

AN EXPLORATORY STUDY OF THE RELATION BETWEEN PSYCHOTICISM AND CERTAIN ASPECTS OF AUDITORY HALLUCINATIONS IN SCHIZOPHRENICS¹

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SUMMARY

30 schizophrenics who met the criteria of Feighner *et al.* and were having verbal auditory hallucination with or without hallucinations of other varieties were chosen for the study. Psychoticism was measured with the help of Eysenck's Personality Questionnaire. The relation of psychoticism scores to different aspects of auditory hallucinations was examined. High psychoticism scores seemed to be associated with a greater number of languages of the voice, known living 'speakers' and less fear and passive listening during the voice.

Psychoticism is the dimension of personality that underlies psychosis (Eysenck & Eysenck, 1976). Slade (1975) found that schizophrenics with auditory hallucinations had more psychoticism scores than non-hallucinating schizophrenics. Psychoticism should be contributing towards a predisposition to auditory hallucinations. But psychoticism scores in schizophrenics are varied and so are auditory hallucinations in them. Variations in psychoticism scores can be expected to be related to variations in auditory hallucinations in schizophrenics. Psychoticism scores were not found to be significantly associated with the experienced reality of voices, intensity and direction of behaviour during the voices and inner voices in schizophrenics (Ramanathan, 1982; 1982b; 1983a; 1983b).

There are many variables associated with hallucinations. Anxiety prior to the voice, reality-testing ability, noise-level of the environment (Slade, 1975), social status (Linn, 1967), associated delusions (Lewinsohn, 1969) and anticipation of the voice (Arieti, 1975) have been described. Variables related to the experienced reality of voices in schizo-

phrenics were discussed earlier (Ramanathan, 1983a). Such variables should be included when one attempts to examine the aspects of auditory hallucinations.

The present study was aimed at examining the relation between psychoticism and different aspects of auditory hallucinations in schizophrenics.

MATERIAL AND METHODS

30 schizophrenics attending the out-patient department of Institute of Mental Health, Madras were chosen for the study. Following were the inclusion criteria :

1. Patient should be schizophrenic according to criteria of Feighner *et al.* (1972).
2. He/she should be currently experiencing auditory hallucinations i. e. the last episode should have occurred 24 hours prior to the interview.
3. He/she should be having verbal auditory hallucinations with or without non-verbal auditory hallucinations and/or hallucinations in other sensory modalities.
4. He/she should not have undergone psycho-surgery.

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5. He/she should not have been treated along with electro-convulsive therapy in the month prior to the interview.
6. He/she should be co-operative for interview and psychological testing.
7. He/she should be an urban resident.

Psychoticism was measured with the help of a Tamil version of Eysenck's Personality Questionnaire (1976). Neuroticism scores, Extraversion scores and Lie scores were recorded along with psychoticism scores.

An interview schedule was constructed and each patient was interviewed with one or more family members in order to elicit reliable information. Socio-demographic variables, intelligence illness variables, various aspects of auditory hallucinations including coping behaviour and treatment variables were recorded. The mean age of the sample was 35.2 years with standard deviation 9.72 years. The mean duration of illness was 7.5 years with standard deviation 6.29 years.

The variables analysed were age, sex-ratio, religion, mothertongue, socio-economic status, intelligence, neuroticism, extraversion and lie scores on Eysenck's Personality Questionnaire, family history of schizophrenia, duration of schizophrenic illness, interval between onset of illness and onset of hallucinations, presence of delusions related to hallucinations, insight into illness, reality testing ability, duration of auditory hallucinations, duration of each episode of auditory hallucinations, number of episodes per day, number of hallucinating days per month, number of languages of the voice, position of voice (within the body, outside the body and within sensory range and outside the body and outside sensory range), time-sense during the voice (fast, slow or usual movement), number of 'speakers' in total, number of 'speakers' per episode, sex of the 'speaker', knowledge of the

'speaker' (known living person, known dead person, unknown person or Gods), social status of 'speaker' (above, below, or equal to that of the patient), content of the voice (talking to the patient, third person, abusing, advising, threatening, running commentary or otherwise), loudness, pitch and clarity of the voice, noise-level of the environment during the voice (specifically low or non-specific), experienced reality of the voice, provoking agents (objects, persons or situations), level of anxiety immediately prior to the voice, interval between the increase in anxiety level prior to the voice and appearance of the voice, effects of physical illness (e.g. fever) on the voice (present or absent), presence of other hallucinations (other modalities and non-verbal auditory hallucinations), interference in self-care, occupation, social activities and leisure-time activities due to the voice, coping behaviour i.e. anticipation of the voice, physical and/or mental activity prior to the voice (manipulation with provoking agents, diverting attention, closing the windows, initiating conversation), active listening, passive listening, talking or shouting back during the voice, diverting attention during the voice, presence of and intensity of sadness, anger or fear during the voice, reacting to the content of voice or to the phenomenon, presence of suicidal ideas, leaning on prescribed drugs, persons or God, increasing leisure-time activities, taking extra dose of neuroleptics, alcohol intake, physical exercise, avoiding situations and meditations, variety and dosage of drugs, administration of electro-convulsive therapy and effectiveness of physical methods of treatment.

Socio-economic status was measured with the help of the scale devised by Gupta and Sethi (1978) which was found to be suitable for hospital psychiatric population (Ramanathan et al., 1983).

Intelligence was measured by Raven's Progressive Matrices. Insight into illness was assessed with the Present State Examination Schedule (Wing et al., 1974). Reality-testing ability was measured by F+% in Rorschach Test, as it is best single indicator of reality testing ability (Carr, 1975). Reality of the voice was assessed by the clinical technique described by Aggernaes et al. (1976). The loudness of the voice was measured using a 3 point scale i.e. 1-3 scores (Whisper-score 1; loudness of ordinary conversation-score 2; shouting-score 3). Clarity of the voice was measured using a 3 point scale i.e. 1-3 scores (incomprehensible-score 1; very clear-score 3; in between-score 2). Pitch of the voice and environmental noise-level during the voice were quantified using 3 point scales i.e. 1-3 scores (low-score 1, average-score 2, high-score 3). Level of anxiety immediately prior to the voice was measured using 4 point scale (Nil-score 0; low-score 1; high-score 3; in between-score 2). The emotional intensity during and outside the voices was scored on 4 point scale i.e. 0-3 scores (Nil-score 0; low-score 1; medium-score 2; high-score 3). Interference due to the voice in daily activities viz. self-care, occupation, social activities and leisure-time activities were quantified using 4 point scales i.e. 0-3 scores. Score 0 indicated absence of interference but not absence of voice during the activity. Score 1 indicated distraction without grossly hampering with the activity. Score 2 was given for distraction leading to delay in completing the act. Score 3 was given if the activity was not completed. Effect of physical methods of treatment on voices was scored on 4 point scale i.e. 0-3 scores. Score 0 indicated no effect. Score 1 indicated reduction of one of the three variables viz. frequency, duration of each episode and unpleasantness of the con-

tent of voice and score 2 indicated reduction in 2 of the 3 variables. Score 3 indicated total suppression of the voices.

The sample was classified based on psychoticism scores and the resultant groups were compared for the variables mentioned above. Chi-square test was applied for 31 variables. The variables that were significantly associated with psychoticism scores were kept as independent variables and stepwise multiple regression analysis (with psychoticism scores as dependent variables) was done using the IBM 370/155 Computer at the Indian Institute of Technology, Madras. The variables that had appreciable linear relation with psychoticism scores were tested for their relation to individual items of psychoticism scale of Eysenck's Personality Questionnaire.

RESULTS

Psychoticism scores ranged between 1 and 13 and 3 groups were sorted out viz. Group-I (P scores 1-3; N=9), Group-II (P scores 4-6; N=11) and Group-III (P scores 7-13; N=10). The 3 groups did not differ among themselves in Neuroticism scores, Extraversion scores and lie scores. There was no inverse distribution of scores on individual items of psychoticism dimension in Eysenck's Personality Questionnaire i.e. Group-I did not have more scores on individual items of psychoticism dimension than the other two groups and Group-II did not have more scores on individual items of psychoticism than Group-III.

The groups sorted out showed differences only in six variables, viz. number of languages of the voice, presence of the voice, presence of known living 'speakers', interference in occupation due to the voice, presence of physical and/or mental activity immediately

prior to the voice, intensity of fear and passive listening during the voice.

Multiple regression analysis was done keeping the above mentioned 6 variables as independent variables and psychoticisms scores as the dependent variable. Extraversions, neuroticism and Lie scores in Eysenck's Personality Questionnaire were also included as independent variables in order to avoid artefacts. So the number of independent variables was 9. The variables which appreciably contributed to the R square value were known living 'speaker', number of languages of the voice, intensity of fear during the voice and passive listening during the voice. Known living 'speaker' and number of languages of the voice were positively related to psychoticism scores which meant that an increase of scores for these two variables was related to an increase in psychoticisms scores. Intensity of fear and passive listening during the voice were negatively related to psychoticism scores. Figures in Table I.

The above mentioned four variables were tested for the relation to individual items of psychoticism scale of Eysenck's Personality Questionnaire. The aggressive items of the questionnaire were not related to any of these variables. The number of languages of voice and passive listening during the voice were related to paranoid items of the psychoticism scale. Those who heard voices in more than one language (N=6) tended to feel that people told them a lot of lies (Mean score 0.6667; SD=0.5164) in comparison to those who heard voices in only one language (N=24; Mean score 0.1667; SD=0.3807) and the difference was statistically significant ($t=2.6833$; $p<.02$). Those who were passively listening during the voice (N=10) did not tend to feel that there were several people who kept trying to avoid them (mean score 0.1; SD=0.3333) in comparison to those who were not passively listening during the voice (N=20; Mean score 0.55; SD=0.5104) and the difference was

TABLE I. *Stepwise Multiple Regression Analysis: Certain variables on Psychoticism scores.*

Dependent variable	Independent variables	Regression co-efficient	Standard error	't' value	R Square	F
Psychoticism Scores	Known living speaker	1.33630	0.96762	1.3810	0.59395	** 5.60713
	Neuroticism score	-0.27063	0.07811	** 3.4647		
	No. of languages of the voice	2.14737	0.86132	* 2.4931		
	passive listening during the voice	-1.14623	0.92591	1.2379		
	Lie scores in EPQ	-0.19632	0.12631	1.5543		
	Intensity of fear during the voice	-0.48166	0.41309	1.1659		
	(Constant)	9.71072				

* $p<.025$

** $p<.01$

statistically significant ($t=2.5205$; $p<.02$).

DISCUSSION

The high scorers on psychoticism would be solitary, troublesome, cruel, lacking in feeling, lacking in empathy, hostile to others, sensation-seeking, liking odd and unusual things and toughminded and would have poor vigilance and high 'creativity' (Eysenck and Eysenck, 1976). Such personality features could explain the aspects of auditory hallucinations associated with psychoticism. Greater number of languages should mean 'creativity'. Known living 'speaker' should be verifiable. 'Hearing' the voice of a known living 'speaker' and believing in it was odd. Less fear and passive listening during the voice associated with high psychoticism scores indicated that the high scores on psychoticism were not feeling helpless and possibly were toughminded. The relation between number of languages of the voice and passive listening during the voice to paranoid items of psychoticism scale suggested that the individual items of the scale were also important.

Psychoticism was found to be heritable and was related to age and sex. It was possibly linked with the androgen/estrogen balance (Eysenck & Eysenck, 1976). The biological root of psychoticism should be related to certain aspects of the phenomenon of auditory hallucination.

The maximum P score obtained by the patients chosen for this study was only 13 i.e. about two-thirds of the possible scores on Eysenck's Personality Questionnaire and it should have been due to the smallness of this sample. It is difficult to generalise the findings of this study. Studies on larger samples should be more informative.

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