

A PSYCHOTICISM SCALE IN HINDI : II. STANDARDIZATION

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SUMMARY

A psychoticism questionnaire in Hindi consisting of 60 items was standardised by administering it to 100 psychotics (schizophrenics and manic-depressives), 100 neurotics, 100 psychiatrically normal relatives of psychotics and 100 normals. The mean psychoticism score (P-score) of psychotics, neurotics, relatives and normals were 30.69, 13.63, 13.85 and 8.83 respectively, were significantly different from one another except for the difference between neurotics and relatives. The scores in each diagnostic group were normally distributed. Reliability as measured by Kuder-Richardson formula, split half, and test-retest methods gave coefficients between .62 and .88. Criterion validity as measured by comparing the diagnostic groups according to proportion of subjects in top, middle and bottom thirds; concurrent validity as assessed by correlating the P-score with scores obtained on PEN scale and on Paranoid and Depression sub-scales of Personality Traits Inventory and cross-validity studied by comparing our scores on psychotics with those obtained at three other centres in India were satisfactory. The questionnaire could well discriminate between psychotics and non-psychotics, and a satisfactory cut-off point has been suggested for this.

On the basis of above findings we can conclude that the questionnaire constructed is a valid measure of psychoticism.

Since a personality trait is presumed to have a normal distribution in the population, and we have obtained normal distribution on psychoticism score for each of the groups separately, psychoticism score studied here may reflect a personality trait.

A psychoticism questionnaire was constructed in simple Hindi language (Arora and Varma, 1979). The following concept of Eysenck and Eysenck (1968) was taken as the operational definition of psychoticism: "There exists a set of correlated behaviour variables indicative of predisposition to psychotic breakdown demonstrable as a continuous variable in the normal population and independent of extraversion and neuroticism."

Initially the questionnaire consisted of 122 questions. After the first tryout, 42 items were discarded on the basis of item analysis. Out of remaining items, 70 measured psychoticism and 10 social desirability. The revised psychoticism questionnaire was given a second tryout. Item

analysis was conducted again and 10 psychoticism items were discarded at this stage. A few social desirability items were re-framed. For the final version, Kuder-Richardson reliability for the psychotic group was .91. Criterion validity was also found to be significant.

The present paper reports on the standardization of this psychoticism questionnaire. It has 60 items to measure psychoticism and 10 for social desirability.

METHOD AND RESULTS

Sample :

The final version of the test was administered to 400 subjects, 100 each of psychotics, neurotics, relatives of psychotic patients, and normals. Half of each group were

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males, the other half females. Married as well as unmarried subjects in the age range 15-44 years with all educational levels and all occupational categories were accepted. Only Hindu and Sikh religious groups with both urban and rural backgrounds represented in each of the diagnostic groups.

Psychotic and neurotic subjects were taken from the patients seeking psychiatric consultation at the Postgraduate Institute of Medical Education and Research, Chandigarh. Psychotic patients with diagnosis of schizophrenia and manic-depressive psychosis, referred to by psychiatry clinic were taken if—(1) they fulfilled the basic criteria (mentioned above), (2) the consultant psychiatrist had given diagnosis of schizophrenia or manic-depressive psychosis, (3) they had no other associated illness like mental retardation, organic brain syndrome or serious physical illness. Chronic and uncooperative cases were not included, the case being considered chronic when total duration of illness was 2 years or more.

Neurotic patients with diagnosis of anxiety neurosis and neurotic depression, referred by psychiatry clinic were taken if—(1) they fulfilled the basic criteria, (2) the consultant psychiatrist had given diagnosis of anxiety neurosis or neurotic depression, (3) there was no family history of psychotic illness, (4) they had no other physical illness.

Non-psychotic relatives were included to see if some of them share the high psychoticism scores with their relatives. They were taken for the study if—(1) they happened to be first order relatives, i.e. parents,

siblings, or children of the psychotic patients, (2) they fulfilled the basic criteria, (3) they have had no manifest psychotic or neurotic illness so far.

A comparable normal sample was drawn from voluntary subjects. By voluntary is meant those persons who when approached agreed to complete the questionnaire. It was also ensured that they (1) had never sought psychiatric consultation, (2) there was no family history of mental illness in the first order relatives, i.e. of siblings, children and/or parents, and (3) during the brief interview they had appeared to be free from manifest psychiatric abnormality.

Administration and Scoring of the questionnaire

Psychoticism questionnaire was administered by the examiner individually to all the subjects. Literate subjects were asked to answer each question by ticking on either 'yes' or 'no' response category for each item. In case of illiterate subjects, items in the questionnaire were read out and their responses marked. Detailed method of administration and scoring has been mentioned in an earlier paper (Arora and Varma, 1979).

Standardization of the test

Mean, median and S. D. of psychoticism score (P-score) was calculated separately for the four groups. Table I shows mean, median and S. D. 't' ratios were calculated between the diagnostic groups which are also given in the Table.

Mean P-score psychotics was signifi-

TABLE I—Comparison between the diagnostic groups on P-Scores

Groups	N	Mean	Median	SD	't'	p less than
1. Psychotics	100	30.69	29.25	9.09	(1-2) 15.51	.001
2. Neurotics	100	13.63	13.21	6.25	(1-3) 15.04	.001
3. Relatives of psychotics	100	13.85	13.33	6.47	(2-3) 0.34 (1-4) 22.08	N.S. .001
4. Normals	100	8.83	9.17	4.01	(2-4) 8.73 (3-4) 8.66	.001 .001

cantly higher than that of other groups. Relatives of psychotics as a group had as high mean score as that of neurotics, the difference between these two groups was insignificant. The normal group had the lowest mean score.

The frequency distribution graph showed that the score distribution in each of the four groups is symmetrical and approximates normal distribution.

Range of Psychoticism Score

Total 400 P-scores were divided in thirds—high scores, middle scores and low scores. The highest P-score was 52 and the lowest 0. The distribution of normals, relatives of psychotics, neurotics and psychotics in three groups; low, middle and high-score is given in Table II.

TABLE II—Distribution of cases according to low, middle and high thirds on P-scores in the four diagnostic groups

Score-group	Psycho- tics	Neuro- tics	Relati- ves of Psycho- tics	Normal
Low score group	2	32	32	67
Middle score group	5	51	45	33
High Score group	93	17	23	0

Among the normals, there was not a single case in high score category, whereas in the psychotic group 93% of the cases were in the high score category. 67% of the normal and only 2% of the psychotics were in the low score category. Majority of neurotics and relatives of psychotics were in the low and middle score groups.

Cut-off score

Minimum of false positive and false negative errors combined was found at the score 24/25 (3.3% false positives and 20% false negatives).

Psychoticism score and diagnosis

Mean for the schizophrenics and manic-depressives psychotics were separately calculated. Table III shows the mean and S. D. for these two groups separately and for the psychotic group as a whole.

TABLE III—Mean, S. D. and 't' ratio for patients of Schizophrenia and manic-depressive psychosis

Group	N	Mean	S.D.
Psychotics (as a group)	100	30.69	9.09
Schizophrenics	77	32.35	8.80
Manic-depressive psychotics	23	25.13	8.09
Comparison between schiz- ophrenics and manic-de- pressive psychotics		't'=3.65, p<.01	

Schizophrenics had significantly higher psychoticism score.

Item endorsement

The proportion of item endorsement gradually increased from bottom 1/3 group to middle 1/3 group to top 1/3 group. The top 1/3 had the highest endorsement on all psychoticism items.

E 1/3 value ranged from .08 to .67 for psychoticism items with mean as .371.

Endorsement percentage for each item was also calculated for the four diagnostic groups separately, according to the three age groups and two sexes. Expectedly, lowest proportion of normals had endorsed on each of the psychoticism item, whereas maximum of psychotics had endorsed. Neurotics and relatives of psychotics endorsed in between the normals and psychotics. No significant difference was seen in the percentage of endorsement according to age and sex.

Inter-item correlation

Inter-item correlations using phi-coefficient method were calculated for psychotics and normals separately. 1770 correlations were calculated in each group.

Most of the inter-item correlations were below .05 significance level.

Reliability of the test

Table IV shows reliability of the psychoticism items calculated by various methods.

TABLE IV—Reliability of P-questionnaire as measured by different methods

Method	N	Reliability
Split-half	100 (Psychotics)	.82
Kudder-Richardson formula	100 (Psychotics)	.88
Test-retest	40 (Normals)	.62

Each of the measures of reliability was satisfactory.

Validity

The following measures of validity were studied :

Criterion validity (discriminating between the psychotics and others). X^2 calculated for number of subjects in the upper and lower thirds according to P-score in each of the four groups was 156.54 which is significant at .001 level.

Concurrent validity

Along with the P-questionnaire, psychoticism scale of PEN (Eysenck and Eysenck, 1968) and Paranoid and Depression subscales of Personality Trait Inventory (PTI) (Sen, 1966) were also administered to the psychiatric patients (N=20 each) of both sexes in the age range of 15-44 years to find

out concurrent validity of the P-Score. Table V shows the correlation between scores obtained on the Psychoticism Questionnaire and the other tests.

TABLE V—Correlation of Psychoticism questionnaire with other tests

Tests	N	r
Psychoticism scale (PEN)	20	.77
Paranoid scale (PTI)	20	.56
Depression scale (PTI)	20	.12

Construct validity

It was hypothesized that if the test was a measure of psychoticism, then psychotics would obtain higher score on it, as compared to non-psychotics. As shown in Table 1, psychotics obtained significantly higher scores than others.

The percentage endorsement for each of the psychoticism item was significantly greater in the psychotic group.

Cross validity

Data on psychoticism questionnaire were collected from three other centres also. These were National Institute of Mental Health and Neuro-sciences, Bangalore ; Department of Psychiatry, All-India Institute of Medical Sciences, New Delhi ; and the Department of Psychiatry, Christian Medical College, Ludhiana. At these Centres the questionnaire was administered only to psychotics. Criteria of selection of subjects was the same as in the main study. Table VI

TABLE VI—Comparison of P-scores obtained by psychotics at other centres

Place	N	Mean	S.D.	t	P
1. Chandigarh	100	30.69	9.09	—	..
2. Bangalore	30	29.23	10.04	(1-2) .70	N.S.
3. New Delhi	30	28.54	8.79	(1-3) 1.15	N.S.
4. Ludhiana	10	31.00	9.31	(1-4) 0.10	N.S.

shows the means, SD's and 't' ratios for the scores obtained at the other Centres.

None of the mean scores between the centres differed significantly from one another.

DISCUSSION

The mean psychoticism score of schizophrenics (32.35) was significantly higher than that of manic-depressives (25.13) but still mean psychoticism score of manic depressives was significantly higher than that of neurotics and relatives of psychotics. It was also higher than the cut-off point. This suggests that although there is difference between schizophrenics and manic-depressives, the questionnaire is able to differentiate psychotics from non-psychotics. Scores obtained by both schizophrenics and manic-depressives should be looked upon as an index of psychotic process irrespective of diagnostic classification.

When psychoticism scores of each of the four groups taken in the present study were examined separately, we found that the distribution of scores in each group approached a normal distribution. This suggests that our scores may be true measure of a naturally occurring personality trait, i.e. psychoticism or something highly correlated with it. Since most personality traits are presumed to be normally distributed, psychoticism factor as measured here may be taken as a personality trait.

Inter-item correlations for pairs of psychoticism items were calculated. It was considered possible that the intercorrelation may be different in the different clinical groups under study, hence it was separately calculated for the two extreme groups, that is, the psychotics and normals.

The significant correlation obtained with P-Scale of PEN and Paranoid Scale of PTI suggests that this questionnaire also

measures the same construct. The low correlation with Depression Scale of PTI suggests that either depression measured by PTI is more of a measure of a neurotic disturbance, or psychoticism score of the present scale is not a measure of depression. This coupled with the fact that the psychotic depressives in the present study gave a high P-score, indicates that our questionnaire primarily measures psychoticism, depression of the psychotic range may be only a part of it.

Inter-item correlations showed that the number of such significant correlations were more in psychotic group as compared to that in the normal group. The items being measures of psychoticism, the higher number of such relationship in psychotics is in line with the expectation. They thus add to the faith in the validity of the scale as such.

Relatives of the psychotic patients taken for the present study had no manifest symptoms nor had ever before taken psychiatric consultation, yet their scores were not similar to that of normal population, but were as high as those of neurotic patients. This may be taken to suggest a genetic basis for predisposition to psychosis. Eysenck and Eysenck (1972) has also drawn attention to the close genetic relation between psychoticism and psychopathy.

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