

AN EXPLORATORY STUDY ON THE RELATION BETWEEN NEUROTICISM AND CERTAIN ASPECTS OF AUDITORY HALLUCINATIONS IN SCHIZOPHRENICS

A. RAMANATHAN¹

SUMMARY

30 schizophrenics who met the criteria of Feighner et al and were having verbal auditory hallucinations, with or without hallucinations of other varieties were chosen for the study. The relation between neuroticism scale of Eysenck's Personality Questionnaire and different aspects of the voice was examined. Neuroticism scores were positively related to the level of anxiety prior to the voice, anticipation of the voice, intensity of anger during the voice and interference with occupation and social activities of patients by the voice.

Personality dimensions had been reported to be correlated with aspects of auditory hallucinations in schizophrenics (Ramanathan 1984 a, 1984 b, 1984 c). Especially the dimension of neuroticism was found to be related to interference with the activities of schizophrenics by auditory hallucinations and coping behaviours of schizophrenics in relation to auditory hallucinations (Ramanathan 1984b and 1984c). Such findings led the author to explore the relation between neuroticism and the various aspects of auditory hallucinations in schizophrenics.

Material and Method

30 Schizophrenics who attended the out-patient department of Institute of Mental Health, Madras were chosen for the study. The present study belongs to a series and the criteria used have already been described in the previous studies (Ramanathan 1984a, 1984b, 1984c).

Personality dimensions were measured with the help of a Tamil version of Eysenck's personality questionnaire (1976). Neuroticism scores, psychoticism scores, extraversion scores and 'lie' scores were recorded. The mean neuroticism score was 15.8 and standard deviation was 5.4734.

An interview schedule was constructed and each patient was interviewed along

with one more family member in order to elicit reliable information. Socio-demographic variables, intelligence, reality-testing ability, family history of schizophrenia, delusions related to hallucinations, duration of illness, duration of hallucinations, interval between onset of illness and onset of hallucinations, insight, duration of each episode of voice, frequency of episodes, language and position of voice, time-sense during the voice, details of 'speakers', loudness, pitch and clarity of voice, environmental noise-level during the voice, reality and content of voice, anxiety prior to the voice, interval between increase in anxiety level prior to the voice, interval between increase in anxiety level prior to the voice and appearance of the voice, effects of physical illness on the voice, interference with activities (self-care, occupation, social activities and leisure-time activities) by the voice, treatment variables, presence of other hallucinations and coping behaviours were recorded. Interference with the activities of patients by the voice was measured using a 4 point scale i.e. 0-3 scores (no interference - 0; distraction leading to delay in completing the act - 2; inability to complete the act - 3). Intensity of emotions during and outside the voice were measured using 4 point scales i.e. scores (Nil - 0; Low - 1; High - 3; In between - 2). Details of other variables were mentioned

1. Assistant Professor, Institute of Mental Health, Kilpauk, Madras - 600 010.

in the previous reports (Ramanathan 1984a, 1984b).

The sample was classified on the basis of neuroticism scores and the resultant groups were compared for all the variables mentioned above using Chi square test and 't' test. The variables that were statistically significantly associated with neuroticism scores were isolated. In order to find out the linear relations between such isolated variables and neuroticism scores, step-wise multiple regression analysis was done using IBM 370/155 computer. Neuroticism score was the dependent variable and the isolated variables were the independent variables. As neuroticism score cannot be interpreted without scores for other dimensions of personality, psychoticism scores, extraversion scores and 'lie' scores were added to the list of independent variables.

Results

Neuroticism scores in 9 patients were upto 12, in 12 patients the scores were 13 to 18 and in 9 patients the scores were above 18. The three groups did not differ statistically in psychoticism scores, extraversion scores and 'lie' scores in Eysenck's Personality Questionnaire. Patients whose scores were more than 18 had (1) more in-

terference with occupation by the voice, (3) higher level of anxiety immediately prior to the voice, (4) more anticipation of the voice, (5) higher intensity of anger during the voice, (7) higher intensity of sadness during the voice and (8) higher intensity of emotions outside the hallucinatory episodes but concerning the voice in comparison to the other two groups of patients.

In the second stage of analysis, the above mentioned 8 variables, psychoticism scores, extraversion scores and 'lie' scores were treated as independent variables for the purpose of step-wise multiple regression analysis. Neuroticism score was the dependent variable. The results are given in the Table. Interference with occupation by the voice, interference with social activities of patients by the voice, level of anxiety prior to the voice, intensity of anger during the voice and anticipation of the voice seemed to be related to neuroticism score in the positive direction i.e. an increase in the scores for these variables mean an increase in neuroticism score.

Discussion

Neuroticism dimension means nervousness and touchiness (Eysenck 1966). Such features are sufficient to explain the anxiety

Table
Multiple Regression Analysis: Certain Variables on Neuroticism Score

Dependent variable	Independent variables	Regression Co-efficient	Standard error	R Square	F value & level of significance
Neuroticism score	Interference with occupation	1.94462	1.04835	0.52475	3.4701 P < .05
	Anxiety prior to the voice	0.60227	0.90920		
	Anticipation of voice	2.33901	1.72171		
	Lie score	- 0.34223	0.26784		
	Psychoticism score	- 0.46894	0.29862		
	Intensity of anger during the voice	0.49578	0.73059		
	Interference with social activities	0.59070	0.96939		
	(Constant)	18.49775			

prior to the voice, anticipation of the voice and anger during the voice. Neuroticism also means little persistence (Eysenck 1966). Persistence refers to the strength of one's will to continue a given task in spite of stress. The interference with the activities by the voice was possibly due to the lack of persistence on the part of the schizophrenic.

Eysenck & Eysenck (1964) found that schizophrenics fell between normals and neurotics on the neuroticism scale. Claridge (1967) found that the acute psychotics had higher neuroticism scores than normals. The emotional reactions to a psychotic attack result in increased neuroticism scores (Eysenck & Eysenck 1977). The explanation that the increase in neuroticism scores is due to the stress imposed by the developing psychotic illness seems acceptable (Claridge 1967). Al-Issa (1964) reported that the mean neuroticism scores of chronic schizophrenics was very low. This finding suggests that there may be decrease in chronicity (Claridge 1967). The emotional reactions to hallucinations found in acute phase of illness are not found in chronic schizophrenics although the voices are persistent. The suggestion received here is that emotionality and neuroticism scores decrease with chronicity of illness.

The question to be answered is how far auditory hallucinations are stressful to the patient in the early phase of illness. In the present study the aspects of voice like frequency, duration of individual episodes, reality and content were not found to be related to neuroticism scores which are supposed to increase because of the stress imposed. Follow-up studies should be useful in examining the stability or otherwise of the relationship between the aspects of voice and neuroticism scores. Hallucination alone cannot be the source of stress. Hence the other symptoms of schizophrenic illness have to be examined for their relationships to neuroticism.

Acknowledgement

The author thanks Dr. M. Vaidyalin-gam, Superintendent, Institute of Mental Health, Madras for permission to conduct the study. The author is grateful to Dr. P. D. Slade, University of Liverpool for the kind permission to quote his Ph.D. thesis. Thanks are due to Professor H. J. Eysenck for the encouragement and to Professor Abraham Verghese, Christian Medical College, Vellore for the suggestions offered. Thanks are due to his colleagues Drs. Thirunavukkarasu, Suresh Kumar, Arunagiri, Kumar, Murugan, Dayalan, Subbaiah and Catherine Victoria for the kind help in collection of cases.

References

- AL-ISSA, I. (1964), The Eysenck Personality Inventory in Chronic Schizophrenia, *British Journal of Psychiatry*, 110, 397 - 400.
- CLARIDGE S. GORDON (1967), Personality and Arousal, *A Psychophysiological study of psychiatric disorder*, London, Pergamon Press.
- EYSENCK, J. HANS (1966), *Dimensions of Personality*, London, Routledge and Kegan Paul Ltd.
- EYSENCK, H. J. & EYSENCK, S. B. G. (1964), *Manual to the Eysenck Personality Inventory*. London, University, London Press.
- EYSENCK, J. HANS & EYSENCK, B. G. SYBIL (1977), *Personality structure and measurement*, London, Routledge and Kegan Paul.
- EYSENCK, J. HANS & EYSENCK, B. G. SYBIL (1976), *Psychoticism as a dimension of personality*. London: Hodder and Stoughton Educational Bath, Pitman Press.
- FEIGHNER P. JOHN, ROBINS, E., GUZE, B. S. WOODRUFF, A. R., WINOKUR, G. & MUNOZ, R. (1972), *Diagnostic Criteria for use in Psychiatric Research*. *Archives of General Psychiatry*, 26, 57 - 72.
- RAMANATHAN, A. (1984a), An Exploratory study of the relation between psychoticism and certain aspects of auditory hallucinations in schizophrenics. *Indian Journal of Psychiatry*, 26, 169 - 174.
- RAMANATHAN, A. (1984b), A study of interference with the activities of schizophrenics

- by auditory hallucinations. *Indian Journal of Psychiatry*, 26, 206 - 212.
- RAMANATHAN, A. (1984c), A study of coping with auditory hallucinations in schizophrenics. *Indian Journal of Psychiatry*, 26, 229-236.
- RAMANATHAN, A., SHANTHA, G. B., & BAALAN, V., (1983), Suitability of a socio-economic scale for hospital psychiatric population. *Indian Journal of Psychiatry*, 25, 203 - 205.