Schizophrenia and academic performance

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SYNOPSIS

Over a period of eighteen academic sessions from 1956 through 1973, 14,652 full-time freshmen gained admission to various courses available in this University. Longitudinal follow-up of the total intake till August 1974 revealed that 75 or 0.51 per cent developed overt schizophrenia. Their family and social background and other contributory factors leading to the precipitation of the disease are described in brief. Post-treatment prognosis of those with acute onset was more favourable than that of chronic hebephrenic types.

The attrition or dropout rate including 5 cases who committed suicide was as high as 66.67. They were either superannuated because of repeated failures or were obliged to withdraw because of inability to cope with stresses and strains of the university life which resulted in relapses. The dropout rates could not be regarded as final, because 9 known schizophrenics are still on the enrolment list and a certain per cent of those who joined the University after 1969 and currently attending various courses are at morbidity risk.

INTRODUCTION

Among the major psychotic illnesses which are the most academically crippling to the students, the greatest number are those which fall in the broad category of schizophrenia. Schizophrenia has been known to start in childhood and is found at any age onwards; but its maximum rate is noted in adolescence and early adulthood, the age group to which university students belong. The object of this prospective study was to determine the pattern of schizophrenic syndrome in this university's students and to ascertain the extent to which it produced adverse effects on their academic performance.

REVIEW OF LITERATURE

In a university setting schizophrenia is the most prevalent of the major psychoses. In a recent examination of the existing material on prevalence and incidence, Mishler and Scotch as quoted by Noyes (1968) conclude that at any moment 0.3 per cent of the general population are suffering from the distur-

bance, 0.15 per cent of the population are likely to experience its development and 0.02 per cent are admitted to hospitals with schizophrenia for the first time. Calculations made from various epidemiological surveys give the morbidity risk for the syndrome as 1.0 per cent. Morbidity risk is defined as the total risk of becoming manifestly ill for all persons surviving the age period of 15 to 45 years, when the disease is customarily recognised (Kolb, 1968). The condition is found almost universally and its incidence in any one country is considered to be not very far from this fugure. In a survey of their English general practice, Hewetson et al (1963) reported its incidence to be as high as 1.7 per cent. In the absence of any controlled survey of mental diseases the exact incidence of the disease in the general populations of Singapore and Malaysia are not known. According to Farnsworth (1966) no reliable data exist as to the incidence of psychotic illness among American university students, but estimates made by those who are familiar with the problem indicate that for every 1,000 students about two or three will develop such an illness each year. Carmen (1965) carried out a study of 35 psychotic Harvard undergraduates from 1955 to 1959; of these two-thirds suffered from schizophrenia and the remainder were severely depressed. The incidence of diagnosed psychosis at Cornell University for 1958-59 was 0.24 per cent of the student population (Braaten, 1961). Its rate of prevalence at the University of Leeds in England was reported by Still (1959) to be 0.32 per cent. In a prospective inquiry carried out on a total cohort of 1,555 first year students at the University of Edinburgh by Cecil B. Kidd (1965) 0.45 per cent were reported to have been diagnosed as schizophrenics.

PROCEDURE

The study concerned all the freshmen who entered the University during the eighteen academic sessions between October 1956 to July 1973. Their ages ranged from 18 to 20 years. The period of longitudinal follow-up of the entire intake spanned from October 1956 to August 1974. The psychiatric evaluation of all the victims was undertaken by a University Health Service physician experienced in the field of mental health, and at least one psychiatrist attached to a hospital or in private practice. The sample consisted of only established schizophrenics, while all borderline cases who many a time constitute difficult diagnostic problem even for experienced psychiatrists were eliminated from the project. Because it has been acknowledged that non-psychotic emotional disorders of adolescence such as crises of ego identification, emotional turmoil and instability are not easy to differentiate from early schizophrenia (Kolb, 1968).

RESULTS

Over the eighteen academic sessions from 1956 to 1973, 14,652 (male 8,861 and female 5,791) freshmen entered various courses of study available here. Of this group longitudinally followed up till August 1974, 75 students or 0.51 per cent manifested frank schizophrenia. The figure of 75 cases could not be considered as final, because the freshmen who gained entry to the first year of their respective courses within past four to five sessions are still in the University, and therefore, have not been under surveillance for the entire duration of their academic careers. Moreover, it would be premature to draw conclusions with regard to the academic prognosis and ability to acquire qualifications by those students whose studies were interrupted because of the disease, but are still on the University's enrolment list. The number could have been slightly higher, because some patients might have preferred to seek treatment from outside psychiatric sources without going through the University Health Service, and then might have withdrawn from studies giving non-psychiatric reasons. Among the women students who during the course of survey contributed two-fifths of the university population, there were 19 cases; whereas of the males who formed three-fifths of the student body 56 cases developed the illness. Table I reveals that 29 cases were initially detected by a University Health Physician. The remaining 46 were referred to the Health Centre by their teachers or guardians, or their own classmates and friends, or family doctors.

Family and Social Background

Kallmann as quoted by Kolb (1968) is of the opinion that development of schizophrenia takes place as a result of a complex interplay of constitutional and environmental factors. It is significant that in almost all cases the medical reports which they were obliged to submit prior to matriculation, previous histories of personal nervous breakdowns and family history of psychosis were withheld, even though the prescribed forms included these two relevant questions. The omissions could be attributed

either to genuine lack of knowledge of mental illness in the family, or to fear on their part that they might be barred from admission to the University. Nevertheless, as depicted in Table II 29 or 38.67 per cent of cases family history of psychotic illness was elicited. Ten (13.33%) had their parents divorced before joining the University; whereas 16 students had lost father or mother prior to entry so that 21.33 per cent were reared by one parent. In most cases both parents were overly strict towards them during their childhood and early adolescence days; but that was to be expected in the authoritarian eastern cultures. In 8 cases adverse economic factors contributed to the development of disease. Unhappy love relationships are at times considered to be precipitating factors especially in young boys and girls, 7 or 9.33 per cent prior to their breakdowns had experienced stresses in the form of uneven romantic relationships. As in three-quarters of our patients the disease became overt at the approach of sessional examinations, it could be assumed that academic work load was the obvious major situational stress that precipitated the breakdowns.

Previous Personality

Among the personality traits and characteristics common to most of them, were over-sensitiveness, over-conscientiousness, suspiciousness, reticence, shyness, tendency to day dreaming and preoccupation with bodily symptoms. Thus most of them could be considered to harbour schizoid traits. It is noteworthy that only a few in this group had actively participated, during schooldays, in sports, athletics or social activities. In pre-university days they had mostly concentrated on books and studies.

CLINICAL FEATURES

Clinical features of schizophrenia are so numerous and varied that a full descriptive study of the syndrome will be out of place here. Nevertheless, it would not be inappropriate to recapitulate a few main presenting symptoms with some illustrative cases encountered in this study. A glance at Table III would reveal that irrespective of cultural determinants the important features of schizophrenia are as those found in western cultures. Contents of delusions, hallucinations and patterns of bizarre behaviour would of course differ depending on the social background of the person.

Thought Disorder

Thinking disturbance is one of the outstanding features in this mental disease. Normally, the association of ideas follow one another with a definite logical connection progressing to an ultimate completeness of thought. But in this disorder they may be shortened, fragmented and otherwise so disturbed as to lack logical relationship. Out of a total of 75 patients, 32 or 42.67 per cent exhibited varying degress of thought disorder. An instance of this feature is conveyed by a first year female arts student in a letter she wrote to the author, "The elasticity of a demand curve is not due to the joining up of the elasticities of the various points of a particular commodity. Then the change in the elasticity of the points must be due to the change in the parameters which cannot remain constant."

Bizarre Ideas and Actions

Since to a lay person strange ideas and queer actions are the most striking features, majority of cases were referred by lecturers, fellows or other students for strange or inappropriate behaviours. One boy who harboured bizarre ideas that his blood was changing used to quarrel with roommates without rhyme or reason. He used to carry a big knife wherever he went ostensibly to protect himself from other students whom he considered hostile to him. He was reported to be in the habit of riding a motor cycle round the hostels aimlessly at odd hours. Another boy complained that there was something foul in his head. One female patient while waiting in the clinic for consultation, handed ten cents to another student who was a stranger to her, in the presence of several others, and asked him to buy sweets for her. Her unreasonable emotional behaviour was also manifested in the form of asking absolutely irrelevant questions at public meetings. In another case, a woman lecturer noted something unusual in a boy's behaviour when during a tutorial he interrupted her with a request that she should ask the chairman of the Students' Union to see him. One student was reported by his classmate to be behaving strangely by standing on a chair in a library rambling away irrelevant speech. This form of behaviour was seen in 29 or 38.67 per cent of the cohort.

Paranoid Tendencies

Among paranoid tendencies ideas of reference are common. They spring from the patient's sensitive and suspicious attitude. Consequently he misinterp-rets ordinary happenings as having some reference to himself.

Ideas of reference and advanced forms of delusions were found in 60 or 80.00 per cent. One student was suspicious of his father, thinking the latter was about to bring court action against him. And whenever his father was near the telephone he would demand to know whether he was calling police to apprehend him. Another student felt that his seniors from the Chinese stream were purposely troubling him by preventing him from borrowing the "red spot" books from the library. According to him they were also heard saying that political science students were very frightening. He was also convinced that some senior students were trying to brain wash his mind. He got ideas that somebody was going to kill him, and at times he was reluctant to take drinks or pills prescribed by a private practitioner, because he felt that the mother had added some poison to them.

One female arts student in a letter addressed to the author complained that her father loved another woman to such an extent that he would one day cheat her own mother of her money and elope with that woman. She voluntarily admitted that she was so involved with her suspicions that she could not get rid of them, and felt that she was making trouble for everbody. A final year male accountancy student harboured a delusion that his brother and uncle who knew a lot of psychology were trying to influence his mind.

An elder brother of one second year science student when interviewed by the author narrated, "In the past she was a pleasant and cheerful person, but for past two weeks or so she has been feeling every now and then that people in the University are eyeing at her in a suspicious manner. About a week ago when the family wanted to visit the grand-mother, she strangely asked her father. What was he trying to prove? Am I mentally unsound?" She also told the father that she was going to stop university education because she could not cope with the work load. She admitted that her brain was going hay-wire. After treatment for four months in the form of intensive drug and electroconvulsive therapy by a private psychiatrist she was certified fit by him to resume studies; but the condition relapsed a year later, and she failed the sessional examination again and was advised by her father to withdraw from the University. This young lady was obsessed by the idea that she was not trusted by her father. Obsessive thoughts are occasionally seen in schizophrenia and can be regarded as a disorder of control of thought.

Depression and Suicidal Tendencies

Schizophrenic patients are generally ridden by feelings of guilt and shame, and they tend to feel extremely depressed.. They are also known to exhibit tendencies towards selfdestruction. Schi-zophrenic depression, however, differs from true endogenous depression in that the former shows a split between ideas and feelings and is accompanied by strange behaviour, whereas the latter lacks these features. In contrast to endogenous depressive illness schizophrenic depression is insidious in onset and is more constant in symptomatology.

Out of 75 patients 65.33 per cent revealed varying degrees of depressive feelings. One student was noticed by a lecturer to be sitting and crying at the back of a class during the lecture. Some others were reported to be tearful without cause after admission to the hospital. Five cases were so depressed that they committed suicide during the period of study.

Emotional Blunting and Incongruity

In a normal individual there are links which maintain a satisfacory balance between thought, feeling and action. But, in schizophrenia all the links are either weakened or broken producing inappropriateness of thought, emotion and behaviour in relation to the external world. Failure to express appropriate feelings in usually seen in forms of apathy and indifference. It is because of emotional blunting that a student gradually ceases to take interest in academic work, and his mind starts wandering. Forty per cent of our sample during the course of interviews conveyed the impression of varying degrees of emotional incongruity. For instance, one boy living in a hall of residence telep-honed the author one night asking to see him urgently. On arrival, he was found sitting comfor-tably in a chair and looking physically fit. His only complaint was fatigue during past few days. Though his emergency call was unnecessary he appeared very indifferent and failed to express any concern let

aside an apology for calling a doctor for a minor symptom.

Hallucinations

Hallucinations are disorders of perception produced in the absence of external stimuli and can occur in any of the sensory fields, auditory hallucinations being the most common. In all 26 or 34.67 per cent manifested the disorder. One student volunteered a statement that she used to hear birds singing off and on or William Wordsworth reciting poetry. A few gave history of the disorder in the form of ringing sounds or people talking to them. One student during the course of a hostel visit was found muttering and smiling to himself in respones to auditory hallucinations.

ADVERSE EFFECTS ON ACADEMIC ACHIEVEMENT

Out of 75 only 9 are still on the University's enrolment list, 4 graduated without delay. Five obtained degrees one year behind their class. whereas 7, two years later. Five students committed suicide and the remaining 45 dropped out. In other words. 66.67 per cent have so far failed to graduate (Table IV). This figure could not be considered as final since the freshmen who gained entry to first year of respective courses in 1969 session are still in the University, and therefore, they have not been under surveillance for the entire span of their academic careers. Out of 75 cases reported 32 became overtly schizophrenic during the first year of study, 16 during the second year, 13 while in their third year, 9 during the fourth year and 5 students in the fifth or sixth year (Table V). Thirty-seven were hospitalized for observation and treatment for periods ranging from one week to three months, and 38 were managed as outpatients with anti-psychotic drugs, and with or without electroconvulsive therapy.

COMMENTS

What happens to schizophrenics is of great significance if they fail to recover. In Farnsworth's (1966) opinion and this is the view of many who are involved in student health work, their mental ill-health in terms of society and their own happiness is a financial and intellectual drain. In view of the decisions that must be made of psychotic students it is surprising that so little is known about their course, prognosis and about their chances of continuing their professional activities if they manage to recover.

Prior to the advent of phenothiazine group of drugs and electroconvulsive therapy, and their application in psychiatry, even if the patient recovered from schizophrenia he was prone to relapses. Moreover, he exhibited a certain degree of emotional and intellectual defect. As a consequence, his academic performance on resumption of studies was very seldom restored to what would have been expected normally from him. Although now, because of anti-psychotic drugs the outlook in this disease has improved, the prognosis in regard to suitability for university studies remains guarded. Our modest experience leaves us with an impression that modern psychiatric treatment, even though it may assist in retrieving schizophrenics socially, has not fulfilled the dream of restoring their personalities completley nor in re-equipping their academic capabilities, to enable them to deal with the strenuous university life. This is because the heavy curricula and the qualities required for academic success, such as single mindedness and compulsive habits of learning intensify introverted or schizoid tendencies and are conducive to mental breakdowns.

Majority of schizophrencis in this University setting tended to pursue downhill course despite the administration of modern physical and drug therapy. According to Farnsworth (1966), a few studies have been made, small in scope to be sure, which suggest that a modest optimism in this regard is warranted. Coon (1961) on the other hand pronounced a far more optimistic note in regard to the ultimate prognostication of schizophrencis seen by him and his colleagues at the Harvard University. His cases almost invariably recovered completely.

In the author's opinion simple and hebephrenic schizophrenics which are subject to cyclic relapses showed poor prognosis and constituted major cause of academic attrition based on grounds other than scholastic disability. In the interest of the society as a whole such cases with strong premorbid schizoid personality and family history of psychosis should not be granted at the most more than one additional chance to continue their education. Although in rare instances complete recovery has been known to occur; in general it may be said that such cases should abandon academic careers entirely for psychologically less traumatic occupations. This is because university graduates by virtue of their educational background are expected to hold responsible positions and are the future leaders in various spheres of human

activity. If they somehow manage to graduate and occupy professional or executive positions, in the long run when the condition relapses, are likely to pose a hazard to their subordinates, colleagues and even superiors. The very organisation in which they work would thereby be disturbed. For the same reasons, known victims of schizophrenia ought to be rejected from entry to the university.

Failures to acquire degrees on academic grounds is expected to a certain extent in most institutions of higher learning. But, if the inability to fulfil the goals because of medico-psychiatric reasons can be reduced by proper preventive and curative measures no efforts should be spared. In this University the annual cost to educate an individual student varies from about $ 7,000 to $ 12,000 depending on the course he is pursuing, an arts student costs the least while an engineering or medical student the most. Therefore, the reason for rejecting a student with previous history of schizophrenia from gaining entrance to the University has added valid financial reasons. Instead of permitting a known schizophrenic, however good his pre-university career might have been, it is desirable to let in a second best student if his previous mental health was sound.

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REFERENCES

Braaten, L.J. (1961). A Descriptive Study of Schizophrenia in a College Setting. The Student Medicine, 9, 298.

Carmen L.R. (1965). A Three-to-Seven-Year Follow-up Study of Thirty-five Psychotic Hospitalised Students. J.A.C.H.A., 13, 541-550.

Coon, G.P. (1961). Emotional Problems of the Student. Appleton-Century Crofts, New York, 1st edition, pg. 116.

Farnsworth, D.L. (1966). Psychiatry, Education and the Young Adult. Charles C.Thomas, Illinois, 1st edition, pg. 51-52.

Hewetson, J.C. et al. (1963). The Incidence of Psychiatric Disorders in General Practice. The Practitioner, 190. 127.

Kidd, C.B. (1965). Psychiatric Morbidity Among Students. Brit. J.prev. soc. Med., 19. 143-150.

Kolb, L.C. (1968). Noyes' Modern Clinical Psychiatry. W.B. Saunders Company, Philadelphia, 7th edition, pg. 359-360 & 391.

Still, R.J. (1959). Preliminary Report on a Ten-year Survey of the Mental Health of Students. Report of the Eleventh Conference on Student Health in British Universities and Medical Schools, pg. 33-49. The British Student Health Officers' Association.

Table I
SOURCES OF REFERRAL

Referrals	Number of Cases	Percentage
Self-referral (detected by University Physician)	29	38.67
Classmates or friends	8	10.67
Parents or guardians	10	13.33
Members of taching staff	20	26.66
General practitioners	8	10.67
Total	75	100.00

TABLE II
CONTRIBUTORY FACTORS IN FAMILY AND SOCIAL BACKGROUND

Factors	Number of Cases	Percentage
Family history of Psychotic illness	29	38.67
Parents divorced/separated	10	13.33
Parents deceased	16	21.33
Adverse economic factors	8	10.67
Uneven romantic relationships	7	9.33

TABLE III
DISTRIBUTION OF SYMPTOMS

Symptoms	Numbers of Cases	Percentage
Paranoid tendencies	60	80.00
Depression	49	65.33
Thought disorder	32	42.67
Emotional incongruity	30	40.00
Bizarre behaviour	29	38.67
Hallucinations	26	34.67

TABLE IV
RATE OF ATTRITION

Mode	Number of Cases	Percentage
Dropped out without obtaining a degree (including 5 cases of suicide)	50	66.67
Graduated with one year's delay	5	6.67
Graduated with two years' delay	7	9.33
Graduated with no delay	4	5.33
Still in the University	9	12.00
Total	75	100.00

TABLE V

DISTRIBUTION OF BREAKDOWNS IN
RELATION OF STAGE OF
ACADEMIC CAREERS

Yera of Breakdown	Number of cases	Percentage
1st year	32	42.67
2nd year	16	21.33
3rd year	13	17.33
4th year	9	12.00
5th year	2	2.67
6th year	3	4.00
Total	75	100.00