FIRST ADMISSION SCHIZOPHRENIA: CLINICAL MANIFESTATION AND SUBTYPES

W F Tsoi

ABSTRACT

This paper describes the clinical manifestations and classification of schizophrenia in Singapore. The subjects were all first admissions to Woodbridge Hospital in 1975. They were followed up 5, 10 and 15 years later. There were 423 patients. Of these, 17% had no delusions or hallucinations and 14% presented with only negative and withdrawn behaviour. They can be subdivided into four subtypes: paranoid, hebephrenic, "catatonic" and simple. Follow-up study showed that the percentage of full, partial and no recovery remained the same at around 30%, 30% and 40% at the end of 5, 10 or 15 years. The paranoid subtypes had best outcome and the simple had the worst outcome. Bleuler's criteria and his subtypes of schizophrenia are accepted by most psychiatric textbooks. These criteria did not include behavioural disturbances which are the commonest manifestations in this study. Other follow-up studies confirmed that paranoid patients have the best long-term outcome.

Keywords : *schizophrenia, subtypes, first admission, outcome, Singapore.*

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INTRODUCTION

The aim of this paper is to describe the clinical manifestations and to classify a group of Singapore schizophrenic patients and to find out in what way they were different from the standard descriptions of schizophrenia in Western countries. The patients were also followed up to determine the outcome of their illness.

The term "schizophrenia" was first used by Bleuler[1] who in 1911 defined it as "a group of psychoses whose course is at times chronic, at times marked by intermittent attacks, and which can stop or retrograde at any stage, but does not permit a full restitio ad integram." The disease is characterised by a specific type of alteration of thinking, feeling, and relation to the external world which appears nowhere else in this particular fashion. Bleuler[1] divided the symptoms into (1) fundamental (primary) symptoms which include loosening of association, affective blunting, autism (volition) and ambivalence, which was the basic psychopathology; and (2) accessory (secondary) symptoms like delusions, hallucinations and catatonia which were reactions to the fundamental symptoms. He subdivided schizophrenia into four subdivisions: (1)paranoid, (2) catatonic (3) hebephrenic and (4) simple schizophrenia. In simple schizophrenia only fundamental symptoms can be found throughout its whole course. Two other important variants of schizophrenia were later introduced: schizoaffective psychosis[2], and schizophreniform psychosis[3], but Bleuler's concept remained basically unchanged for the next 70 years and his four subtypes have been incorporated in the 9th revision of World Health Organisation International Classification of Diseases[4], and in a modified form by the American Psychiatric Association[5] which includes five types: disorganised (hebephrenic), catatonic, paranoid, undifferentiated and residual.

MATERIALS

The subjects were all first admissions to Woodbridge Hospital (the main psychiatric hospital in Singapore) during the period January to December 1975, and they had to satisfy the following conditions :

i. Singapore resident, age below 60 years;

ii. Diagnosed as schizophrenia using Bleuler's and ICD-9 criteria;

iii. Stayed in hospital for at least 3 days;

iv. Not suffering from any underlying medical conditions that may contribute to the symptomatology eg mental retardation, alcoholism, drug abuse, organic brain disease and other medical disorders.

Department of Psychological Medicine
National University Hospital
Lower Kent Ridge Road
Singapore 0511

W F Tsoi, MD, FRCPG, FRCPsych
Head

METHODS

On admission, the patients were examined by the medical officer on duty using a standard semi-structured interview (devised by the author) which has the following broad headings: family background, personal history, main complaints, psychiatric history and mental state examination. The patients were reviewed by the author on discharge to confirm the diagnosis. They were followed up 5, 10 and 15 years later by an interview either in the hospital or at their homes. The data obtained were coded and analysed by IBM 3081 mainframe computer using the software package SPSS.

RESULTS

Schizophrenia constituted about 60% of all the new admissions to the hospital. There were a total of 423 schizophrenic patients: 248 (59%) males (mean age 26.2 years), and 175 (41%) females (mean age 29.0 years) (Table I). Most of them (85%) were single, below 30 years of age (70%), and about 50% were gainfully employed.

Table I - Schizophrenia : basic characteristics

	Male	Female	Total
Number	248	175	423
Percent	58.6%	41.4%	100.0%
Mean Age	26.2 yr	29.0 yr	27.4 yr
Std Dev	10.5 yr	12.0 yr	11.1 yr
Race			
Chinese	75.0%	89.1%	80.9%
Malay	11.3%	5.1%	8.7%
Others	13.7%	5.7%	10.4%
Subtypes			
Paranoid	16.0%	16.2%	16.1%
Hebephrenic	49.6%	60.0%	53.4%
Catatonic	19.6%	12.7%	16.8%
Simple	14.8%	12.1%	13.7%

Table II - Abnormal behaviour reported or observed at time of admission

Complaints and Abnormal Behaviour	Frequency
1. talk to oneself	40.6%
2. laugh to oneself	39.5%
3. aggressive	31.6%
4. irrational	27.5%
5. withdrawn	23.1%
6. talk nonsense	21.9%
7. cry to oneself	20.5%
8. restless or hyperactive	19.0%
9. scolding or abusive	10.5%
10. stop working	9.9%
11. wandering	9.6%
12 throwing things	8.8%
13. suicide threats	7.9%
14. fight or quarrel	7.3%
15. not eating or bathing	7.3%
16. giddy or groggy	7.0%
17. praying or preaching	6.7%
18. queer	6.7%
19. suicide attempt	6.7%
20. shouting, noisy, screaming	6.4%

Table III - Schizophrenia : four subtypes Commonest symptoms from psychiatric history

Schizophrenia Symptoms	Paranoid n=68 (16%)	Hebephrenic n=226 (53%)	Catatonic n=71 (17%)	Simple n=58 (14%)	Total n=423
Talk to oneself	12%	54%	47%	29%	43%
Laugh to oneself	10%	46%	44%	45%	40%
Irrational	15%	34%	34%	29%	30%
Cry to oneself	4%	28%	17%	14%	21%
Talk nonsense	13%	21%	34%	17%	21%
Aggressive	27%	34%	47%	16%	32%
Restless	12%	26%	32%	0%	21%
Disturbed	27%	23%	30%	7%	22%
Throw/break things	8%	16%	34%	10%	17%
Scolding/abusive	7%	12%	16%	5%	11%
Fight/quarrelling	4%	7%	10%	7%	7%
Withdrawn	9%	20%	21%	59%	24%
Stopped work	10%	8%	13%	10%	10%
Neglect self	0%	2%	6%	14%	4%
Not eating/bathing	3%	6%	7%	24%	8%
Sleep Disturbance	52%	61%	60%	32%	55%

Table IV - Schizophrenia: four subtypes Commonest symptoms from mental state examination

Schizophrenia Symptoms	Paranoid n=68 (16%)	Hebephrenic n=226 (53%)	Catatonic n=71 (17%)	Simple n=58 (14%)	Total n=423
Affect					
Anxiety/fear	6%	10%	4%	5%	8%
Depressed	22%	11%	9%	5%	12%
Irritable	4%	10%	13%	7%	9%
Blunted Affect	0%	35%	41%	60%	35%
Thought					
Thought disorder	4%	11%	9%	9%	9%
Mute/reticent	2%	3%	1%	28%	6%
Talkative	4%	8%	7%	2%	6%
Delusions					
Paranoid/harm	79%	56%	0%	0%	42%
Charm/magic	21%	26%	0%	0%	16%
Spirit/possession	16%	9%	0%	0%	7%
Reference	12%	12%	3%	2%	9%
Grandiose	10%	5%	7%	0%	6%
Others	12%	13%	0%	0%	2%
Hallucinations					
Hear voice	38%	65%	0%	0%	40%
See vision	4%	10%	0%	0%	6%

Clinical manifestations

They were brought to the hospital with complaints of abnormal behaviour like talking to themselves, laughing to themselves, being aggressive, behaving irrationally, being withdrawn and talking nonsense (Table II).

Their aggression was directed usually at family members and neighbours. Their destructive behaviour included breaking furniture and/or household things, tearing paper or clothes and throwing things from high rise building, a behaviour which at one time caused some public concern.

In the mental state examination, abnormal emotional states elicited include affective blunting (34%), depression (12%), irritability (8.5%), and fear (6.4%). Delusions of persecution or harm were most common (43%), followed by delusions of charm, magic or spirit (35%), and ideas of reference (10%). Other less frequent delusions were grandeur; being poisoned, followed, watched, molested, raped and unfaithful. They complained of being disturbed by neighbours, police, gangsters, spirits and gods, and their symptoms may involve religious beliefs and practices, eg they may complain of being disturbed or possessed by spirits or "gods". The commonest hallucinations were hearing voices (39%) and seeing visions, usually ghosts (7%).

Sex and ethnic groups

There was no difference in the type of complaints and symptoms between the males and females. Of the three main ethnic groups (Chinese, Malays and others), the Malays had the least complaints of insomnia, somatic symptoms, depression and delusion, but they had more negative symptoms like withdrawal, neglecting oneself, not eating or bathing, and feeling tired and weak. The Chinese had slightly less disturbed and abnormal behaviour. The other races (mostly Indians) had more auditory hallucination (hearing voices).

Schizophrenia: four subtypes (Tables III and IV)

The schizophrenic patients were divided into four subtypes according to their clinical presentation: (1) paranoid, if delusions and hallucinations dominate the picture; (2) hebephrenic, if there are both positive and negative symptoms; (3) undifferentiated ("catatonic"), if the patient presented with mainly abnormal behaviour and manners; and (4) simple

Table V - Schizophrenia : four subtypes (for age < 40 years) - Outcome 5, 10 and 15 years later

Schizophrenia	Paranoid n=49 (17%)	Hebephrenic n=163 (55%)	Catatonic n=47 (16%)	Simple n=36 (12%)	Total n=295
1980					
Good	36%	35%	33%	11%	32%
Fair	38%	30%	29%	31%	31%
Poor	26%	35%	38%	58%	37%
Significance		$x^2 = 12.264$	$p < 0.05$		
1985					
Good	29%	32%	31%	19%	30%
Fair	31%	34%	27%	32%	32%
Poor	39%	34%	43%	49%	38%
Significance		$x^2 = 4.639$	$p < 0.05$		
1990					
Good	31%	33%	37%	5%	30%
Fair	39%	30%	27%	29%	31%
Poor	29%	37%	37%	66%	39%
Significance		$x^2 = 18.747$	$p < 0.005$		

Good = not receiving treatment and working
Fair = treatment and working; or no treatment and not working
Poor = treatment, not working

(Crow's type 2), if the patient was passive and presented with only negative symptoms.

Paranoid patients were older (mean age 35 years) than the other subtypes (mean age 25-27 years). There were more Chinese. Their main delusions were: persecution (80%), charm (22%), spirit (17%), reference (12%), grandeur, being poison and being followed. Other important symptoms were auditory hallucinations (36%), and visual hallucinations (5%). Some were reported to be aggressive (29%), disturbed (20%) and depressed (24%). They had less electroconvulsive therapy and they had shorter period of hospital stay.

The "hebephrenic" schizophrenic was the largest subtype (55% of the total). Their symptoms in order of frequency were auditory hallucination (61%), paranoid delusion (55%), talking to themselves (51%), laughing to themselves (45%), aggressive behaviour (32%), abnormal behaviour (31%), delusion of charm (26%) and spirit (10%) and ideas of references (12%), thought disorder (22%) and affective blunting (33%).

The undifferentiated or "catatonic" schizophrenics had more young adult males. They did not have overt thought disorder, delusions and hallucinations. They presented mainly with aggressive behaviour (47%), talking to themselves (47%) and laughing to themselves (44%), restlessness (32%) and disturbed behaviour (30%).

The simple or "type 2" schizophrenics had a longer history and presented mainly with passive and negative symptoms like blunting of affect (61%), social withdrawal (55%), laughing to themselves (49%), and being mute or reticent (27%). Like the undifferentiated subtype, they did not have overt thought disorder, delusion and hallucination. They had the longest period of hospitalisation.

Follow-up study

A follow-up study was carried out 5, 10 and 15 years later[6-8]. In 1990, at the end of 15 years, 31 (8.8%) had died of natural death and 40 (11.4%) had died of suicide. The paranoid subtype had the lowest suicide rate (1.7% died of suicide in 15 years) and the simple subtype, the highest suicide rate (34.1%). The surviving patients were followed up by an interview in 1980, 1985 and 1990. Only patients who were alive and who were below age 40 years at the time of their first admission in 1975 were included in the follow-up study. The patients' outcome were classified into three categories:

(i) "full recovery" - working and not receiving psychiatric treatment,

(ii) "partial recovery" - receiving psychiatric treatment but working, or not receiving psychiatric treatment and not working,

(iii)"not recovered" - receiving psychiatric treatment and not working.

At the end of the 5, 10 and 15-year period, the ratio of the full recovery, partial recovery and not recovered remained constant at around 30:30:40. This shows that the patients' conditions remained stabilised after the 5th year and remained the same at the 10th and 15th years. Simple schizophrenia has poorer outcome than the paranoid, hebephrenic and catatonic subtypes at the end of the 5th, 10th and 15th years ($p < 0.05$, $p < 0.05$ and $p < 0.005$ respectively) (Table V). Patients who had had a longer history at the time of first admission in 1975, had a poorer outcome. The simple schizophrenia subtype had a poorer outcome than the other groups (Table V). The results from the Modified Global Assessment Scale (Table VI) showed the same trend.

Table VI - Schizophrenia : four subtypes (for age < 40 years) - Global Assessment Scale

Schizophrenia GAS scores*	Paranoid n=49 (17%)	Hebephrenic n=163 (55%)	Catatonic n=47 (16%)	Simple n=36 (12%)	Total n=295
Scores 0-3	2%	12%	12%	28%	13%
Scores 4-6	29%	24%	17%	39%	25%
Scores 7-9	69%	64%	70%	43%	62%
Significance		$x^2 = 19.264$	$p < 0.01$		

* GAS = Modified Global Assessment Scale

0 needs constant supervision
1 needs supervision
2 unable to function in all areas
3 major impairment in several areas
4 impairment in some areas
5 function with some difficulty
6 function fairly well
7 good function in some areas
8 good function in all areas
9 superior function in a wide range of activities.

DISCUSSION

Criteria for schizophrenia

The concept of schizophrenia has been changing ever since the term was first introduced by Bleuler[1]. However, most of Bleuler's original symptoms - association loosening, affective blunting, autism (volition), ambivalence, delusions, hallucinations and catatonia - have been accepted by English psychiatric textbooks. One of the exceptions is Schneider[9], who introduced the concept of first rank symptoms which are hearing thoughts spoken aloud, "third person" hallucinations, hallucinations in the form of a commentary, somatic hallucinations, thought withdrawal or insertion, thought broadcasting, delusional perception, and feelings or actions experienced as made or influenced by others. The World Health Organisation[4] combined both Bleuler's and Schneider's concepts and requires at least two of the following symptoms during the same illness: fundamental disturbance of personality, Schneider's first rank symptoms[9], delusions, hallucination,

schizophrenic thought disorder, mood (shallow, capricious or incongruous), ambivalence, disturbance of volition, negativism, stupor, catatonia. To improve reliability, Feighner et al[10] introduced the concept of operational definition which later was adopted by the American Psychiatric Association[5] whose criteria for schizophrenia are summarised as follows. To be diagnosed as schizophrenic, the patient must have one of the following criteria for at least one week: (1) two of the following - thought disorder, delusion, hallucination, catatonia, inappropriate affect, (2) first rank type delusions, and (3) first rank hallucinations. In addition there must be disturbance in work, social relation, self-care (residual symptoms) for at least 6 months. These criteria did not include non-specific behavioural disturbances like talking, laughing and crying to oneself, aggressive , abnormal and withdrawn behaviour, restlessness and wandering which are the commonest symptoms described in this study.

Subtypes of schizophrenia

Bleuler[1] originally classified schizophrenia into four subtypes: (1) paranoid in which hallucinations or delusions held the forefront of the clinical picture, (2) catatonia in which catatonic symptoms dominated, (3) hebephrenia in which accessory symptoms appeared but did not dominate the clinical picture, and (4) simple schizophrenia in which only the specific, basic symptoms could be found throughout its whole course. Like his diagnostic criteria, these four subtypes have been accepted by psychiatric textbooks and the World Health Organisation[4]. They were modified by the American Psychiatric Association[5] which also gave them different names as disorganised, catatonic, paranoid, undifferentiated and residual.

In spite of their world-wide acceptance, studies showed that the subtypes are not distinct disease entities. They are unstable and nonspecific as one subtype may develop into another over time. Subsequent admissions showed that the paranoid subtypes may change to the non-paranoid subtypes[11].

Follow-up studies showed that paranoid patients had better outcome than hebephrenic[11-13]. Fenton and McGlashan[11] found that the undifferentiated fared better than the hebephrenic, but Kendler et al[12] found no difference. In this study, when the undifferentiated subtype was divided into an active or "catatonic" and a passive or "simple" subtype, the latter was found to have the worse prognosis. Simple schizophrenia which has been dropped by the American Psychiatric Association appears to be fairly distinct from the other subtypes in terms of their onset, clinical manifestation and prognosis and there has been an attempt to re-introduce it. Until a biochemical basis for the various subtypes can be found, any variation from Bleuler's original system will probably not endure the test of time. The concept of catatonic schizophrenia has changed over time. Originally it was confined to patients who presented with waxy flexibility, catalepsy and abnormal posturing. Later, other abnormal motor behaviours like mannerism, stereotypy and restlessness were regarded as "catatonic".

CONCLUSION

Clinical study of a group of schizophrenics at Woodbridge Hospital showed that they presented mainly with abnormal behaviour. Clinically, 17% presented with mainly disturbed behaviour, and 14% presented with mainly negative and withdrawn behaviour (both without overt delusions or hallucinations). They can be subdivided into four subtypes: paranoid, hebephrenic, "catatonic" and simple, which had slightly different prognosis.

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