

Phenomenological study of thinking and perceptual disorders in schizophrenia

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Abstract

Background: The diagnosis of schizophrenia is entirely dependent upon its symptom cluster or phenomenology and there lies the importance of studying the disease from this angle.

Materials and methods: Seventy patients with schizophrenia fulfilling the revised third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM III R) criteria were the subjects of this study. The principal objective was to study thought and perceptual disorders in schizophrenia. Besides the sociodemographic data, a selected questionnaire (Assamese version) was prepared from the Present State Examination schedule (ninth edition) for investigating the patients.

Results: The phenomenology was studied under three headings: First rank symptoms, types of delusions and hallucinations. Twenty six patients had first rank symptoms. Auditory hallucinations in the form of voices arguing and voices commenting topped the list followed by somatic passivity and volitional acts. Audible thoughts were the most infrequent ones. Delusions of reference scored highest. Delusions of persecution and misinterpretation were next followed by religious and grandiose delusions. Delusions of pregnancy, sexual and fantastic delusions scored the minimum. In morbid jealousy or delusion of infidelity, females outnumbered males. Auditory hallucinations were highest among the hallucinations followed by visual, tactile, olfactory and gustatory hallucinations. In tactile hallucinations, the percentage frequency was quite high in females.

Conclusion: In the phenomena of delusions and hallucinations, sociocultural factors played the primary role. This study is a proof to the 'universality' theory of schizophrenia in relation to its phenomenology.

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Introduction

The term phenomenology or phenomenological psychopathology is concerned with the objective description of abnormal states of mind in a way that avoids as far as possible preconditioned theories. The Greek word 'phenomenon' is usually translated as 'appearance' and understood as directly observable appearance.

Although different concepts of schizophrenia are still emerging, most of them give prime importance in the symptomatic definition. No specific aetiological definition is established yet, as the aetiology of schizophrenia is still controversial. The diagnosis of schizophrenia is entirely dependent upon its symptom cluster or phenomenology and there lies the importance of studying the disease from this angle.

Though various studies have been carried out to understand the sociodemographic and phenomenological variables in different parts of India, no such systematic and methodical study has been carried out so far in the entire North East region. So in this clinical work an attempt had been made to understand the phenomenology of schizophrenia in relation to thinking and perceptual disorders in this region.

Aims and objectives

The present work designed to study the phenomenology

of thought and perceptual disorder of schizophrenia in terms of the following –

1. To find a correlation of different thought and perceptual disorders with sociodemographic and clinical variables.
2. Frequency of occurrence of first-rank symptoms (FRSs) in patients with schizophrenia of our setup.
3. Common types of thought and perceptual disorders present in patients with schizophrenia of our setup.

Methods and materials

Operational procedure: This study was conducted upon the patients attending both the outpatient and inpatient departments of psychiatry of Gauhati Medical College Hospital, Guwahati, Assam, India for the period from 1st April 1989 to 31st March 1990. Out of all cases 70 patients of schizophrenia meeting the diagnostic criteria of the revised third edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM III R)[1] along with the inclusion and exclusion criteria had been selected for the study. Patients available were mostly from the rural and urban settings of lower Assam comprising of seven districts (figure 1). Informed consents were taken and the study was approved by the institutional ethical review board.

Criteria for selection

Inclusion criteria –

1. Diagnosis of DSM III R schizophrenia.
2. Duration of illness between six months to two years.
3. Patients with prominent disorders in the contents of thought and hallucinatory perceptual disorders at the time assessment.

Exclusion criteria –

1. Patients of schizophrenia without disorders of the thought and perception at the time of interview.
2. Patients of schizophrenia with formal thought disorders.
3. Patients of schizophrenia associated with epilepsy, mental retardation, cannabis, alcohol, amphetamine or any other psychoactive substance abuse, under steroid and antitubercular treatment.
4. Patients with systemic physical disorder capable of producing psychosis.



Figure 1 Lower Assam area.

Description of the tools of enquiry: A proforma had been prepared to document the data. This proforma consisted of personal information and sociodemographic data and a prepared questionnaire (Assamese version of Present State Examination [PSE]).[2] The questionnaire was prepared by selecting 43 questions in keeping with the aim of our present study from the PSE, including Hindi adaptation of ninth edition, prepared by the World Health Organization (WHO) Collaborating Centre for Training and Research in Mental Health, Department of Psychiatry, Post Graduate Institute (PGI), Chandigarh, India. As there was no Assamese version of the PSE, the selected questions were translated from the PSE English and Hindi versions by three different persons separately including the clinical psychologist and the psychiatric social worker of the department as well as the first author herself. These three separate questionnaires were then compiled by the second author who was knowledgeable in PSE application. Initially the questionnaire was tested upon ten different individuals including normal persons as well as patients and thus the validity of the questionnaire was tested. Test retest and interrater reliabilities of the

questionnaire were also then assessed between two consultants before it was finally adopted as a tool for the enquiry.

Interview procedure: All the 70 selected patients both from the outpatient and inpatient departments were interviewed in details using the tool. No rigid interview pattern was set and the sequence of the interview was made flexible to elicit maximum data.

Patients' treatments were carried out as necessary. Results were analysed according to appropriate statistical procedures. All statistical calculations were done manually.

Results and observations

Phenomenology: Seventy patients of schizophrenia studied had shown varying symptomatology. The most common symptom was delusion of reference followed by different auditory hallucinations and persecutory delusions. Visual hallucinations came out next to them.

1. Preliminary question for delusion

The 21 (30%) patients who replied positively to this question said that they could not think quite clearly and there was interference with their thoughts. They knew that something was wrong and were not in full control of their thoughts.

		Males (n=38)	Females (n=32)	Total (n=70)
Mean Age (years)		27.3±8.67	28.9±8.99	
Marital Status	Single	15	13	28
	Married	23	19	42
Residence	Rural			39
	Urban			31
Religion	Hindu			56
	Muslim			14
	Others			2

Table1: Sociodemographic Demographic Distribution of the Study Population

2. Thought insertion

Out of the total eight (11.42%) patients having this symptom, four were males. Fifty percent of them came from rural area. Two of them described that thought was inserted to them by their neighbours, one named God and another young man of 22 years named Aristotle as his thought inserter. Six of these patients were of the age group 21-30 years and all were educated.

3. Audible thoughts

Out of four (5.71%) patients hearing their own thoughts, three were females. All of the four patients came from rural background.

4. Thought broadcasting

Among 11 (15.71%) patients, five were males and six females. The thought were broadcasted mainly through television or radio. 72.73% of them were from urban area.

5. Thought block

Seven (ten per cent) patients had this symptom. All of them had the symptom sometimes, not always. 85.71% of them were males. 42.86% of the patients were in the age

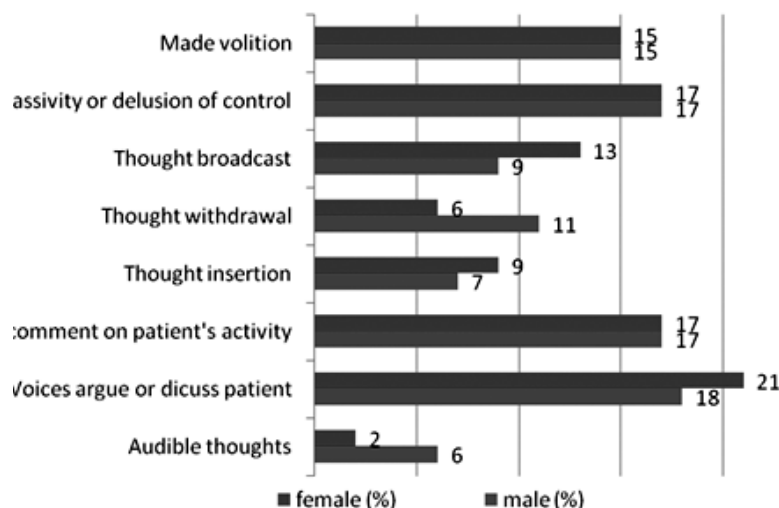


Figure 2 Distribution of first rank symptoms among male and female patients.

group of 40 years and above.

6. Thought withdrawal

Out of these nine (12.84%) patients, six were males and seven (77.78%) came from rural areas. The thought withdrawal was caused by neighbours, family members or by unknown people.

7. Thought reading

Fourteen (20%) patients had this symptom, out of which eight were males. All of these patients were educated either of high school or of college level.

8. Derealisation

Nine (12.84%) patients had this symptom. Six of them were males. They were definitely disturbed by this phenomenon as they knew that something was wrong with them.

9. Depersonalisation

Sixteen (22.84%) patients had this symptom. Out of all males, 23.78% patients had this problem. Most of them (seven) had the feeling of change of whole body appearance. In two patients, it was related to only the head region. Four of these sixteen patients had to confirm about their appearance in the mirror.

10. Delusional mood

Fourteen (20%) of them were in delusional mood. Both males and females constituted 50% each of the total patients. Nine of these patients belonged to the age group of 21-30 years.

11. Changed perception

Twelve (17.14%) patients had the feeling that things look or sound or taste or smell differently. Out of these, four (5.71%) had changed perception of people in the neighbourhood. One male patient had the changed perception of self in a puzzling way.

12. Lost emotion

Eighteen (25.71%) patients complained that they had lost their emotions in some way; out of these, two

patients found them to be out of any emotional feeling. Only three patients could narrate that for the ailment, their emotional component had been reduced.

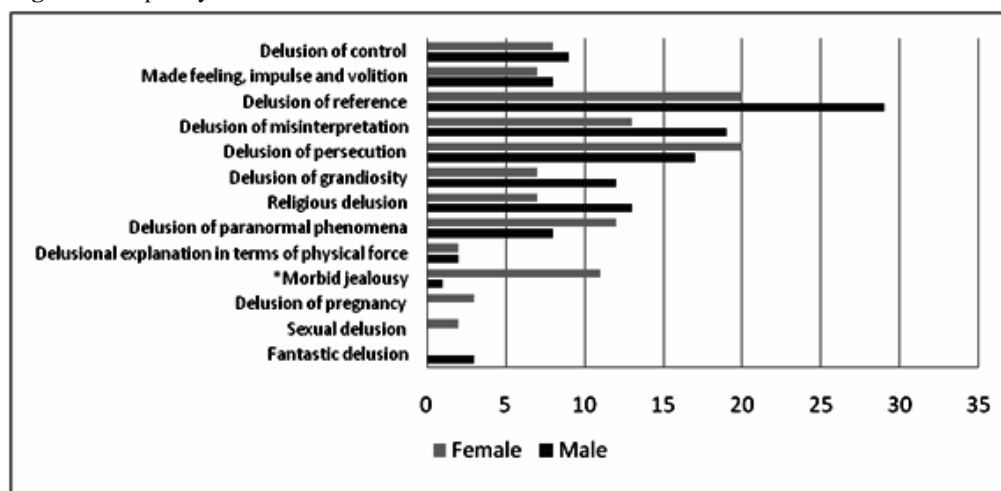
13. Auditory hallucination

Forty (57.14%) patients complained of having auditory hallucinations. Twenty of them were males. Forty five percent came from urban areas. Ten patients had nonverbal auditory hallucination like muttering of voices, hearing footsteps, musical tone etc. One patient found himself constantly followed by a motor car whenever he got out of his home.

Out of 40 patients, 51.42% could make out the voices. Five patients found the voices to be pleasant while five of them to be unpleasant. The different voices perceived as are persecutory (six), God's (four), neighbour's (four), dead person's (three), friend's (two), animal's (two) and unknown (15).

One female patient heard a constant unknown voice inviting her for sex. Twenty patients could hear the voices arguing or discussing about them. Out of these, 13 patients were married. Eight of them came from urban areas. Four

Figure 3 Frequency of distribution of different forms of delusions



*calculated $z = 25.37 > 1.96$ ($p < 0.05$)

patients heard only a single voice commenting upon their activities. Seventeen patients (24.28%) heard several voices commenting upon their activities. They were commenting mainly upon patients' characters (eight) and activities (two). Seven patients could carry on a two way conversation with the voices. Ten percent patients had pseudohallucinations.

14. Visual hallucinations

Thirty four (48.57%) patients had visual hallucination, out of which 14 were males. A greater number (61.76%) of them came from rural areas. The patients identified the visions as of God (ten), dead person and ghosts (six), snakes (five), naked figures (three) and animals (one).

15. Olfactory hallucinations

Fifteen (21.42%) patients complained of having olfactory hallucinations, seven were males. Sixty percent of them came from urban areas. The smells were related to dead body or dead animals in three and related to perfume and incense in four patients; one female patient got smell of semen wherever she went. In case of olfactory reference syndrome or persons complaining that they themselves smell, one female patient complained that as she was sprayed with a bad perfume by somebody unseen, so she gave that smell.

16. Tactile hallucination

Sixteen (22.84%) patients had tactile hallucinations; most of them were related to sexual organs. Five patients complained that their private parts were touched by unseen figures. Two male patients complained that God in disguise of animals or insects were sucking away their vital force or semen from them. A higher percentage of females (87.5%) had the hallucinations of touch.

17. Gustatory hallucinations

Only two (2.85%) persons had gustatory hallucinations. They suspected it to be poison in food and so they avoided the foods.

18. Delusion of control or somatic passivity

Seventeen (24.28%) patients had delusions of being controlled by God (13), ghosts (three) or by a witch (one). Out of these, nine were males. Sixteen (94.12%) of them were educated patients.

19. Delusion of control made volition

Fifteen (21.4%) patients complained of delusion of control, they thought that all their feelings, impulses and volitions were controlled by outside forces. Eight of them were males. Rural and urban patients almost equally showed this delusion (8:7).

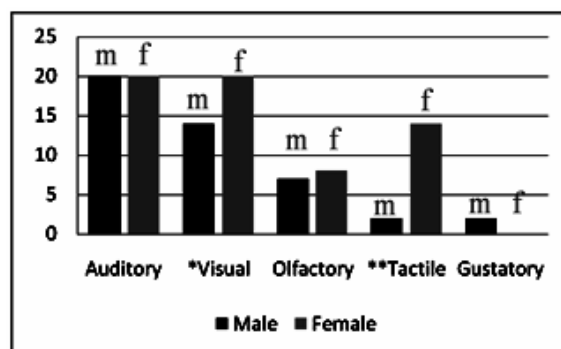
20. Delusion of reference

Forty nine (70%) had this delusion, 59.18% were males. This delusion of reference was made in most patients by neighbours and villagers (55.1%). Unknown people gossiped about their character in 19 patients. These patients had the feelings that people gossip about them with the intention of doing harm.

21. Delusion of misinterpretation

Thirty two (45.71%) patients had delusion of misinterpretation that people follow and check upon their activities. Most of the followers were neighbours or villagers (nine).

22. Delusion of persecution



*calculated $z = 0.983 < 1.96$ ($p > 0.05$),

**calculated z value = $1.61 < 1.96$ ($p > 0.05$)

Figure 4 Frequency of distribution of different forms of

Thirty seven (52.85%) patients had delusion of persecution. 51.35% were males. Twenty patients were single. Majority belonged to the age group of 21-30 years (59.48%) followed by 31-40 years (21.62%). Sixteen patients came from urban background. The chief persecutors were villagers or neighbours (12), family members (eight), in-laws (six) and fiancée (two). In most cases, the persecutors wanted to kill the patients. In-laws being described as their persecutors were found in six female patients.

23. Delusion of grandiosity

Nineteen (27.14%) patients had this delusion; out of them, ten were males. 47.37% patients belonged to the age group of 21-30 years, followed by 31.37% in 31-40 years. Most of the patients (52.63%) identified themselves to be God or as a part of God.

24. Religious delusion

Twenty (28.57%) patients had this delusion; out of them, 13 (65%) were married. 58% patients belonged to the rural areas. All of these patients identified to be very close to God or to be possessed by God.

25. Delusion of paranormal phenomena

Twenty (28.57%) patients had the belief that something supernatural was going on around them. Ten patients identified it to be black magic done on them; the rest ten patients attributed it to be the action of the Almighty or occult. Four patients identified that evil spirits were harming them.

26. Delusional explanation in terms of physical force

Four (5.71%) patients had this delusion. Two students attributed it to be effect of sunrays and two patients attributed it to be wireless message. All of them were male patients in the age group of 21-30 years.

27. Morbid jealousy or delusion of infidelity

Twelve (17.14%) patients had this delusion of infidelity; out of them, nine were females having delusion of infidelity of their husband. Five of these nine women had the belief that their husbands had extramarital relationships with several women. Seven women were of the age group of 31-40 years and two patients were above 40 years of age. Only in two female patients the minimum age was 29 years.

28. Delusion of pregnancy

Three (4.28%) patients had delusion of pregnancy. All of them were married females. Two of them were without any issue and the third was a mother of two daughters and

desperately wanted a male baby.

29. Sexual delusion

Two (2.85%) patients, both females, had delusion with sexual content. One of them had delusion of having sex with a snake, the other found several figures of males and females having sex with her.

30. Fantastic delusion

Three (4.28%) patients had fantastic delusions, two of them were males. One male found Goddess Kali in the disguise of a lizard sucking his semen to spray it on another planet to create a new world and he would be the sun there. Another male was guided by two gems inside his head to do the right things. The gems were actually the disguise of two Gods. The female patient found several male and female figures entering her body through her vagina to have sex with her. She was a separated woman.

First rank symptoms (figures 2a and 2b): Out of all the first rank symptoms, not a single patient had all the symptoms. In one patient only, six symptoms were found; in six patients, there were four symptoms. Nine patients had three, six patients had two and four had one first rank symptom. The ratio of distribution of first rank symptoms among male and female patients was 1.6:1.

Delusions: Except the symptom of morbid jealousy, no other type of delusion showed any significance in relation to number and sex (figure 3).

Hallucinations: Out of all the different types of hallucinations, no significance could be elicited between type of hallucination and sex of the patients (figure 4).

Discussion

PSE was selected as it covers the maximum range of diagnostic criteria of any psychiatric ailment. It is a standardised tool for diagnosis and studies like that of International Pilot Study of Schizophrenia (IPSS)[3] also used it. From the IPSS, it has been confirmed that PSE can be used as a diagnostic tool in any Indian setting.

Sociodemographic characteristics

Slightly higher percentage of male is not significant as the general population pattern in our country shows male predominance. When Bleuler[4] first published his classic study of dementia praecox and renamed the illness as schizophrenia, the monograph included 618 patients in Burgholzli Clinic, Zurich. Statistical analysis of his cases by Loranger[5] found that the mean age of onset of the male patients was 3.7 years earlier than that of the female patients ($t=5.27$, $p<.001$). Our study showed a close approximation of the age of onset although males showed a comparatively earlier age of onset. In Loranger's study,[5] the mean age of onset for the male was five years earlier than that of the females. He found nine out of ten male patients, compared with only two of three female patients, became schizophrenic before the age of 30 years. In the study by Padmavathi et al.,[6] they found a higher rate in males. The mean age of onset in males was 26.55 ± 8.9 and that of females was 27.4 ± 9.8 years. This study was almost similar to our present study. This was in contrast to the studies by Dube[7] and Nandi et al.[8]. Nandi et al.[9] observed higher prevalence

in females and explained the possible cause to be biological rather than culturally based.

In our study, 70% patients were below the age of 30 years. In females, 37.50% patients were above the age of 30 years but in males, it was only 23.78%. Loranger[5] in his study found that the onset of psychosis after the age of 35 years occurred in 17% of women and only in two percent of men. However the paranoid patient has a significantly later onset than the nonparanoid of the same sex. In the present study, 12.5% of female patients were above the age of 40 years. In the recently concluded Factors Associated with the Course and Outcome of Schizophrenia (FACOS) study,[10] more than half of the patients were below the age of 30 years. In the IPSS,[3] 75% of the patients were below the age of 35 years, the highest proportion of males was in the age group of 25-34 years in Agra, London, Ibadan, Moscow and Prague. Also the highest proportion of females was in this age group in Agra and Ibadan; this was similar to our study also. Bhaskaran[11] also showed that maximum patients were in the age group of 20-30 years in both sexes.

Marital status and schizophrenia: The influence of marital status in the incidence of schizophrenia is of interest to the psychiatrist. It has been generally accepted that the marriage rate is significantly lower for patients with schizophrenia than for the general population, a tendency that is more marked for men than women, which goes along with our findings. Interestingly in the IPSS,[3] there were more married patients than single in both sexes in Agra, Ibadan, Moscow and Washington. In Bhaskaran's study,[11] single males constituted the highest percentage of patients which was similar to our findings.

Religious distribution: In our study, 80% patients belonged to Hindu community. This is not a significant finding as the area of study was predominantly Hindu domination area (total population of Assam=146.25 lakhs, Hindu=72.51%, Muslim=24.56% and Christian=2.61% as per 1971 Census, Government of India; there was no Census in Assam in 1981).

Education status: Illiterates constituted only 11.43% of the total patients. This does not bear much significance because the data were collected only from hospital based patients, it did not reflect the picture of the general population. Moreover the families coming for treatment were education oriented and did not adhere to the old beliefs and customs. This goes in contrast to the study of Padmavathi et al.[6] who found higher prevalence of patients in those with no schooling. Verghese et al.[12] and Mehta et al.[13] found a higher prevalence rate in those with no schooling or with only primary education. In the IPSS,[3] illiterates constituted 38.6% which was in contrast with our findings. In the FACOS study,[10] 26.2% patients had no schooling.

Place of residence: In the present study, 55.71% patients were from the rural area; this is significant, because population wise rural population surpasses the urban population (according to 1971 Census, urban:rural population was approximately 1:10). In the FACOS study,[10] in Madras predominantly urban (72%) patients were there, in Vellore rural (55%) patients dominated while in Lucknow equal distribution of rural and urban patients were seen.

Income: In the FACOS study,[10] Madras and Vellore had considerably more lower socioeconomic group while Lucknow had more patients belonging to middle income group. In the IPSS,[3] 40% belonged to average income group (high 12%, average 40%, low 46%) which was similar to our findings. In our study low percentage in higher income group might be due to that in higher income group they preferred private treatment.

Occupation: In the IPSS (Agra),[3] students, housewives, pensioners and unemployed constituted the larger group of 69%. Professional constituted only nine percent of total cases. So the finding of this study is in contrast to that of the IPSS. A higher prevalence rate was found by Padmavathi et al.[6] in their study in slum areas, in those living alone, in those with no schooling and in unemployed groups.

Family type: Higher percentage of cases belonging to both sexes came from nuclear families (68.58%). In the FACOS study[10] also, higher percentage of cases belonged to nuclear families in all the centres. This may be explained by the fact that the traditional way of joint family system is gradually going down in our society from what it was before.

Birth order and schizophrenia: A study from USA by Farina et al.[14] on the problem of birth order and schizophrenia, it was found that more patients were born in the last than the first half of the birth order. The tendency was also seen in large families of five or more children and also for the females than for the males. In UK, Granville-Grossman[15] found no association between birth order and schizophrenia in female patients but found over representation of later born and last born males with schizophrenia. In our study, only 21.5% of male patients belonged to the last child group.

Premorbid adjustment: It is possible that schizophrenia may have “switched on” earlier in more aggressive or non-adjustable personality. Approximately 25-50% of patients of schizophrenia do have premorbid behavioural or personality abnormalities.[16] In the FACOS study,[10] 54% patients were well adjusted during their adolescence, 11% had transient or persistent problems as adolescents, 36% showed preference for solitude and another 36% had difficulty in making friends.

Psychological stressor as a possible predisposing factor: In a disease such as schizophrenia, it is necessary to observe great caution in inferring a connection between the onset and an apparent precipitating factor. In some cases which have been considered to be a mental trauma will on close observation prove to be a consequence of the illness than a cause. Bhaskaran[11] in his study found the commonest precipitating factors in male patients were failure in examination and frustration in occupation whereas childbirth and disharmony or disappointment in marriage were the commonest precipitating factors in females. In our study, 18.42% male patients had the presence of a stressor; out of which, frustration in occupation dominated. Failure in examination was found only in one patient. In females, marital disharmony and maltreatment by in-laws were the prime factors in seven (66.67%) out of nine patients with precipitating factors. Out

of them two were separated from their husbands. In both the cases husbands abused alcohol.

Phenomenology

First rank symptoms: We made an attempt to study the various FRSS with their percentage frequencies in schizophrenia. Out of the total 70 patients, 26 (37.14%) patients had one or more FRSSs. The ratio of male to female patients having FRSSs was 1.6:1. Eight FRSSs were studied; out of which, auditory hallucinations in the form of voices arguing (28.57%) and voices commenting (24.28%) top the list. Somatic passivity and made volition came next to them (24.28% and 21.42% respectively). Thought broadcasting was found in 15.71%, though withdrawal in 12.84% and thought insertion in 11.42% patients. Audible thoughts were present only in 5.71%.

Mellor[17] investigated 173 patients with one or more FRSSs. The incidence of each symptom was low, ranging from 21.4% for thought broadcasting to 2.9% for made impulses. The incidences in his study were: audible thoughts (11.6%), voices arguing (13.3%), voices commenting (13.3%), somatic passivity (11.6%), thought broadcasting (21.4%), thought insertion (19.7%), thought withdrawal (9.8%), made affect (6.4%), made impulse (2.9%), made volition (9.2%), delusional perception (6.4%). This study did not tally with our study in percentage frequencies of all the FRSSs.

In the study by Gureje and Bamgboye[18] on Nigerian patients, the prevalence of FRSSs was 73%. An earlier study of FRSSs prevalence among Nigerian patients found a prevalence of 63%.[19] All these studies showed a comparatively high prevalence than our present study. IPSS in Agra showed a prevalence of 47% of one or more FRSSs.[3] Raguram[20] also found a prevalence rate of 53.3% of FRSSs in his study. This wide range was apparent in IPSS as well—Moscow (31%), India (47.7%) and UK (76%).[19] So it is apparent that the percentage frequencies of FRSSs in different centres vary significantly.

Gureje and Bamgboye[18] found higher frequency of made volition (39%) and thought insertion (34%). Their frequency of voices commenting (34%) and voices arguing (27%) was close to our findings. In a study of 112 patients with schizophrenia using PSE, Kulhara et al.[21] found delusions of control being the commonest, followed by third person auditory hallucinations (voices arguing) and thought insertion. They found higher occurrence of FRSSs than that seen in IPSS from Agra but less than in patients from Washington DC and London.[3] They found thought echo, commentary and thought block/withdrawal in less frequency.

In the study of FRSSs using Feighner criteria,[22] Raguram[20] found the distribution in a total of 30 patients as follows: audible thoughts (ten per cent), voices arguing (23.3%), voices commenting (ten per cent), somatic passivity (20%), thought withdrawal (30%), thought insertion (30%), thought broadcasting (33.3%), delusional perception (6.6%), made feelings (6.6%), made volitional acts (6.6%), made impulse (6.6%). Compared to his study, in our series there was very less percentage in thought insertion, withdrawal or broadcasting phenomena but almost equal percentage in audible thoughts, voices arguing and comment-

ing and somatic passivity phenomena.

In our study, no statistical significance was found in distribution of FRSs in relation to sex. Not a single patient had all the FRSs studied. Only in one patient, six FRSs were found. In six patients, four symptoms were elicited. Nine patients had three FRSs, six patients had two FRSs and four patients had one FRS. Of the 30 patients studied by Raguram,[20] 16 were found to have one or more FRSs; of these 16 patients, 12 were diagnosed as paranoid schizophrenia. It was observed that thought broadcasting, thought insertion and thought withdrawal were the three most frequently occurring FRSs in his study. Schneider[23] had attached equal importance to all FRSs and the studies by Koehler,[24] Mellor[17] and Carpenter[19] revealed little differences in the frequencies of occurrence of individual FRSs which did not conform to our present study.

In the IPSS,[3] percentages of schizophrenia with only one FRS was 61%, with two FRSs 45% and any three FRSs was 31%. In our study, we found only 26 out of 70 patients having one or more FRSs and hence the significance of FRSs in diagnosing schizophrenia is controversial. We also found that patients with FRSs might have more than one, even up to six FRSs together. So this group can be studied separately for future evaluation and association of other factors.

Study of delusions: In the present study, different types of delusions in relation to number and sex were studied. Delusions of reference topped the list. Twenty nine male and 20 females had this delusion. Most patients described their neighbours and villagers to be gossiping about them and related persecutory ideas to be expressed by the gossipers. Kulhara et al.[21] found 73.5% patients having delusions of reference which tally with our findings. They also found that educated and married patients had more delusions of reference than single patients. There is no tangible explanation for this. In our study, almost equal percentage of married and single patients had delusions of reference; but more than 66% patients were educated, which was similar to the finding of Kulhara et al.[21] They also found that educated patients had more delusional misinterpretations and delusions of thought being read.

Males had more persecutory delusions. Single patients outnumbered the married. Only the female patients described their in-laws to be persecutors. In the study by Bhaskaran,[11] delusions were found in 71.4% of male patients, but only in 47.1% of female patients. Persecutory delusions were the most frequent in both sexes. The persecutors were elder brother, father, wife, superior officers and community at large in order of frequency in males; in females, they were husbands, sister-in-law, brother-in-law, mother-in-law and neighbours in order of frequency. In the series of 112 patients, Kulhara et al.[21] found that delusions of persecution were the commonest, being present in 84.6% patients. They also found that the male patients had more delusions of persecution which was in agreement with the findings of Lucas et al.[25] Most of the patients were above 30 years of age.

In our study, persecutory delusion was more common in lower income group and rural patients, which may conform to their cultural beliefs mainly. Kulhara et al.[21] found

that educational level of the patients appear to have curious influence on the type of delusions. Delusion of reference, delusional misinterpretation and delusions of thought being read were seen significantly more in better educated patients. It could be argued that these patients had better linguistic competence and as such could elaborate and express delusions in a better way. Varma et al.[26] argued that higher linguistic competence was one of the important factors that led to sustenance and further systematisation of paranoid delusions.

Kala and Wig[27] revealed the commonest delusional theme to be of murder, assault, violence etc. Lucas et al.[25] found that fear and violence are the commonest theme of delusions wherever they had been studied. It seems that Indians, like people in great many other cultures, structure their environment in terms of fear and violence and that such symbols are of predominant importance in defining of interpersonal relationship and achievements of identity. In the study of Mahajan,[28] 78% patients had persecutory delusions which was more among low socioeconomic group. He found no relation of persecutory delusions to sex, marital status, education, religion, family size and position in the family.

The percentage of females having grandiosity (47.37%) was quite high. In general, the occurrence of grandiosity in females is low. More patients were from rural areas (57.9%). Lucas et al.[25] found grandiose delusions in 41% males and 47% of female patients. This was similar to our observation. Bhaskaran[11] found the delusions of grandeur were less common in women. He tried to explain the differences on the basis of sociocultural factors governing the rearing of boys and girls in our culture. As compared to the western culture, the sociocultural factors influencing the developmental trends from childhood to adulthood differ in the two sexes in our culture. This in turn produces differences in the personality make up, value orientations, social attitudes and social behaviour of the two sexes.

Kulhara et al.[21] found that delusion of grandiose abilities were in 19.3%, delusion of grandiose identity in 15.3% and religious delusions were seen in 14.3%. In the study of Mahajan,[28] delusion of grandeur was in 47% patients. Mostly they were from high status group who magnify themselves through delusions of grandeur. Bhaskaran and Saxena[29] found the relation of delusion of grandeur among male and female patients with schizophrenia to be significant. Delusion of grandeur was of lesser frequency in women because of the lower educational achievements of women as compared to that of the males. In our study, such educational variation did not exist between the two sexes and so the occurrence of grandiosity rate was similar in both sexes.

In the FACOS study,[10] religious delusion was found in 9.6%, more commonly in women, while Mahajan[28] found 49% patients having religious delusions. Mahajan's study[28] showed that the incidence of religious delusions was highly significant among the Hindu patients, probably due to their orthodox beliefs. Sixty four per cent of the Hindus developed religious delusions as compared to only 24% of the non Hindus. Kulhara et al.[21] found 14.3% patients

having religious delusions. In our study, 65% of the patients with religious delusions were married and of the age group of 25-40 years. Kala and Wig[27] found that patients from villages had their delusions centred around violence on one hand and religion and magic on the other as compared to urban patients who were more concerned with technology in their delusions. Lucas et al.[25] found 18% of males and 24% of females having religious delusions which were quite smaller than our figures.

Sixty five per cent of patients with the delusion of paranormal phenomena belonged to rural communities and from low and middle income group. It has been found that different sociocultural environment engender varied psychopathological patterns. Kulhara et al.[21] found the delusional explanations in terms of paranormal phenomena in 33.7% patients which was similar to our observation. In the study of Kala and Wig,[27] they found younger patients very commonly expressing delusions centred around machines, wireless, telephone, radio, radar and other innovations of technology. Thus while the older generation expressed ideas of religion, magic and ghosts, the younger generation's delusions revolved around innovations of modern world.

God dominated the picture in delusions of being controlled by some outside forces in our observation. This reflects our cultural belief, which was established by Karanth,[30] who found in her work that the concept of god seemed to have an overpowering influence on delusion of schizophrenia. In their work, Kulhara et al.[21] found 29.6% patients having delusion of control which was similar to our findings. Kulhara et al.[21] also found 12.2% of patients having morbid jealousy which was similar to that of us.

Delusion of pregnancy is very rarely found, sometimes it may be found in males also. Kulhara et al.[21] found no cases having this delusion in their study with 112 patients with schizophrenia. In their study with 190 schizophrenia patients with delusion, Kala and Wig[27] found that delusions of women showed a concern with bodily organs and sex more commonly than men (28 out of 44 patients). We do not expect women to talk freely about sex and this difference could just be an example of how delusions are the means of crossing the barriers erected by society. Lucas et al.[25] found a higher incidence of schizophrenic sexual delusions in general in females (55%) than in males (30%); almost about twice in males. The most common sexual delusion reported were false beliefs of imposed heterosexual activity and in women of being married or being pregnant. Men but not women sometimes expressed delusions involving masturbation. In our observation, 4.28% patients had fantastic delusions; all of them were male patients which expressed the bizarre thinking of schizophrenia. In the study by Kulhara et al.,[21] no patient expressed this delusion.

The above discussion on delusion conforms to the belief that delusion and hallucination are very much a part of the fabric of the society in which they occur.[31] But the study by Kulhara et al.[21] observed that only 24% patients were related to have syndrome of subcultural delusions and hallucinations.

Other thought disorders: Thought blocking is the most important disorder of the stream of thought and occurs when

the train of thoughts stops and a new one begins which is not connected with the previous train of thoughts. Thought blocking is one of the specific symptoms to diagnose schizophrenia. Kulhara et al.[21] found delusion of thought being read in 31.68% patients, which was quite higher than that of our study.

In the IPSS,[3] there was a considerable difference in the scores of derealisation between Agra (three) and Washington (45); the corresponding values in the other countries varied between 15 and 31. Compared to the Agra score of three, our study was yielding a high result.

Hallucinations: In the IPSS,[3] 28% patients from Agra had auditory hallucinations while in Cali 46% and in Washington nine per cent patients had auditory hallucinations. In the study of hallucinations and delusions among white and Negro with schizophrenia by Vitols et al.,[32] they found that 35% whites and 57% Negros had auditory hallucinations. Type of residence had no effect upon auditory hallucinations in our study. Mellor[17] found that 13.3% of his patients heard voices arguing and another 13.3% heard voices giving a running commentary. Our figures were comparatively higher. Raguram[20] found 23.3% patients hearing voices arguing which was quite similar to our figure, but only ten per cent patients hearing voices commenting upon their actions which was dissimilar to our figure.

Bhatt[33] found 25% patients experiencing visual hallucinations, which was smaller than our figure. In our study, 35.29% had visions of god in different forms reflecting the cultural influence upon visual hallucinations. Five patients, all in the age group of 21 to 30 years, had visions of snakes and three patients had visions of naked figures. This may be an expression of their unfulfilled sexual desires as in our culture sex is still a taboo among common people.

In India, Bhatt[33] found a high figure of 41.71% patients experiencing olfactory hallucinations which was dissimilar to our findings. Rubert et al.[34] found the smells to be related to perfume, vapour of pine, rose, poisonous gas, gun powder, dogs, various body odours and incense; in five patients, they found burning smells. As in other studies, in our patients not a single case of olfactory hallucination occurred singly. In most patients (seven), it was associated with auditory hallucinations. Rubert et al.[34] found the occurrence of associated auditory hallucination to be equal in number; but in our findings, it was less. Bhatt[33] found 8.3% patients having tactile hallucinations. As in other studies, we found that sex and body organs occupied a major place in the delusions of our female patients with schizophrenia and the occurrence of tactile hallucinations related to sex organs may be a reflection of their delusional theme. The occurrence of gustatory hallucinations is usually rare in schizophrenia. In the study of Bhatt,[33] not a single patient had gustatory hallucination.

Hallucinations in schizophrenia occur mostly in clear consciousness, with vividness and moderate intensity and frequency. The content though mostly having a human connotation, sometimes may be connected to extra human elements also. It has been verified that hallucinations in schizophrenia have their root in the immediate environment and mostly in the fantasy beliefs and prejudices of religious-cultural nature.

In summary, male and female ratio was almost the same although males slightly outnumbered females. Subjects were mostly in the age group of 21 to 30 years. Almost equally hailed from both urban and rural areas and were predominantly from lower and middle socioeconomic classes. Seventy percent of the subjects were educated either at high school or college level; more than half of the patients were unmarried, coming mostly from nuclear families. There were almost equal distribution of employed, unemployed and students in the occupational groups. The phenomenology was studied under three headings: First rank symptoms, types of delusions and hallucinations. Twenty six patients had first rank symptoms. Auditory hallucinations in the form of voices arguing and voices commenting topped the list followed by somatic passivity and volitional acts. Audible thoughts were the most infrequent ones. Delusions of reference scored highest. Delusions of persecution and misinterpretation were next followed by religious and grandiose delusions. Delusions of pregnancy, sexual and fantastic delusions scored the minimum. In morbid jealousy or delusion of infidelity, females outnumbered males. Auditory hallucinations were highest among the hallucinations followed by visual, tactile, olfactory and gustatory hallucinations. In tactile hallucinations, the percentage frequency was quite high in females.

Limitations

As the study was restricted only to the outpatient and inpatient departments of psychiatry, so this study may not reflect the exact picture of thought and perceptual disorders in schizophrenia in the community at large. The subject of discussion, i.e., thought and perceptual disorders in schizophrenia, is a vast one, so the study was restricted only to certain selected questions adapted from PSE.[2] It has been observed from the study that paranoid delusions topped the list. This could have been more useful by using a separate questionnaire for paranoid—nonparanoid grouping and evaluation of the patients. In our study, as no definite premorbid adjustment scale was used, attendants' version of the premorbid adjustment was only noted which might be biased.

Conclusions

FRSs were at variance compared to the figures studied in India as well as abroad. So this group can be studied separately in future work to find out the prevalence of FRSs in regard to schizophrenia in this region. In both the phenomena of delusions and hallucinations, sociocultural factors played the primary role which is also established in other Indian studies. This study is a proof to the 'universality' theory of schizophrenia in relation to its phenomenology in this part of the country also. A comparative study of the different aspects of delusions and hallucinations can be made using this questionnaire among different groups of people of Assam for their wide variations in sociocultural and ethnic values.

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