

Thought, Language, Communication disorder in schizophrenia – type, prevalence and differences between acute and chronic cases

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Abstract

Background: Schizophrenia has various types of language behaviours. Andreasen proposed a scale for the assessment of thought, language and communication and conducted a study in 1979. After that studies are scarce in that area. Especially in Tamil Nadu (India) no such studies have been done so far. **Aim:** In this study, the type, prevalence and severity of thought, language, communication disorder in schizophrenia and difference between acute and chronic cases were to be examined. **Materials and methods:** A total of 100 patients (50 acute episode of schizophrenia and 50 chronic schizophrenia cases (in-patients > 2 years duration) were examined with Semi structured schedule. **Results:** The prevalence of pressure of speech, derailment, incoherence, poverty of content, loss of goal were most common. This was followed by Poverty of speech, tangentiality, illogicality, circumstantiality. The least common were blocking, neologism, clanging, word approximation, perseveration, self reference. There was also a significant difference between acute and chronic schizophrenia. Pressure of speech, clanging were more predominant in acute schizophrenia. Poverty of content, incoherence were more common in chronic schizophrenia. Comparing acute and chronic paranoid schizophrenia, poverty of content was increased in chronic paranoid schizophrenia. Comparing acute and chronic non paranoid schizophrenia, Pressure of speech was more in acute non paranoid schizophrenia. **Conclusion:** In this study, there was significant findings in thought, language and communication disorder regarding prevalence, type, severity and differences among acute and chronic cases of schizophrenia were found.

Keywords: schizophrenia, thought language communication disorder.

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Introduction

Human beings are equipped with power of meta cognition i.e the ability to observe ourselves in the act of thinking. Crow (1997) stated that Schizophrenia is the price, Homo sapiens pay for language. Schizophrenia's incidence and features are standard across various population regardless of social, economic and natural environment. It leads towards its genetic origin[1]. Varma (1982) stated that Schizophrenic thought was expressed via language. He told linguistic competence is important to develop a delusional system. Varma et al (1985) stated that language contribution in thinking process is immense and brain abnormalities leads to derailment in thinking and perpetuate psychopathology[2-4].

In Bleulerian psychiatry, the pathognomonic symptom of Schizophrenia is thought disorder[5]. But it has no standard and widely agreed definition. Concept of formal thought disorder is treated as unitary, but it has various different language behaviour. They are conceptually divergent. All are not present in same patient. So a scale is needed which has definition of linguistic and cognitive behaviour which was frequently observed in patients (Andreasen NC 1979a)[6-10]. Nancy Andreasen invented a scale for the assessment of thought, language and communication disorder.

(Andreasen NC 1978)[11]. She also conducted a study in 1979, describing the various types of thought disorders[12-14].

Based on this Mazumdar et al. did a study on the same in 1987 at NIMHANS, Bangalore. They studied the type, nature and prevalence of thought, language, communication disorder in Schizophrenia (Mazumdar P.K, 1987)[15-17]. After that studies were done rarely especially Tamil Nadu. This study examined the type, prevalence and severity of thought, language and communication disorder in Schizophrenia and difference between acute schizophrenia and chronic institutionalised patients of Schizophrenia at Institute mental health, Chennai, Tamil Nadu.

Materials and Methods

This cross sectional study was conducted in Institute of Mental health, Madras Medical College, Chennai, a tertiary care centre for Tamil Nadu. A total of 100 patients (50 acute schizophrenia patients and 50 chronic schizophrenia patients) were taken. Acute schizophrenia patients were those who were within the first week of admission. Chronic patients were those who were in-patients for more than 2 years. Inclusion criteria: patients with Schizophrenia diagnosed as per ICD 10, Age between 18 – 50 years, Both sex. Exclusion criteria: Patients with epilepsy, Organic mental disorder, Patient with physical illness, mental retardation, Substance abuse.

Semi structured schedule was developed to collect data regarding Socio demographic details, Disease related characteristics, ICD-10 for diagnosing schizophrenia. Scale for assessment of thought, language and communication (TLC) (Andreasen 1978)

Details were statistically analysed using SPSS 20 software. Significance level was fixed as 5% ($\alpha = 0.05$).

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Results

Table 1: 18 TLC* items and its frequency

TLC items	IMH* study	
	No.	Percentage
Neologism	10	10%
Word approximation	2	2%
Clanging	4	4%
Poverty of speech	27	27%
Poverty of content of speech	39	39%
Illogicality	17	17%
Pressure of speech	48	48%
Circumstantiality	16	16%
Tangentiality	24	24%
Derailment	47	47%
Incoherent	41	41%
Loss of goal	34	34%
Distractibility	0	0%
Perseveration	1	1%
Self-reference	2	2%
Stilted speech	0	0%
Echolalia	0	0%
Blocking	2	2%

Table 2: 18 TLC variables frequency (with percentage) in acute and chronic schizophrenia (total 100)

		Duration of illness				P value
		Acute		Chronic		
		Count	Row N %	Count	Row N %	
Neologism	Yes	6	60.0%	4	40.0%	.566
Word approximation	Yes	1	50.0%	1	50.0%	1.000
Clanging	Yes	4	100.0%	0	0.0%	.042*
Poverty of speech	Yes	13	48.1%	14	51.9%	.943
Poverty of content	Yes	14	35.9%	25	64.1%	.011*
Illogicality	Yes	11	64.7%	6	35.3%	.187
Pressure of speech	Yes	34	70.8%	14	29.2%	.001*
Circumstantiality	Yes	8	50.0%	8	50.0%	.833
Tangentiality	Yes	15	62.5%	9	37.5%	.312
Derailment	Yes	21	44.7%	26	55.3%	.194
Incoherent	Yes	15	36.6%	26	63.4%	.022*
Loss of goal	Yes	18	52.9%	16	47.1%	1.000
Distractibility	Yes	0	0.0%	0	0.0%	--
Perseveration	Yes	2	33.3%	4	66.7%	.320
Self-reference	Yes	0	0.0%	1	100.0%	1.000
Echolalia	Yes	0	0.0%	0	0.0%	--
Blocking	Yes	1	50.0%	1	50.0%	1.000
Stilted speech	Yes	0	0.0%	0	0.0%	--

Table 3: 18 TLC variables frequency (with percentage) in paranoid and non-paranoid schizophrenia (total 100)

		Schizophrenia type				P value
		Paranoid		Non Paranoid		
		Count	Row N %	Count	Row N %	
Neologism	Yes	5	50.0%	5	50.0%	.098
Word approximation	Yes	2	100.0%	0	0.0%	.042*
Clanging	Yes	4	100.0%	0	0.0%	0.003*
Poverty of speech	Yes	3	11.1%	24	88.9%	.012*
Poverty of content	Yes	9	23.1%	30	76.9%	.044*
Illogicality	Yes	11	64.7%	6	35.3%	.002*
Pressure of speech	Yes	26	54.2%	22	45.8%	.001*
Circumstantiality	Yes	8	50.0%	8	50.0%	.047*
Tangentiality	Yes	10	41.7%	14	58.3%	.140
Derailment	Yes	8	17.0%	39	83.0%	.001*
Incoherent	Yes	6	14.6%	35	85.4%	.001*
Loss of goal	Yes	9	26.5%	25	73.5%	.280
Distractibility	Yes	0	0.0%	0	0.0%	--
Perseveration	Yes	2	33.3%	4	66.7%	.823
Self-reference	Yes	1	100.0%	0	0.0%	.155
Echolalia	Yes	0	0.0%	0	0.0%	--
Blocking	Yes	0	0.0%	2	100.0%	0.321
Stilted speech	Yes	0	0.0%	0	0.0%	--

Table 4: 18 TLC variables frequency (with percentage) in acute and chronic paranoid schizophrenia

		Duration of illness				P value
		Acute		Chronic		
		Count	Row N %	Count	Row N %	
Neologism	Yes	3	60.0%	2	40.0%	.068
Word approximation	Yes	1	50.0%	1	50.0%	.472
Clanging	Yes	4	100.0%	0	0.0%	.203
Poverty of thought	Yes	3	100.0%	0	0.0%	.285
Poverty of content	Yes	3	33.3%	6	66.7%	.002*
Illogicality	Yes	7	63.6%	4	36.4%	.423
Pressure of speech	Yes	21	80.8%	5	19.2%	.243
Circumstantiality	Yes	4	50.0%	4	50.0%	.052
Tangentiality	Yes	6	60.0%	4	40.0%	.276
Derailment	Yes	6	75.0%	2	25.0%	.873
Incoherent	Yes	4	66.7%	2	33.3%	.841
Loss of goal	Yes	6	66.7%	3	33.3%	.342
Distractibility	Yes	0	0.0%	0	0.0%	--
Perseveration	Yes	1	50.0%	1	50.0%	.472
Self reference	Yes	0	0.0%	1	100.0%	.103
Echolalia	Yes	0	0.0%	0	0.0%	--
Blocking	Yes	0	0.0%	0	0.0%	--
Stilted speech	Yes	0	0.0%	0	0.0%	--

Table 5: 18 TLC variables frequency (with percentage) in acute and chronic non-paranoid schizophrenia

		Duration of illness				P value
		Acute		Chronic		
		Count	Row N %	Count	Row N %	
Neologism	Yes	3	60.0%	2	40.0%	.620
Word approximation	Yes	0	0.0%	0	0.0%	
Clanging	Yes	0	0.0%	0	0.0%	
Poverty of content	Yes	10	41.7%	14	58.3%	.608
Poverty of thought	Yes	11	36.7%	19	63.3%	.464
Illogicality	Yes	4	66.7%	2	33.3%	.147
Pressure of speech	Yes	13	59.1%	9	40.9%	.025*
Circumstantiality	Yes	4	50.0%	4	50.0%	.505
Tangentiality	Yes	9	64.3%	5	35.7%	.085
Derailment	Yes	15	38.5%	24	61.5%	.773
Incoherent	Yes	11	31.4%	24	68.6%	.200
Loss of goal	Yes	12	48.0%	13	52.0%	.338
Distractibility	Yes	0	0.0%	0	0.0%	--
Perseveration	Yes	1	25.0%	3	75.0%	.461
Self reference	Yes	0	0.0%	0	0.0%	
Echolalia	Yes	0	0.0%	0	0.0%	
Blocking	Yes	1	50.0%	1	50.0%	.746
Stilted speech	Yes	0	0.0%	0	0.0%	

Table 6: TLC disorder severity (assessing 18 variables score) in acute schizophrenia (total 50)

	Count	1-2	3-4
		Row N %	Row N %
Neologism	Count	6	0
	Row N %	12.0%	0.0%
Word approximation	Count	1	0
	Row N %	2.0%	0.0%
Clanging	Count	4	0
	Row N %	8.0%	0.0%
Poverty of thought	Count	1	12
	Row N %	2.0%	24.0%
Poverty of content	Count	8	6
	Row N %	16.0%	12.0%
Illogicality	Count	11	0
	Row N %	22.0%	0.0%
Pressure of speech	Count	16	18
	Row N %	32.0%	36.0%
Circumstantiality	Count	5	3
	Row N %	10.0%	6.0%
Tangentiality	Count	10	5
	Row N %	20.0%	10.0%
Derailment	Count	16	5
	Row N %	32.0%	10.0%

Incoherent	Count	7	8
	Row N %	14.0%	16.0%
Loss of goal	Count	15	3
	Row N %	30.0%	6.0%
Distractibility	Count	0	0
	Row N %	0.0%	0.0%
Perseveration	Count	2	0
	Row N %	4.0%	0.0%
Self reference	Count	0	0
	Row N %	0.0%	0.0%
Echolalia	Count	0	0
	Row N %	0.0%	0.0%
Blocking	Count	1	0
	Row N %	2.0%	0.0%
Stilted speech	Count	0	0
	Row N %	0.0%	0.0%

Table 7: TLC disorder severity (assessing 18 variables score) in chronic schizophrenia (total 50)

Neologism	Count	2	2
	Row N %	4.0%	4.0%
Word approximation	Count	1	0
	Row N %	2.0%	0.0%
Clanging	Count	0	0
	Row N %	0.0%	0.0%
Poverty of speech	Count	2	12
	Row N %	4.0%	24.0%
Poverty of content	Count	8	17
	Row N %	16.0%	34.0%
Illogicality	Count	6	0
	Row N %	12.0%	0.0%
Pressure of speech	Count	5	9
	Row N %	10.0%	18.0%
Circumstantiality	Count	3	5
	Row N %	6.0%	10.0%
Tangentiality	Count	3	6
	Row N %	6.0%	12.0%
Derailment	Count	16	10
	Row N %	32.0%	20.0%
Incoherent	Count	10	16
	Row N %	20.0%	32.0%
Loss of goal	Count	9	7
	Row N %	18.0%	14.0%
Distractibility	Count	0	0
	Row N %	0.0%	0.0%
Perseveration	Count	3	1
	Row N %	6.0%	2.0%
Self reference	Count	1	0
	Row N %	2.0%	0.0%
Echolalia	Count	0	0
	Row N %	0.0%	0.0%
Blocking	Count	1	0
	Row N %	2.0%	0.0%
Stilted speech	Count	0	0
	Row N %	0.0%	0.0%

In this study, 100 patients were included. (acute Schizophrenia 50, chronic institutionalized schizophrenia 50). Out of these 100 patients, 52% were male, 48% were female. Paranoid and Non paranoid were 33%, 67% respectively.

Analysis of 18 TLC variables frequency in schizophrenia showed that >30% of frequency were pressure of speech, derailment, incoherence, poverty of content, loss of goal. Poverty of speech, tangentiality, illogicality, circumstantiality accounted for 10-30%, while < 10% accounted for blocking, neologism, clanging, word approximation, perseveration, self reference. Stilted speech, echolalia, distractibility were absent. (Table 1).

Comparison of acute and chronic schizophrenia revealed that pressure of speech, clanging were found more in acute schizophrenia, whereas poverty of content, incoherence were more in chronic schizophrenia (Table 2). Word approximation, clanging, illogicality, circumstantiality were found more in paranoid schizophrenia and poverty of speech, derailment, incoherence, in non paranoid schizophrenia (Table 3). Comparison of acute and chronic paranoid schizophrenia showed that poverty of content was more in chronic paranoid schizophrenia (Table 4). Analysis of acute and chronic non paranoid schizophrenia showed that pressure of speech was more in acute non paranoid schizophrenia (Table 5). Examination of TLC

severity in acute schizophrenia showed that poverty of speech was present as severe, extreme form; Poverty of content, pressure of speech, circumstantiality, incoherence were present as equal severity; Circumstantiality, tangentiality, illogicality, loss of goal, perseveration, word approximation, neologism, blocking were present as mild, moderate form (Table 6). TLC severity in chronic schizophrenia showed that word approximation, illogicality, perseveration, self reference, blocking were found as mild, moderate form; Circumstantiality, poverty of content, poverty of speech, tangentiality, incoherence were found as severe, extreme form; Neologism, loss of goal were found as equal form (Table 7).

Discussion

In Andreasen study (Andreasen 1979b), commonest language behaviour were pressure of speech, tangentiality, derailment, loss of goal, perseveration, poverty of content, followed by poverty of speech, incoherence, circumstantiality, distractibility. Least were clanging, blocking, echolalia, neologism, word approximation. In Mazumdar study, most common type of thought disorder (>50%) in paranoid group were poverty of speech, tangentiality, derailment, loss of goal, perseveration and self reference. Least common (<10%) were pressure of speech, illogicality, clanging, neologism, word approximation, echolalia, blocking and stilted speech. Most common type (>50%) in non paranoid group were poverty of content, tangentiality, derailment, loss of goal and perseveration. Least common (<10%) were illogicality, clanging, neologism, word approximation, echolalia, blocking and stilted speech (Mazumdar et al. 1991). In this IMH study, most common were pressure of speech, derailment, incoherence, poverty of content, loss of goal, followed by Poverty of speech, tangentiality, illogicality, circumstantiality. Least common were blocking, neologism, clanging, word approximation, perseveration, self reference. Stilted speech, echolalia, distractibility not at all present. There was significant difference between acute and chronic schizophrenia. Pressure of speech, clanging were found to be more in acute schizophrenia. Poverty of content, incoherence were more in chronic schizophrenia. Previous studies found no significant differences.

Andreasen and Groove (1986) stated that paranoid, non paranoid had similar pathology but less severe pattern was present in paranoid and gross disorganisation was present in non paranoid. Mazumdar et al. 1991 stated that tangentiality was more prevalent in chronic paranoids. It reflects evasive mode of communication. But this IMH study found significant differences among paranoid and non paranoid. Word approximation, clanging, illogicality, circumstantiality were more common in paranoid schizophrenia and poverty of speech, derailment, incoherence were in non paranoid schizophrenia. In this study Comparing acute and chronic paranoid schizophrenia, Poverty of content were more in chronic paranoid schizophrenia. Comparing acute and chronic non paranoid schizophrenia, pressure of speech were more in acute non paranoid schizophrenia. TLC severity in acute schizophrenia showed that poverty of speech was present as severe, extreme form. Whereas in chronic schizophrenia, circumstantiality, poverty of content, poverty of speech, tangentiality, incoherence were found as severe, extreme form.

Compared with Nancy Andreasen Study (1979, 1986), the pressure of speech was found more commonly in this study (48% in IMH study, 20% in Andreasen study) and perseveration, self reference, echolalia were found to be less. Compared with Mazumdar Study (1988) the pressure of speech was more common in this study (48% in IMH study, 24% in Mazumdar study). But stilted speech, perseveration,

self reference were found less commonly. Poverty of speech was more frequent in Mazumdar study. He attributed this to guarding nature of paranoid patients. But this was not experienced in this study.

Conclusion

In this study, significant differences in prevalence, type, severity of thought, language and communication disorder of schizophrenia were found, also among acute and chronic cases which were not stated in previous studies.

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