory develops the method by which emotional and cognitive regressions, characteristic of schizophrenic disorders, derive from the faulty family settings and the egocentric distortions of the parents that impede and warp the patient's personality development in general and his cognitive development in particular. (37 references)—Author abstract, modified.


A study comparing the attitudes of family members of schizophrenic patients cared for in hospital and in home treatment service is presented. The patient was considered to be a burden at the time of the investigation by 4 percent of the families in the hospital group and by 26 percent in the home treatment group. It was possible to infer that, in both forms of care, the hardships endured by the families because of a sick family member had been eased by about the same degree. In both groups, the families were equally satisfied with the type and quality of care the patient was receiving, and the outcome gave the impression that, from the point of view of the relatives, home treatment seems to be as satisfying a method of treatment as hospital care. Unfavorable family attitudes toward the patients were found to be almost the same degree in both groups. The outcome does not, therefore, support the hypothesis that unfavorable attitudes of family members lead to the patient's being more readily admitted to the hospital or to his becoming chronically institutionalized. The study indicated that families are more tolerant, as a rule, toward a mentally ill female relative than toward a male relative. (9 references)


A systematic diagnostic review of the records of all twin pairs with a psychotic diagnosis in the Veteran Twin Registry was performed. A total of 274 pairs of twins (313 individuals) was found in which one or both were clearly schizophrenic, a frequency of 0.98 percent. The
The degree of resemblance between the twins, in terms of mental health, was evaluated by the degree to which some mental illness or had committed suicide. The mental anomalies satisfied the rigid criteria of the syndrome. The results of the major twin studies of schizophrenia are also reviewed, and the conclusion is drawn that both genetic and environmental factors are significant in the occurrence of schizophrenia. (18 references)—Journal abstract, modified.

A study was made of the relationship of schizoaffective psychosis to manic-depressive psychosis and schizophrenia. A systematic review of the claims files of all 15,909 veteran pairs from the National Academy of Sciences/National Research Council twin panel of 15,909 pairs, in which one or both twins had a psychotic diagnosis, revealed that the monozygotic pairwise concordance rate for schizoaffective disorder is more than two times higher than that of schizophrenia, but not significantly different from that of manic-depressive illness. Monozygotic twins concordant for schizoaffective disorder had affective symptomatology equal to that of manic-depressive twins and schizophrenic symptomatology equal to that of schizophrenic twins. For both twins in MZ pairs concordant for illness, schizoaffective psychosis had a mean age of onset earlier than that for both manic-depressive psychosis and schizophrenia. Seven of 21 (33 percent) MZ index schizoaffective twins committed suicide, as opposed to none of 18 manic-depressives and 3 of 100 index schizophrenic twins. The results are discussed in terms of a possible pathogenesis of schizoaffective disorder. (18 references)—Author abstract, modified.

The influence of environmental factors on the development of schizophrenia in identical twins was investigated in 395 pairs of same-sex twins, in which one or both had suffered some mental illness or had committed suicide. The degree of resemblance between the twins, in terms of mental health, was evaluated by the degree to which the mental anomalies satisfied the rigid criteria of the symptoms of schizophrenia. Since the genetic factors in identical twins are equal, the differences in the phenotype, such as the occurrence of schizophrenia, must develop due to environmental factors. The only difference at birth may occur in body weight; however, no correlation has been established between body weight and occurrence of schizophrenia in those twins where such data were available. Factors in the environment which precipitated the onset of schizophrenia include: the subsequent birth of a sibling, the menopause, disappointment in a love affair, and an unhappy marriage. In the latter two cases, the onset is slow, and it is difficult to determine whether the illness precipitated the emotional crisis or vice versa. Other stress situations may be involved. It is concluded that a number of factors in the environment are responsible for the precipitation of schizophrenia in a predisposed individual, but no one factor can be singled out in this connection. (10 references)

Some statistical and genetic arguments relating to the relative importance of biological and psychological influences in the etiology of schizophrenia and homosexuality are discussed. There is strong evidence that schizophrenia has some genetic basis, although it is difficult to explain why the polymorphism exists and appears to be stable in time; strong statistical evidence of environmental influences also exists. With regard to homosexuality, on a population-genetic basis, it is unlikely that it has a genetic origin; evidence for environmental influences is, however, overwhelming. Mothers of male homosexuals tend to be about 2.31 years older than the average for the general population, while their fathers are about 3.15 to 3.55 years older than average. The paternal age shift is primary and the maternal age shift secondary. In addition, paternal loss by death among homosexual males is slightly, but not significantly, higher than average; the paternal age shift is probably primary, with the paternal loss being secondary. Although these findings are reconcilable with either a biological (e.g., mutation in old sperm) or psychological (inadequate father image) etiology of homosexuality, the overall evidence strongly indicates a psychogenic explanation. (14 references)

A series of studies in schizophrenia, using several varieties of the twin study method, are reviewed, and five major conclusions and hypotheses drawn. The conclusions and hypotheses are: 1) There exists a genetic predisposition to schizophrenia which may, however, be nonspecific for this particular psychosis; 2) the genetic predisposition does not take the form of a single, major dominant gene; 3) the genetic predisposition may be expressed, in part, as an abnormality in one or both of two interrelated systems of biogenic amines, the catecholamines and the indolamines; 4) additional major pathogenic determinants are, however, nongenetic, and derive from historical and familial experiences, and nongenetic constitutional factors that reflect intrauterine experience; and 5) conceptual integration of the role of genetic and biochemical determinants and experiential determinants by the use of the weak ego boundary construct cannot be empirically validated. A modified twin study design, the co-twin comparison method, is described, with which these conclusions and hypotheses can be tested; and two additional major issues, specificity to schizophrenia and the antecedent-consequent question, are dealt with. A stress model of schizophrenia pathogenesis is presented, which attempts to integrate genetic, biochemical, and experiential variables. (36 references)—Author abstract, modified.


The genetic family investigation is one of the primary instruments for the nosological study of schizophrenialike psychoses. The morbidity-risk figures for schizophrenia of the siblings may be used as an index for the schizophrenogenic hereditary predisposition. As an example, the value of the genetic and statistical approach to the symbiotic psychoses is demonstrated. Conclusions for the concept of schizophrenialike psychoses are drawn. (41 references)—Journal abstract.


An international panel of seven diagnosticians from Japan, Sweden, the United Kingdom, and the United States blindly diagnosed the histories of the 114 twins in the Maudsley schizophrenic twin series. The middle-of-the-road consensual diagnosis of schizophrenia was easily reached. Besides being more reliable, it gave better monozygotic to dizygotic discrimination than attempts to apply broader or narrower diagnostic criteria. A similar standard applied to the other recent schizophrenic twin studies secured reasonable agreement, and the pooled monozygotic concordance rate from the studies was 46 percent, higher than sometimes reported. The study vindicates both the diagnosis of schizophrenia and its substantial heritability. (43 references)—Author abstract.


A family is described in which several members were affected with schizoaffective psychosis. The difference between this psychosis and schizophrenic and manic-depressive illness is discussed. The clinical picture is presented, and the genetic background is reviewed. It is pointed out that some cases of puerperal psychosis belong to this group of psychoses. A scheme of treatment for the schizoaffective psychosis is given. (19 references)—Author abstract, modified.


Blind assessment of relatives of 200 schizophrenic probands and relatives of 325 affective disorder probands indicates that these illnesses run in families. Suicide is more frequently seen in relatives of affective disorder probands. These findings may be construed as data in favor of the concept of two independent illnesses. (9 references)—Author abstract.

prognosis


Paranoid-nonparanoid status, premorbid adjustment, and chronicity in schizophrenic patients are examined. The independence of three descriptive dimensions, commonly used in the design of experimental research on schizophrenia, was investigated. The subjects were 258 male schizophrenic patients from three Boston area hospitals, two private and one public. Only paranoid status was found to be independent of the other two dimensions. Premorbid adjustment and chronicity of
A study of 136 chronic schizophrenic patients from four hospitals was designed to determine which family and environmental variables predict the social outcome of the illness. Three major hypotheses in regard to childhood behavior were found to be uniformly nonsignificant and unsuited as predictors of the social outcome of these patients on the basis of information from relative informants. Recent social events were far more powerfully associated with outcome than remote events. Number of times hospitalized and length of hospitalizations were not significant in predicting social outcome. Results emphasize the importance of including chronically ill schizophrenic patients in intensive treatment programs. (14 references)


Two types of schizophrenia are described and discussed: process and reactive schizophrenia. The hypothesis that reactive schizophrenia is not schizophrenia at all is supported from the literature. Of the quarter of a million persons diagnosed as schizophrenic in U.S. hospitals today, most of those who will get better are reactive schizophrenics, or actually not suffering from schizophrenia. Comparisons are drawn between the schizophrenics by physical appraisal, anxiety, affect, parental acceptance, ability, and abstract reasoning.


The second part of a discussion on the subclassification of schizophrenics based on their functional characteristics is presented, including the relationship between the schizophrenic subtypes and prognosis. Three tests were administered. In the first, schizophrenics were given 30 seconds to practice pressing a switch every 5 seconds, and then asked to press the switch every 4 seconds for 4 minutes; next they were verbally instructed to press the switch once every 5 seconds for 1 minute, and finally to press the switch every 5 minutes for 4 minutes. The results showed that schizophrenics can be divided into three types: A, B, and C. Type C schizophrenics are significantly different from types A and B, while types A and B are not definitely distinguished by the test. Type C subjects showed a great variation in the third test, in which they pressed the switch almost at random. The prognosis 3 years after the test is poorest for type C subjects, most of whom are still hospitalized. Type B has the best prognosis. (6 references)


Factor analyses of the Palo Alto Social Background Inventory (PASBI) and correlations of the factor scales and of L. Ullmann and J. Giovannoni's PASBI-derived Process-Reactive Scale with employment and readmission of 720 schizophrenics were reported. A principal-components Varimax factor analysis yielded 10 factors reflecting perceived degree of disability, interpersonal orientations, regularity of employment, extent of previous hospitalization, and demographic characteristics. The bulk of the explained variance of posthospital work was accounted for by Chronicity, Perception of Disability, and Marital Affiliation. The PASBI scales were not related to readmission. Work and readmission were only minimally (and negatively) related. Results are interpreted as supporting the utility of a self-administered historical inventory in making treatment decisions. (14 references)—Author abstract.


Twenty-eight good-prognosis and 25 poor-prognosis schizophrenics (differentiated on the basis of duration of illness and premorbid level of functioning) were compared for differences in symptomatology. The good-prognosis group was found to be more likely than the poor-prognosis group to have diagnosable mania or depression, visual hallucinations, perceptual disorders, and confusion, and was less likely to have affective blunting and a combination of special types of auditory
hallucinations and haptic hallucinations. Like previous reports, which have established that good-prognosis schizophrenia is closely related to the affective disorders by family history, this study demonstrated a close clinical relationship between good-prognosis schizophrenia and the affective disorders. (15 references)—Author abstract, modified.


Thirty-one patients with emotionally unstable character disorder were interviewed an average of 3.75 years after hospitalization. Although 18 predictor variables were correlated with outcome, no pattern of predictor variables distinguished good from poor outcome. Most patients were diagnosed as schizophrenic by the ward staff, but the usual relationships among predictor variables and outcome in schizophrenia were not seen with this sample. (6 references)—Author abstract, modified.


The first of two reports is made of an investigation of predictors, diagnostic criteria, and outcome characteristics in 111 psychiatric admissions. Most of the patients would be considered schizophrenic by many criteria. Evaluation of outcome characteristics of this cohort indicates that outcome dysfunction is best considered as a continuum. The different areas of outcome dysfunction—that is, work symptoms, social relations, and duration of nonhospitalization—seem to operate as open systems. All three areas are partly interrelated and affected by psychiatric disorder, but each area is also affected by variables more specific to it alone. Although several diagnostic and classification systems were evaluated, the difference in outcome among different diagnostic groups was less striking than is often expected. These results indicate that outcome is a complex phenomenon, and that the ability of a diagnosis to predict a specific outcome has often been overstated. (36 references)—Author abstract, modified.

treatment


Impaired insight is a prominent feature of the schizophrenic syndrome, and failure to take major tranquilizers by the oral route has resulted in many relapses. The introduction of the long-acting phenothiazine fluphenazine enanthate (Moditen Enanthate) has greatly facilitated the control of the florid symptoms of this disorder by transferring most of the responsibility for phenothiazine administration from the patients to the clinic or family physician. The educational maturing process, to enable these patients to cope with the challenges of adult life and the reality of their condition, can be handled more effectively through a therapeutic team approach, operating within the framework of a structured program, than by the traditional psychiatrist-patient relationship alone. (10 references)—Author abstract.


Recent studies in videotape self-confrontation, analogous to previous research with primarily nonverbal techniques, suggested an ideal treatment vehicle for modifying disturbed ego and thought processes in schizophrenics. Posttest data on the Rorschach Prognostic Rating Scale indicated no change in the schizophrenic group exposed to videotape self-confrontation when compared to a nonexposed schizophrenic group and a normal group exposed to self-confrontation. Normal control subjects unexpectedly did change on two of three dependent variable measures. The role of defense in the self-confrontation experience was discussed in relation to the need for more definitive research with videotape applications. (40 references)—Author abstract.


Acutely psychotic schizophrenics were randomly assigned to one of three groups: an experimental group of patients home on drugs and public health nursing care, and two control groups—one receiving placebo and public health nursing home care, the other receiving State hospital care. For a 30-month period it was demonstrated that over three-quarters of the experimental group could be successfully maintained at home.
Five years later, gradual erosion of the original significant differences occurred on the usual clinic and aftercare services, so that eventually no differences in social or psychological functioning could be found. This indicates a need for the structuring of community mental health services on an intensive aggressive basis if we are to do anything more than transfer custodial care to the community. (3 references)—Author abstract.


Some significant changes in intensive psychoanalytically oriented psychotherapy and its context since the 1960's are discussed, with special reference to schizophrenic patients. Today a mere handful of schizophrenic people receive intensive psychotherapy. There are but a few training centers that provide training for such treatment and actually encourage it. More modest goals of symptom relief are applied to 99 percent of the severely disturbed patients. Less than 1 percent are exposed to an opportunity to achieve characterological change through intensive, psychoanalytically oriented psychotherapy. Psychotherapy can be greatly facilitated by other therapeutic approaches; a judicious combination of therapeutic approaches leads to a depth of understanding and insight productive of characterological change that protects against the subsequent recurrence of psychosis. The guilt-oriented model of competing therapies has no place in the total treatment of severely disturbed people. Those who work with schizophrenics can use any help obtainable from other methods of treatment. The expected phases of psychotherapy with a severely schizophrenic person are described. The conclusion is that the concept of intensive psychotherapy as a unique human encounter, the therapeutic value of bringing into awareness forgotten and forbidden thoughts, the recognition of physiological components, and the reliance upon milieu and family are all part of the therapeutic approach. (7 references)—Author abstract.


Eight foster-home-care groups for long-stay psychiatric patients were studied for 1 year, during which time 64 men (mainly with chronic schizophrenia) lived in the homes and 13 of the men departed. Compatibility was measured for each group between each man and his group by the Fundamental Interpersonal Relations Orientation-Behavior (FIRO-B) Test. Compatibility in the amount of control wanted over others correlated with low turnover rates across houses. The individuals who left were less compatible with their groups in the area of affection. The findings are discussed in relation to other studies of group living and structure. Compatibility should be carefully considered when attempting to form stable posthospital-care groups, particularly with respect to attitude about control. (9 references)—Author abstract.


Sedac electrotherapy used in the treatment of 106 patients suffering from paranoid reactions and depression is reported. Disabling phobic symptoms may be successfully treated with intensive fronto-occipital arms-to-occiput Sedac stimulation. The Sedac modality was successful in the treatment of involutional reactions, including those with paranoid symptoms. Psychotic depressions and paranoid reactions of the schizophrenic type showed actual or impending relapse with the Sedac modality and required the convulsive Sedac modification. It is recommended that four or five daily treatments with the Sedac modality be used. If no improvement is noted, the convulsive-Sedac modification should be tried. (3 references)—Author abstract, modified.


A panel discussion delivered at the 13th annual meeting of the G.W.A.N. Psychiatric Research Society is presented, in which results are reported from a comparative psychiatric study which evaluated the effects of milieu, group psychotherapy, and occupational therapy on chronic schizophrenic female patients. These patients had been hospitalized for a mean period of 17 years and 8 months. Two of the factors, milieu and occupational therapy, did not significantly affect the patients' psychiatric condition as assessed by the three rating scales. The third factor, group psychotherapy, did significantly reduce the degree of anxiety but did not modify the mental state or the behavior. Based on statistical analyses of a fourth factor, repetition of the experiment, some elements deriving from the milieu appear to have been responsible for the higher degree of anxiety in the first group of patients. (9 references)—Author abstract, modified.
In the study reported, 120 schizophrenic patients, all first admissions to four different psychiatric units (two mental hospitals and two general hospital psychiatric units), were followed for 4 years to assess their progress while their cases were managed largely extramurally and the patients lived at home. They were found to spend little time in the hospital, but only a few of them remained symptom free throughout the followup period. In spite of that, a good many were able to work for a major part of the 4 years. The effect the patient has on the household to which he or she belongs is considerable in terms of loss of earnings, separation from children, frequent disturbing behavior, and so on (objective burden). Nevertheless, many families seem to be able to contain this without complaining unduly (subjective burden). The burden appears to be easier to bear if the psychiatric services are part of a general hospital rather than based on a mental hospital.—Author abstract, modified.

The importance of extraprofessional interests in the rehabilitation of schizophrenics was studied in 96 schizophrenic patients, 40 of whom had fallen ill a short time before, and 56 of whom had been ill for more than 5 years. All patients of the new group had worked or studied prior to hospitalization; of the patients with a 5-year duration of illness, 9 were working and 37 were not. In the first group, 27 of the individuals examined were engaged in some activity outside of their professional work, 10 patients showed only poor activity (radio, newspapers), and 3 showed none. The corresponding figures in the second group were 24, 11, and 21. Comparison of these figures indicates that a process of 5 years' duration is usually followed by a decrease not only of the ability for work but also of extraprofessional activity. The degree of that decrease does not depend on factors such as age at onset of the psychosis or educational level. It is important that many patients keep up some of their interests which, although impoverished, can still serve as a measure of the degree of personality preservation, and should perhaps more often be availed of in attempts at rehabilitation. (12 references)—Journal abstract.

Thirty-six schizophrenic patients were randomly assigned to three treatment groups in a comparative investigation of psychotherapy alone, psychotherapy with medication (phenothiazines), and medication alone. All patients were examined before treatment began and after 6, 12, and 20 months (end of treatment) by outside evaluators using a battery of tests and interviews. It was shown that psychotherapy produces significantly greater patient change than medication and is particularly effective in changing the thought disorder. It is also necessary for the therapist to be experienced, benign, and to believe in the treatment he is administering. Medication is of short-term benefit when compared to no treatment at all. These findings are concordant with the experiences of many psychotherapists but are strikingly incongruent with much of the research literature. (25 references)

The author describes the treatment program of the Kusakabe Mental Hospital where most of the 49 schizophrenic patients receiving psychotherapy are chronic patients exhibiting violent actions and behavior problems. Some of the patients have strong autistic tendencies and are thus unable to communicate with others or benefit from psychotherapy. Twenty-five of the patients are treated in group therapy, and the remainder receive individual psychoanalysis. Other problems discussed are: lack of verbal communication due to the local culture of the district where verbalization of internal feelings is not encouraged; lack of reliability in the verbal expressions used by schizophrenics since their eloquence, or silence, does not correspond to the degree of adjustment; lack of cooperation between the psychoanalysts, and, finally, lack of good relationships between the patients and their families.

Fifty patients treated in a rural day center were...
compared with 56 patients who, although considered suitable for day-center treatment, were ineligible for admission because of arbitrarily designated catchment area boundaries and thus were treated in a psychiatric hospital. Patients were evaluated initially and just prior to release in standard behavioral measures by personnel not involved in their treatment. Results indicated full-time hospitalization to be more effective than day treatment in reducing excitement, conceptual disorganization, anxious introjectiveness, impaired function, disorganized hyperactivity, paranoia, and discomfort. With the exception of excitement and disorganized hyperactivity, these symptoms were significantly reduced in both treatment groups. MMPI K, considered a measure of social recovery, increased more in day patients than in full-time patients. These findings were largely accounted for by additional treatment effects in the schizophrenic subsample (day center, N = 22; hospital, N = 36); there were no significant outcome differences between nonpsychotic treatment groups. Additionally, self-regard increased more in hospitalized schizophrenics than in their day-center counterparts, and anxious depression was alleviated to a greater extent in the former than in the latter. Results are interpreted in the following terms: 1) potential benefits, particularly for schizophrenic patients, of the protection from family and community pressures afforded by full-time hospitalization; 2) despite overall equivalence of medication in hospital and day center, the possible confounding of treatment comparisons with drug effects in symptoms related to ward management; and 3) probable adverse effects of the location of the day center on State hospital grounds and of transportation of day patients by hospital-type bus. (33 references)—Author abstract.


A model for evaluating the psychological treatment of schizophrenia is presented with an in-progress study offered as illustration. After an outline of a theoretical position on the conditions designated as schizophrenia, six major categories of criteria for research on psychological interventions are set forth: theory and technique, patient characteristics, therapist characteristics, process, context, and outcome. The criteria are examined separately in some detail. The 5-year pilot project described therein tests the developmental crisis orientation to an initial episode of schizophrenia. Ignoring the medical model based on disease, deficit, and pathology (which has dictated pessimistic expectations about schizophrenia), the philosophy suggests that both developmental theory and positive growth through learning are possible. (23 references)


New programs for the psychosocial treatment of schizophrenics, suggested as a means of lowering the recidivism rate, include working in task-oriented groups, living in halfway houses, adoption by foster families, and living in a psychotherapeutic community. Although the majority of schizophrenic patients are discharged from hospital care within a year of admission, the recidivism rate is 50 percent, and only 20 to 30 percent of the discharged patients are gainfully employed. The following criteria for gathering data on the results of nonsomatic treatment of schizophrenics are suggested: 1) Data should reflect the nature of the therapeutic process being investigated; 2) subgroups of respondents should be identified; 3) drugs should be administered sequentially or as adjuncts to psychotherapy; 4) the investigator should work with recently hospitalized patients; and 5) schizophrenics should be defined by an arbitrary set of diagnostic criteria. A preventive program of developmental crisis therapy is based on the idea that the schizophrenic's first "break" is a crisis in development, occurring in the context of a particular social situation. A shift from State mental hospitals to community-based mental health facilities is predicted. (6 references)


The relative effectiveness of group and individual therapy for schizophrenic aftercare patients was investigated in a study of 100 patients. Subjects, who were randomly assigned to group or to individual psychotherapy, were newly discharged from a State mental hospital. The patients in each treatment category were initially equivalent on measures of illness severity and on prognostic indices. Outcome after 12 and 24 months of treatment, based on social effectiveness and psychiatric ratings, was significantly better for group therapy, but rehospitalization rates did not differ significantly. Analysis of therapist variables failed to account for the differences in outcome. Thus, in this population, the type of treatment was able to influence the outcome. (26 references)—Author abstract, modified.

In order to increase the possibility of patient discharge from a chronic psychiatric ward, a group behavior modification method was used with members of a female ward, most of whom were schizophrenic. A group consisted of two staff members, a psychologist intern, a nurse, and 5-10 patients per session. Of the 20 patients who completed their group activities, 16 graduated and were discharged or were awaiting discharge. The group setting provided a well-structured method by means of which patients could leave the hospital. Each patient had a specific task to perform each week and could assess his progress within a four-step framework. Group members were frequently rewarded for their progress by the attention and comments of others. Since members progressed at their own rate, it was possible for some to model their behavior on the behavior of patients who were at a more advanced state. Discharge depended upon many factors other than treatment, however, so that comparison of outcomes was difficult. (7 references)


A group of male chronic schizophrenics hospitalized for over 2 years was compared with a similar group attending a day hospital in respect of severity of handicaps and social circumstances. Inpatients were significantly more handicapped on all the measures used, and it was concluded that severity of handicaps was the main reason for the failure to discharge them from hospital. The implications for the planning of services for the chronic psychiatric patient are discussed. (10 references)—Author abstract.


The use of operant conditioning to strengthen the efforts of chronic schizophrenics to become aware of people in their ward milieu was evaluated. Three ward groups of male subjects, not significantly different on age, education, or months of hospitalization, were assigned randomly to one of three experimental conditions: 1) control; 2) praise reinforcement; 3) praise and money reinforcement. Over a 10-week period, groups 2 and 3 had weekly picture-identification sessions in which their efforts to identify photographs of people on the ward were reinforced. Tests of name recall and the 30-item Nurses Observation Scale for Inpatient Evaluation (NOSIE) were administered before and after the experiment. Results showed that praise and money reinforcement alone effectively increased interpersonal awareness which, in turn, was associated with improved ward behavior. (4 references)—Author abstract, modified.


A preoccupation hypothesis of schizophrenic deficit was proposed, and a psychomotor approach to treatment (simulated work therapy) was tested. Results indicated that the treatment, through intensive interference with preoccupation, increased 12 chronic schizophrenics' responsiveness to hospital routines and reduced their irritability. (3 references)—Author abstract, modified.


The therapeutic efficacy of group therapy stressing interpretive procedures intended to bring about client insight was compared experimentally with a form of group therapy experience encouraging client-to-client interaction without the intentional development of insight. The subjects were 24 male, hospitalized, psychiatric patients (20 diagnosed schizophrenic) who were randomly assigned to four groups; the groups in turn were randomized as to treatment conditions. They were assessed on behavioral, psychometric, and self-ratings before and after their therapy experience. Although there were no statistically significant differences between the experimental conditions on any of the outcome measures, the insight and interaction group demonstrated more consistent indications of improvement than the control group, the interaction group, and the insight group on the 21 measures assumed to assess personal functioning. None of the other group comparisons was statistically significant. (16 references)—Author abstract, modified.

Office treatment of acute and chronic schizophrenics indicates that the Horney culture-based, growth-oriented, holistic-dynamic psychoanalytic theory is very effective; however, there are differing opinions about its long-term effectiveness. The results of office treatment of ambulatory psychotics seem to be superior to those of inpatient hospital therapy. The effects of several different methods of treatment—including drugs alone, psychotherapy alone, drugs plus psychotherapy, electroconvulsive shock, and milieu therapy—were studied in a large group of patients. After about 2 years of treatment, it was concluded that drug therapy alone gave about the same results as drugs with psychotherapy, and both were superior to individual interpretation-insight therapy. The schizophrenic process can be divided into three parts: prepsychotic development, the psychosis itself, and the reversal of psychosis. The technique parameters of the holistic-dynamic approach are varied according to the needs of the patient. The seated position, facing the analyst, often seems preferable to that of the couch for most psychotic patients. Flexibility in determining the frequency of sessions is important. Free association as an analytic rule is usually less feasible and of less value for the schizophrenic than for the neurotic. Drug therapy should be used only when indicated, depending on each patient's personality and condition. A final technique parameter is the therapeutic use of contact with other persons (group, family, milieu) along with analytic therapy. The establishment of a viable relationship with the psychotic is usually the first and often the most difficult requirement of the analysis. The unconscious thematic material from free associations has to be interpreted into conscious, cognitive awareness. Some special techniques that are employed include childhood recall, control of anxiety, and the use of dreams. (49 references)


The author cites points of agreement and disagreement with Dr. Rubins' article, "A Holistic (Horney) Approach to the Schizophrenias," in which Rubins developed a coherent and consistent theory and treatment of the schizophrenias by using the theory of neurosis as a foundation stone. He recognized that organic and biological factors contribute to the etiology of the schizophrenias through the process of maturation. To the schizophrenic, physical perceptions are not always the same. Dr. Rubins, in his emphasis on the need for sameness, recognized this aspect. Milieu therapy is a way of emphasizing those aspects of patient health by confronting him with the reality of his behavior; analytically group-oriented therapy is designed to bring out and exchange feelings with others, and two individual psychoanalytic sessions per week consolidate the emotions. The emphasis on the establishment and maintenance of a therapeutic alliance cannot be overstated, and it is also necessary that the patient be given permission to express his anger and rage. Analytic views on neurotics also are that the total elimination of anxiety should not be a goal. (1 reference)


A program of treatment or supervision of therapy of 12 schizophrenic patients in the Psychological Services Center of the Psychology Department at Bowling Green State University (Ohio) is described. The treatment techniques that were found to be useful in dealing with the patients were based upon the single conceptual premise that the schizophrenic patient lacks adequate contact with consensual reality, a concept which is anchored in a number of more observable psychological deficits. The patients received psychotherapy, adhered to certain behavior guidelines, and seldom needed drugs or hospitalization as a part of their treatment. Available followup data showed that important changes in life circumstances had taken place in most cases. It is stressed that evaluation of the techniques employed at the Center did not focus in a primary way on psycho-dynamics, that no attempt was made to designate the relative worth of various techniques, and that these techniques were specifically geared to schizophrenic college students. (4 references)


Therapeutic activities for schizophrenics comprising the communication-centered group are discussed. The activities include improvisation, role playing, concentration activities, object focus, mirroring, individual pantomime, couple pantomime, group pantomime, and gibberish. The use of the activities with schizophrenic clients is described. It is concluded that an understanding of how language dissolves in pathological cases will promote a better understanding of the interrelationship between language and thought in so-called normal persons. (12 references)

A 5-day vacation in Majorca for 17 long-term psychiatric patients and 2 nurses is described. The group consisted of 14 schizophrenics, 2 manic-depressives and 1 sub-normal, some of whom had been in the hospital for up to 40 years. The age group ranged from 25 to 67 years. Each patient paid his own way at a cost of £20.50 per person. The patients were able to cope with the confusion of the airport; they adapted to jet flying, to a continental hotel, and to strange food and currency with remarkable ease.


Socioenvironmental treatment, systematic desensitization, and relaxation training were compared for effectiveness in inducing assertive behavior and decreasing self-report anxiety in chronic schizophrenics. The expectation was that socioenvironmental treatment would be more effective with older male schizophrenics and systematic desensitization and relaxation training with younger male schizophrenics in generating assertive relaxation. It was further anticipated that systematic desensitization and relaxation training would be generally superior in reducing anxiety. Results with 33 older and 30 younger patients confirm the expectancy for older patients with respect to socioenvironmental treatment and assertive behavior. There were no other differential treatment effects, although all conditions did generate a decrease in anxiety. (13 references)—Author abstract.


The Dingleton Hospital rehabilitation program for schizophrenic and depressed patients consists of three phases. An intensive care unit for three schizophrenic patients has been phased out as these patients progressed to another group. Ward group (1B) patients have been diagnosed as schizophrenic or depressive and have been hospitalized from 4 to 17 years. In 1B, the work program includes an incentive bonus scheme. Time is spent on improving social skills. In the Huntlyburn group (1A), for patients who have been diagnosed as schizophrenic, depressive, or suffering personality disorders, the treatment emphasis is on group psychotherapy. Two hostels, with another assured, provide halfway houses for those patients who have obtained full-time employment. The units all function separately and simultaneously. Patients can be assigned into any of these groups via an interward transfer or from any of the rehabilitation groups.


The effects of feedback and token reinforcement on the modification of delusional verbal behavior in chronic paranoid schizophrenic patients were investigated. The effects of feedback were effective about half the time in reducing percentage of delusional talk, but in at least three cases adverse reactions were produced. Token reinforcement, however, showed more consistency and reduced the percentage of delusional verbal behavior in seven of the nine subjects exposed to this procedure. The effects of both feedback and token reinforcement were quite specific to the environment in which they were applied and showed little generalization to other situations. It would appear that using token reinforcement can reduce the percentage delusional speech of chronic paranoid schizophrenics. (13 references)—Author abstract, modified.

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