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Modern Concepts of Schizophrenia

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MODERN CONCEPTS OF SCHIZOPHRENIA

Twas brillig, and the slithy toves
  Did gyre and gimble in the wabe:
All mimsy were the borogroves
  And the mome raths outgrabe.[1]

Schizophrenia today enjoys a greater degree of public and professional interest than any other of the behavior disorders whose care and treatment usually require institutionalization.

Schizophrenia has been defined by the American Psychiatric Association as "a severe emotional disorder of psychotic depth characteristically marked by a retreat from reality with delusion formations, hallucinations, emotional disharmony and regressive behavior."

Although Schizophrenia accounts for about nineteen per cent of first admissions to psychiatric hospitals, schizophrenic patients make up approximately fifty per cent of the hospital population. The onset is usually between the ages of fifteen and forty-five years, and both sexes are affected to a similar degree. However, male first admission rates tend to reach a maximum before the age of thirty years, whereas maximum rates for females are found some five years later. Rates for the single and the divorced are both much higher than those for married persons, but are somewhat higher among married women than among married men. Roughly two-thirds of male first admissions and readmissions are single, whereas roughly two-thirds of the females are or have been married.

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[1] Lewis Carroll, Through the Looking Glass and What Alice Found There (Charles Lutwidge Dodgson, 1832-1898).

Relatively high first admission rates have also been found among Negroes, among those of limited education , low socio-economic and occupational status, and in central urban areas characterized by social disorganization.[2]

The frequency of schizophrenia in brothers and sisters of schizophrenics is generally accepted as about fifteen per cent, but only a fraction of these will have been admitted to mental hospitals by the time of the patient's own admission.[3] The frequency of schizophrenia in the parents of schizophrenics is generally taken to be somewhere between five and ten per cent. The frequency of admissions to mental hospitals tends to be much higher among mothers than fathers, whereas the father is more susceptible to suicide or to becoming addicted to alcohol.

There is a tendency for both parents to be somewhat older than the majority of the parents in the community. In parents of limited education the tendency is for the father to be younger than the mother or at least ten years older.[4] There also appears to be an increased frequency of parental loss by death or separation during childhood, particularly the death of the mother followed by permanent separation from the father.[5]

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[2]Ian Gregory, Psychiatry (Philadelphia and London: W. B. Saunders Company, 1961), pp. 366-367.

[3]Abram Hoffer, M. D., and Humphry Osmond, M. R. C. S., How To Live With Schizophrenia (New Hyde Park,, New York: University Books, 1966), p. 15.

[4]op. cit. Gregory, pp. 367-369.

[5]Norman Cameron, M. D., Ph.D., The Psychology of Behavior Disorders (Cambridge: Houghton Mifflin Company, 1947), p. 446.

The idea of schizophrenia being inherited is very controversial. Many studies have been made of identical twins in the United States and in Europe. These studies reveal that if one member of a set of identical twins becomes schizophrenic, the other has an eighty-five per cent chance of becoming schizophrenic, even though the twins may be separated at birth and raised in different homes by different parents. In sharp contrast, the agreement drops among fraternal twins to about fifteen per cent which is the level of brothers and sisters who are not twins. "It is thus quite clear that schizophrenia can be determined by one's genes, but there is no simple or direct inheritance, as for eye color."[7]

According to the belief that there is a tendency for schizophrenia to be inherited, one-sixth of the children who have a schizophrenic mother or father will have enough genes to make them schizophrenic. That is, out of one hundred children who each have one schizophrenic parent, seventeen will have schizophrenia. If both parents are schizophrenic, the proportion is increased to sixty out of one hundred.[8]

In general, the earlier the disease strikes the more severely it affects the body. If children become ill before their sensory organs reach full functional muturity, they may never develop normally. The organs themselves may be physically healthy, but their function and coordination may be distorted. The patient is listless and fatigued. The patient usually feels tired in the morning

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[6]Hoffer, op. cit., p. 14.

[7]Ibid., p. 15.

[8]Ibid., p. 14.

after sleep, but becomes progressively more tired as the day progresses. Toward evening the person often becomes more psychotic. Both men and women tend to suffer a decrease in sex interest. Schizophrenic men occasionally become confused in their sex identity, possibly due to bizarre feelings.

> There are a number of tests which show that schizophrenic body fluids differ from those of normal people and those with other psychiatric illnesses. Schizophrenics as a result have desirable physical attributes which non-schizophrenics may well envy.[9]

Schizophrenics are often very attractive physically. They tend to age and lose their hair color more slowly and generally appear very youthful. They can take large amounts of histamines which makes them resistant to allergies. Schizophrenics suffer burns, sever injuries, and heart attacks without abnormal pain.[10]

There is one important unchanging characteristic of the disease and that is alteration in personality. Whenever there is a change in character, without an accompanying clear change in the environment and in the absence of physical illness, one may suspect schizophrenia. Frequently the patient seems preoccupied and dreamy. He manifests little concern about the realities of his life situation. The patient no longer trusts or confides in anyone. The schizophrenic may become ill at ease, restless, and wonder what interpretations others are putting on his behavior. The patient often resists conventionality. Frequently he becomes neglectful of personal care and

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[9]Hoffer, op. cit., p. 18.

[10]Hoffer, op. cit., pp. 18-19.

cleanliness. The patient may feel that something wrong or unusual is going on in his environment. Mysterious meanings are discovered until finally misinterpretations and suspicions may cause him to move from place to place. Emotional expression is unrelated to reality. At times experiences and ideas that should evoke a certain emotional response will produce its opposite. The patient, for example, may with a silly laugh speak of the death of his beloved mother.

Dr. Andrew McGhie and Dr. James Chapman in England collected descriptions from various schizophrenic patients on how the disease had affected them, and they found that disturbances in areas of perception and attention were primary. One patient said the following.

> I do something like going for a drink of water. I have to go over each detail. Find cup, walk over, turn tap, fill cup, turn tap off, drink it. I keep building up a picture. I have to change the picture each time. I have to make the old picture move. I can't concentrate. I can't hold things. Something else comes in. Various things. It's easier if I stay still.[11]

Visual changes are one of the many perceptional changes that occur in schizophrenia. Changes in color, changes in form, misidentification, changes in far vision perspective, and illusions and hallucinations often result in bizarre thinking and behavior.

Colors may become very brilliant or, more often, lose their brilliance. Sometimes everything becomes a monotonous gray. It is not understood whether the schizophrenic sees all colors, and has lost his normal

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[11]Hoffer, op. cit., p. 26.

emotional reaction to them, or whether he sees all colors the same. Usually the patient does not realize this color change and how his environment is different.

When changes in form occur, objects remain recognizable but look different. Because objects have a new, unexpected quality, they are often seen as having three-dimensional quality, while three-dimensional objects appear flat. Angles may become distorted. Frequently objects develop life-like qualities and pulsate, as though they were breathing.

The slightest change in a face is enough to make it seem strange or different, resulting in misidentification. One patient said people's faces became triangular or square, their heads got larger or smaller, and sometimes one shoulder went up and the other went down. Because of this, he was unable to look at people very long. One male patient lost his ability to tell one face from another. Since all faces seemed alike to him, he believed he was being followed.

Schizophrenics often lose the ability to orient themselves. Patients may become insecure riding in a car because passing cars may seem as if they are coming too closely. A common problem is the ability to judge whether people are looking directly at them or not. One of the earliest symptoms of schizophrenia is the inability to lose the feeling of being watched.

Illusions and hallucinations are not imagined by schizophrenic patients. Because something has altered the way they perceive things, they misinterpret what they are looking at. An extended hand of a friend may momentarily look like a club.

Very few schizophrenics are free from auditory changes. Sounds may become louder, or not as loud.

Auditory hallucinations occur after schizophrenia is well established. They follow this cycle. Patients become aware of their own thoughts. They hear them in their head. They hear them as if outside their head. They hear voices. There is no way of predicting what the patient will hear. They may hear voices giving orders, conversations with God, music, noises, or, more frequently, sex comments.[12]

The sense of taste and smell of schizophrenics are often altered. Patients may become more or less sensitive to odors. New tastes may develop, leading patients to think someone has poisoned their food.

Changes in the sense of touch are less frequent than any other of the senses. Usually schizophrenics become less sensitive to pain. Generally there are no complications with the sense of touch unless bizarre sensations, like the feeling of worms crawling under the skin, occur.

In the American society being able to perceive time is an invaluable ability. Yet schizophrenics are continally living with a distorted time sense. Time may appear to pass very slowly or very quickly. Often for schizophrenics time stops altogether. A paitent may sit down for hours and think only a few minutes have passed. Changes in time may be of short or long duration and one may follow the other.

Possibly, two of the most unfortunate changes in schizophrenic patients are the distortion of thought processes and the changes in thought content. Often there are no ideas whatever; the mind is blank. The

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[12]Hoffer, op. cit., p. 32.

process of thinking may be slowed down. This condition occurs in patients who are severely depressed. Thought processes may be so disturbed that one thought is followed by another which has no direct connection with it. Memory and recall may become so disturbed that clear thinking becomes impossible. Schizophrenics become unable to judge whether his observations are true or not.

Since the patient cannot control his ideas or thoughts or perceive normally, his speech is disturbed. Although the speech of schizophrenics may appear bizarre to normal people, they are actually responding to information received through their senses. Thus instead of having a language of their own, they associate their own associations to the words given them.[13]

Generally, there are four types of schizophrenia. They are simple schizophrenia, hebephrenic, catatonic, and paranoid. The types are derived from reaction types.

The most marked disturbances of the simple type are of emotion, interest, and activity. If hallucinations occur they are rare while delusions never play an important role.[14] Occasionally there appears to be regression or delusions of reference.[15] The disorder is usually gradual in its onset, and the significance of personality change is not understood by the patient's friends. In adolescence a youth who has perphaps shown much promise begins to lose interest in school or his occupation, and becomes moody and indolent.[16] His goals are no longer realistic.

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[13]Gregory, op. cit., p. 364.

[14]Arthur P. Noyes, M. D., Modern Clinical Psychiatry (Philadelphia and London: W. B. Saunders Company, 1954), p.380.

[15]Raleigh M. Drake, Ph.D., Abnormal Psychology (Ames, Iowa: Littlefield, Aadams and Company, 1954), p.98.

[16]Noyes, loc. cit.

Shallowness of emotions, indifference, and absence of will or drive are prominent features. Appreciation of moral values is lost. Most of the simple type are not found in institutions but become tramps, prostitutes, delinquents, and the persistently unemployed.[17]

The onset of the hebephrenic type is insidious and usually begins in early adolescence. Behavior is silly and absurd. There may be laughter, crying, irritability, sarcasm, or anger outbursts for no apparent reason. Hallucinations are common and include bizarre and childish ideas rather than systematized beliefs.[18] Speech is incoherent, while mannerisms are frequent. Regressive features are prominent. The patient often wets the bed or eats in an unmannerly fashion. The hebephrenic patient gradually becomes introverted and withdrawn.[19]

The catatonic type is characterized by phases of stupor or excitement. There may be alternation between little or no movement to an explosive overactivity. The most frequent age of appearance is between fifteen and twenty-five.

The catatonic stupor is often preceded by depression and discontent. The patient is inclined to be uncommunicative and his reactions are characterized by inattention, preoccupation, and dreaminess. The catatonic usually stands almost immobile with a fixed and blank stare. The patient opposes any efforts to move him from his attitudes and positions, which he may maintain for months. The patient refuses to dress or eat. Catalepsy, either rigid of flexible may be present. After a period of extremely

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[17]Drake, loc. cit.

[18]Noyes, op. cit., pp. 381-382.

[19]Drake, loc. cit.

variable duration the patient may slowly, or at times suddenly, emerge from his stupor. The catatonic's behavior returns closely to normal, or he may pass into a state of catatonic excitement.[20]

Catatonic excitement is characterized by an unorganized and excessive motor activity which seems senseless and unmotivated. Without warning or apparent cause, the patient may suddenly attack an inoffensive by-stander. He destroys his clothing, remains nude, and disregards all excretory cleanliness. Mystical experiences, hostility, and feelings of resentment are common.[21] Through automatic obedience the patient may carry out any verbal instructions, regardless of their absurd or dangerous nature.[22]

The paranoid type tends to have its appearance at a somewhat later age than the other forms, perphaps most frequently from thirty to thirty-five. Many patients show an unpleasant emotional aggressiveness. At first the paranoid's delusions are limited, but later they become numerous and changeable. Delusions of persecution are the most prominent in paranoid schizophrenia. Verbal expressions are possibly inappropriate. Imaginative fantasy usually takes on the value of reality. Many paranoid schizophrenics are irritable, discontented, resentful, and angrily suspicious. Auditory hallucinations usually occur, and the voices are most frequently threatening in nature. In general, paranoid schizophrenia may be regarded as a regressive, defensive type of a reaction.[23]

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[20]Gregory, op. cit., pp. 383-384.

[21]Noyes, op. cit., pp. 384-385.

[22]Drake, op. cit., p. 99.

[23]Noyes, op. cit., pp. 386-389.

There has been a great deal of speculation and also intensive investigation into the causation of schizophrenia, but inconsistent diagnosis and conflicting findings leave ultimate causation still in doubt. It is generally considered that schizophrenia may be psycho-social or somatic in nature. Each of these theories of causation result in contradictory methods of treatment.

According to the psycho-social theory, the schizophrenic patient is usually a person who has never acquired the degree of social skill he needs for shifting his perspectives when he is under stress. He has not succeeded in establishing himself firmly in his culture. He does not share his anxieties, conflicts, suspicions, or loneliness with others because he lacks the techniques for doing so. He may be overtrained in dependence and made extremely sensitive to the approval or disapproval of other persons. Such an individual has been on the receiving end so long that he is incapable of adequate human relationships. Therefore the patient may descend from inadequacy to complete ineffectuality and sometimes to complete inaction.[24]

The mother of a schizophrenic is often described as dominating, lacking in love for her child, having death wishes toward it, and passing on to the child rejection which the parent had suffered. This rejection, especially the unconscious death wishes of the parent, which are often disguised in a camouflage of excessive love and affection, are perceived by the child, consciously or unconsciously. This results in a state of anxiety which cannot be accounted for by the apparent situation.[25]

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[24]Cameron, op. cit., p. 486.

[25]Paul H. Hoch, M. D., and Joseph Zubin, Ph.D., Current Problems in Psychiatric Diagnosis (New York: Greene and Stratton, 1953), p.187-188.

Kohn and Clausen in 1956 studied parental authority in schizophrenia. They found that schizophrenic patients more frequently than normal persons of comparable backgrounds reported that their mothers played a very strong role and their fathers a very weak authority role. Normal males reported different patterns of parental authority from those reported by normal females, but schizophrenic males reported much the same pattern as aschizophrenic females. Normal subjects of different socio-economic backgrounds reported different patterns, but schizophrenics of differing socio-economic backgrounds reported almost the same patterns of parental authority relations. Female schizophrenics who reported strong maternal and weak paternal authority behavior said they were closer to their fathers than to their mothers, while male schizophrenics who reported the same authority relations said they were closer to their mothers.[26]

Some psychiatrist believe the first reaching out for love by the infant must be the crucial experience. If this is received with love and warmth, the experience is so gratifying that further rejection is not overly painful. On the other hand, if the infant is rejected, it is such a painful experience that the child is thereafter unable to reach out freely and is always handicapped in his attempts to find love. To him, loving is too dangerous an experience. His attempts are awkward, lacking in confidence, and are doomed to failure. He feels unloved, and more serious still, he feels unable to love others. The person often develops a tendency to hide other feelings, since he feels that no one is really interested in them. His behavior is frequently such that results in other people leaving him alone and becoming

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[26]Gregory, op. cit., p. 395.

uninvolved in his emotional life. The child emerges from infancy with feelings of being different and rejected. He feels that there must be some fatal flaw in his make-up. Since the person feels different, he becomes introverted and avoids socializing experiences with other children which might convince himself that he is just like the others. Whenever these feelings of inferiority cannot be escaped, panic often brings schizophrenia.[27]

Treatment according to the psycho-social theories will include measures essentially mental in nature to discover and modify the factors and problems which have acted as disorganizing forces on the personality, plus measures to relieve special symptoms, particularly those that are troublesome or dangerous to the patient or others.[28]

Constructive psychotherapy is limited unless the cooperation and confidence of the patient can be secured. Many respond to a liberal and sincere expression of personal consideration and appreciation. Since the physician seeks to understand the individual patient, he studies the patient's life experiences in light of disturbing factors. The psychotherapist assumes the idea that he does not cure the patient but only aids nature's spontaneous healing process. He realizes that the patient has had earlier, unfortunate experiences with people and he may not trust the physician or even be attentive. The psychotherapist often has trouble in communication, since the schizophrenic's speech is often disorganized and on the nonverbal level. When the patient is silent or

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[27]Hoch, op, cit., pp. 186-190.

[28]Gregory, op. cit., p. 399.

unresponsive, the psychotherapist has to accept this behavior as the patient's way of handling the anxiety producing situation.[29]

The therapist tries to have the patient acquire an objective attitude toward his beliefs and behavior. The patient is often encouraged to investigate his previous problems and study them for the meaningful factors involved. If the patient is psychotherapeutically inaccessible, efforts are directed toward re-eduction including the development of a wider social consciousness and the promotion of an interest in reality. Attempts are made to stimulate the patient's attention, detach his emotions from subjective material, redirect his interest to things outside of himself, introduce healthful, socialized habits, and bring him from his spiritual isolation. Occupational therapy, games, music, and congenial companionships are important aids in obtaining these satisfactions.

Contradictory to the psycho-social theories, the somatic theorists of the causation of schizophrenia state that little emphasis should be given to the family history of patients other than the aspect of inherited traits.

The majority of the somatic theories can be summarized as follows: Due to the chromosomes which contain genes derived from parents, the person uses normal chemicals in an abnormal way. As a result, at a certain time in life toxic chemicals are produced in the body which interfere with the normal operations of the brain and the body. Therefore, the world and the body as experienced by all the senses appears to be altered. But the person has learned to accept the evidence of the

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[29]Jules H. Masserman, M. D., Current Psychiatric Therapies (New York and London: Grune and Straton, 1963), p. 160-166.

senses as real or true, and continues to do so. He is unaware that the changes are due to changes in his brain and believes it is the world external to him that has been altered. He reacts in a way he considers appropriate, but as the perceptions are inappropriate so must be his actions as judged by others. His total behavior and personality is, therefore, different and this brings into play a host of social consequences in his family, friends, and society. This results in action by socity which may place him in a hospital or a jail.[30]

According to these theories, no one must be blamed for schizophrenia.

> It is common practice to blame relatives, husband or wife, or friends for the patient's condition. This is not wise and very rarely fair. There is little evidence to support the claim that schizophrenic patients become ill because their parents loved them too little or fussed over them too much. We do not believe that schizophrenia is caused by parental mistakes any more than diabetes is.[31]

Insulin coma therapy was introducedby Manfred Sakel of Vienna in 1933, and at the 1938 International Congress favorable results of its use in schizophrenia were reported from a number of different countries. By the time of the 1950 International Congress of Psychiatry in Paris, it was generally accepted as the best available treatment for early schizophrenia. A commission on New York State Hospital problems in 1944 compared the outcome of 1128 patients who had received insulin coma therapy in the Brooklyn State Hospital between January, 1937, and June, 1942, with 897 matched

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[30]Hoffer, op. cit., 84-85.

[31]Hoffer, Ibid., p. 126.

control patients admitted during the same period to other state hospitals where insulin treatment was not given. Eighty per cent of the treated patients had left the hospital, as compared with fifty-nine per cent of the untreated patients. Seventy-nine per cent of the treated hebephrenics had been discharged compared with fifty-nine per cent of the untreated patients. The patients treated with insulin had an average length of stay in the hospital of four months less than the untreated group, and the quality of their mission was considered better in all sub-groups. Follow-up studies, by other workers, however, indicated relapse rates among the discharged patients that were sometimes as high as fifty per cent. Others reported that the patients having a remission following insulin therapy were more likely to relapse than patients having a spontaneous remission without treatment.[32]

In view of the difficulties and risks of insulin coma therapy a number of psychiatrist preferred to use electroshock therapy. A controlled study by Rees in 1950 suggested that when patients treated with a controlled series of untreated patients, only the insulin group showed much better results than the untreated patients. They also noted many favorable reports on the results of combining insulin treatment with electroshock therapy, and considered that few progressive units confined themselves to the use of only one of these methods.[33]

Following the introduction of psychosurgery by Moniz in 1936, many schizophrenic patients were subjected to

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[32]Max Rinkel, M. D., and Harold E. Himwich, M. D., Insulin Treatment in Psychiatry (New York: Philosophical Library, 1951), pp. 254-261.

[33]Gregory, op. cit., 383-384.

prefrontal leukotomy or other operations. Surgery has usually been reserved for those who failed to undergo improvement with all other forms of treatment currently available, and has been used in chronic regressed patients of many year's duration. The results in schizophrenics of many years' duration have not been as good as in schizophrenics admitted to hospitals within the previous year or two, and are showing temporary, poorly maintained improvement with other forms of treatment. Studies in North America indicate that a considerable proportion of chronic schizophrenic patients can be returned to the community after brain surgery, and that as many as one-fourth may become self-supporting.[34]

Since the advent of chlorpromazine in 1953, and the great variety of tranquilizing drugs that have subsequently become available, there has been a therapeutic revolution in the management of schizophrenia. The procedures of insulin coma therapy and psychosurgery have been discontinued completely in many centers and used much less frequently than formerly in others. While the tranquilizing drugs were initially found to be most helpful in the control of excessive psychomotor activity and aggressive behavior, they were soon found to have a wider influence involving emotional responses and are currently used in the management of all varieties of schizophrenia.

A new treatment by using a highly effective, cheap, simple, apparently harmless vitamin has been introduced. Massive dosses of three thousand milligrams per day of vitamin B-3, also known as niacin, nicotinic acid, or nicotinamide, is believed to successfully counteract the schizophrenic toxin in the body.

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[34]Gregory, op. cit., p. 384.

This theory is relatively new and consists of the following ideas. When anything happens to interfere with the way messages are normally transmitted across the synapse from one neuron to another, many other parts of the brain are thrown out of order. Believers of this theory maintain that schizophrenia causes poisons made in the body to interfere with the carrying of messages to the brain, and as a result those parts of the brain which maintain constancy of perception are disturbed.

Adrenaline is produced by the body, but it is so toxic it must be removed as quickly as possible before it can do damage to the body. Recently it was discovered that the blood contains an enzyme called adrenaline oxidase which combines adrenaline with hydrogen peroxides to form new compounds. Some of the adrenaline, however, is converted into another poisonous chemical. This chemical, adrenochrome, has no effect on blood pressure and fortunately is very reactive, changing quickly in the body to less active chemicals. It is poisonous to nerve cells and even trace quantities of pure adrenochrome will kill nerve cells. Buffer substances in the body fluids quickly bind adrenochrome and keep it from coming in contact with the neuron. Adrenochrome can also be changed quickly into other, non-toxic chemicals. But for some unknown reason, the adrenochrome in schizophrenia is changed primarily into adrenolutin which is poisonous and produces changes in behavior. As a result, the schizophrenic patient has too much adrenochrome and too much adrenolutin.[35]

Nicotinic acid in the body can absorb methyl groups which are needed to convert noradrenaline into adrenaline.

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[35]Hoffer, op. cit., p. 87-90.

Therefore, large amounts of the vitamin prevent the formation of excessive amounts of adrenaline and this slows down the production of the toxic adrenochrome and adrenolutin.[36]

Since the treatment of schizophrenia with vitamin B-3 is fairly recent, extensive follow-up investigation reports are not available. Most of the research work on nicotinic acid was done in Canada and has been apparently successful. Its future in the treatment of schizophrenia can only be speculated.

The current treatment in North America of schizophrenic patients is most likely to be a combination of drug therapy, symptomatic electroshock therapy, group and individual psychotherapy, and social case work and environment manipulation.

Preventive psychiatry of schizophrenia generally includes early diagnosis, adequate treatment, proper follow-up supervision, and research. Presently research is the key to the world's schizophrenic problem. Much progress needs to be made to deter schizophrenia which accounts for fifty per cent of the mental hospital population.

Professor Franz Kallman reported in the New York Times, March 1, 1964:

> A large-scale study in New York State mental hospitals has shown that within two decades the reproductive rates of schizophrenic women increased 86 per cent, compared with an increase of 25 per cent by the general population. Dr. Kallman warned that this rise, reflecting the difference between early handling of schizophrenic patients and modern treatment methods, might result in a steady increase of the serious mental disorder. He predicted that the birth-rate among schizophrenics might eventually surpass that of the general population.

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