RELATIONSHIP OF PSYCHOTICISM WITH CERTAIN SOCIO-ECONOMIC VARIABLES

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SUMMARY

A psychoticism questionnaire developed by the authors (Arora & Varma, 1980 a, b) was administered to 100 psychotics, 100 neurotics, 100 relatives of psychotics, and 100 normals. Relationship of P-score with six socioeconomic variables, i.e., age, sex, education, occupation, religion, and urban/rural background was studied. P-score was found to be higher in younger age group (15-24 years) in each of the four clinical groups but was significantly low in psychotics and their relatives. No sex differences were observed regarding P-score. Significant inverse relationship between P-score and education and occupational status was found only for the normal groups. No significant difference was seen in psychoticism score between the two religious groups—Hindus and Sikhs. Those from rural background had higher P-score as compared to those from urban background, but the differences did not reach statistical significance.

Psychoticism as an important personality dimension came rather late on the scene, which accounts for the relatively low research output on it as compared to the other three dimensions considered to be equally important, i.e., neuroticism, extraversion, and intelligence.

Many personality attributes are known to be influenced by socioeconomic characteristics. This is hardly surprising keeping in view that the socio-economic attributes of a person very much influence his life experiences. It is argued that both genetic-constitutional, and social-interpersonal-environmental sets of influences may have some bearing on the manifest personality. Thus, study of relationship of socio-economic variables with any personality dimension is of importance, but is often neglected. So far, the knowledge we have about such relationships, relates mainly to neuroticism (N) and extraversion (E) dimensions only. E decreases with age, is not related strongly to social class, and is higher in males than in females. N also decreases with age, is slightly higher in the lower social strata and is higher in females than in males (Eysenck and Eysenck, 1969).

In the present study, an attempt was made to find out if there exists any relationship between psychoticism and socioeconomic variables like age, sex, education, occupation, urban/rural background, and religion in our population. In addition to suggesting conceptual significance of such relationships it may also indicate if separate norms are needed for the various socioeconomic categories.

METHOD

Sample—The sample consisted of 400 subjects: 100 each of those clinically diagnosed to be suffering from functional psychoses (schizophrenia and manic depressive psychosis), and neuroses (anxiety neurosis and depression), 100 relatives of psychotic patients without past or present history or indication of any mental illness, and 100 psychiatrically normal subjects with no family history of mental illness.

Psychotic and neurotic groups of sub-

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jects represented consecutive patients meeting the selection criteria taken from the patients seeking psychiatric consultation at the Postgraduate Institute of Medical Education and Research, Chandigarh. One relative of each psychotic patient was taken. Normal sample was drawn from voluntary subjects, i.e., those who when approached, agreed to take the questionnaire.

Both males and females, married as well as unmarried subjects in the age range of 15 to 44 years with all educational levels and all occupational categories were taken. It was found that socioeconomic categories were equitably represented in the group. X^2 values were not significant for difference between the clinical groups on distribution of each socioeconomic variable.

**Measurement of Psychoticism**

Psychoticism questionnaire developed by the authors (1980a, 1980b) in Hindi, consists of 60 items to measure psychoticism and 10 items to measure social desirability. Items represented a question whether or not certain things were true about the subject and if he felt, behaved or perceived in a particular (abnormal) fashion. The questionnaire has been found to be fairly reliable and valid tool for our population with reliability of .88 (on Kuder-Richardson formula) and has been shown to distinguish normals from functional psychotics very well. It also correlates highly with other measures of psychoticism (r=0.77 with 'p' of PEN of Eysenck and Eysenck, 1963).

The questionnaire was individually administered to each subject. Literate subjects were asked to answer each question ticking on either 'Yes' or 'No' response category for each item. In case of illiterates, each question was read out to the subjects and response verbally elicited.

Total psychoticism score (P-score) was sum of all positive responses for psychoticism items.

**Analysis of data**

The relationship between each socioeconomic variable selected and psychoticism score was studied by the following two methods:

1. Within each clinical group, one-criterion analysis of variance was carried out to study the significance of the differences between the various categories of socioeconomic variables. Where F-ratio was found to be significant, the various categories of the socioeconomic variable were compared with one another by t-test using SED derived from the analysis of variance.

2. Co-efficient of correlation was calculated for each independent variable with the dependent variable for continuous variables. In education, years of schooling were taken as a continuous variable, Occupational groups were assigned numbers 9 (Profession) to 1 (students) to make it continuous. Correlation was calculated using the phi-coefficient for sex, religion and urban rural background.

**RESULTS**

Table 1 summarizes the relationship between each socio-economic variable and P-score as studied by the two methods, correlation and analysis of variance.

The results showed that the P-score was higher in younger age-group (15-24 years) than in age-group 25-34 and 35-44 in each clinical group. The differences between the three age-groups were significant in psychotics and relatives of psychotics only where age-group 15-24
TABLE 1. Co-efficients of correlation and F-ratios between P-score and socio-economic variables.

| Socio-economic variable | Statistical method | Psychometric method (N=100) | Neurotic method (N=100) | Psychotic method (N=100) | Normal method (N=100) |
|-------------------------|--------------------|----------------------------|-------------------------|--------------------------|-----------------------|
| Age                     | r                  | .20*                       | .00                     | -.27**                   | -.13                  |
|                         | F(2,97)            | 5.86**                     | 2.24                    | 3.88*                    | 1.04                  |
| Sex                     | Phi Coeff.         | .04                        | .08                     | .04                      | .00                   |
|                         | F(1,98)            | .12                        | .36                     | .09                      | .05                   |
| Education (Yrs. of Schooling) | r             | .10                        | .02                     | -.04                     | -.25**                |
|                         | F(2,97)            | 1.40                       | .04                     | .07                      | 3.31*                 |
| Occupation (a)          | r                  | -.13                       | -.01                    | -.14                     | -.25*                 |
|                         | F(7,92)            | 1.19                       | 1.74                    | 1.90                     |                       |
| Religion (b)            | Phi Coeff.         | .11                        | .04                     | .07                      | .18                   |
|                         | F(1,98)            | .68                        | .04                     | .31                      | 2.20                  |
| Urban/rural background  | Phi Coeff.         | .18                        | .10                     | .13                      | .19                   |
|                         | F(1,98)            | .93                        | .91                     | 2.12                     | 1.33                  |

The sign has been ignored in giving the phi-coefficient values.

*—p<0.05.
**—p<0.01.
(a) According to Kuppuswamy (1962) scale + Housewives and students.
(b) Only Hindu and Sikh.

had significantly different P-score as compared to age-group 25-35 or 35-44. The latter two age-groups did not differ significantly with one another (Table 2).

Significant inverse relationship between P-score and education and occupation was found only for the normals. P-score significantly decreased with higher education and occupational status. Identical 'r' values of minus .25 were obtained between P-score with education and occupation. 'F' ratio was significant for education in normals. The two extreme educational groups were found to differ significantly on 't' test (Table 3). 'F' ratios were not significant for occupation in any subject-group.

TABLE 2. Comparison between the age-groups on P-score.

| Age (in yrs) | Mean P-score |
|--------------|--------------|
|              | Psychotics   | Neurotics | Normals   |
| (1) 15-24    | ..           | 34.07     | 14.17     | 16.34     | 9.38     |
| (2) 25-34    | ..           | 29.67     | 13.13     | 13.08     | 8.43     |
| (3) 35-44    | ..           | 27.22     | 13.74     | 12.14     | 8.69     |

| 'F' ratio   | .56**       | .02       | 3.68*     | 1.04      |

| 't' ratios  |             |           |           |           |
| 1 Vs. 2     | 2.05*       | 2.17*     | ..        |           |
| 1 Vs. 3     | 3.34*       | ..        | 2.61*     | ..        |
| 2 Vs. 3     | 1.08        | ..        | 0.61      | ..        |

| *—p<0.05, **—p<0.01 |

TABLE 3. Comparison between the educational groups on P-score.

| Years of schooling | Mean P-score |
|--------------------|--------------|
|                    | Psychotics   | Neurotics | Normals   |
| (1) 0—8            | ..           | 28.86     | 13.56     | 13.75     | 11.36     |
| (2) 9—12           | ..           | 29.69     | 13.90     | 14.15     | 9.32      |
| (3) 13 and above   | 32.33        | 13.48     | 13.60     | 8.20      |

| 't' ratios for Normal gr. |
| 1 Vs. 2—t=1.44, 1 Vs. 3—t=2.47* | 2 Vs. 3—t=1.22 |

| *—p<.05 |

Table 4 gives the mean P-scores for the various categories of sex, religion, and domicile (rural and urban) for each clinical group. The two sexes and the two
religious groups did not significantly differ from one another and none of the 'F' ratios was significant. However, in case of normals, Sikhs had a higher mean P-score which also reflected in the relatively high 'F' ratio and phi-coefficient value almost reaching significance (.13 as against .20 required for significance). Those from rural background, as opposed to the ones from urban background, had higher mean P-score for each clinical group, although the differences were not significant on analysis of variance. The phi-coefficient of correlation almost reached significance for normals and psychotics (.19 and .18 as opposed to .20 required for significance).

**TABLE 4. Mean P-score by sex, religion and urban/rural background.**

| Religion | Hindu | Sikh | Background | Urban | Rural |
|----------|-------|------|-----------|-------|-------|
| Hindus   | 31.25 | 29.0 | Urban     | 29.93 | 31.70 |
| Sikhs    | 31.25 | 29.0 | Rural     | 31.70 | 31.70 |

**DISCUSSION**

Relationship of P-score with socioeconomic variables was studied through methods ranging from the simplest technique like comparison of means to the better techniques of correlation and analysis of variance. Only one-criterion analysis of variance was done. Two-way analysis was not carried out as the results on one-way were not usually significant. Moreover, the correlations obtained between P-score and each of the socioeconomic variables were insignificant (except for age in psychotics and relatives of psychotics. Education and occupation in the normals). So, it was not considered worthwhile to examine the interaction between various factors. Out of 24 correlations studied, only four correlations reached the level of significance.

Significant correlation in negative direction was obtained between age and psychoticism score for psychotics and relatives of psychotics. In normals and neurotics, U-shaped relationship between age and psychoticism was suggested; younger and older age groups having higher P-scores than the middle group; whereas in the other two groups, P-scores progressively declined with age. Eysenck and Eysenck (1969) have also found a U-shaped relation to age in normal population. Our findings on psychotic patients are supported by the findings of McPherson et al. (1974). They also found statistically significant correlation with age, a slight tendency for older patients to have lower scores. A negative correlation between age and neuroticism also has been reported by a number of authors (Eysenck and Eysenck, 1964).

Though Eysenck and Eysenck (1969) had found that males had much greater P-scores than females in our study, sex did not significantly correlate with psychoticism score. Our finding is supported by the study of McPherson et al. (1974) where male and female groups did not differ significantly. Verma and Wig (1972) also found sex differences insignificant. On the other hand, females have been reported to score higher on neuroticism (Verma and Wig, 1972).

Our findings have indicated that, at least in normals, there was an inverse relationship between educational level and occupational status with the P-score. It may be said that those from the lower socio-
economic status show higher psychoticism. Similar relationship has been reported between neuroticism and socio-economic status (Eysenck and Eysenck, 1969). It may be that there is higher psychopathology in general in lower classes. Also, this does not support the view that social classes may differ in choice of 'neurotic' versus 'psychotic' defenses. That the differences between educational and occupational classes was not significant in case of the patient groups may indicate that the social status may not make that much of difference once the disease process has set in.

Those from rural background were found to consistently give higher P-scores than those from urban background. In our part of the country, Sikhs are more generally represented amongst the rural population and Hindus amongst the urban. The finding of higher mean P-score amongst the Sikhs in the normal group could again be related to the variable of background. As opposed to psychoticism, neuroticism score has been reported to be higher in those from urban background (Eysenck and Eysenck, 1964).

Taking the trends observed on education, occupation, rural/urban background, and religion, it is suggested that those from the lower socio-economic bracket are more likely to have a higher P-score at least in the normal population.

Unfortunately, it was not possible to partial out the various socio-economic variables to see the pure effects of each as most of the correlational values did not reach significance. That could have indicated as to which variables were independently associated with differences in the P-score.

Psychoticism has been found to be similar to what has been reported regarding neuroticism in its relationship with socio-economic status. This is consistent with the epidemiological reports of higher incidence of mental illness in lower classes (Hollingshead and Redlich, 1958). The two personality variables seem to differ, however, in the relationship to sex and urbanicity.

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REFERENCES

ARORA, M. AND VARMA, V. K. (1980a). A Psychoticism Scale in Hindi—I: Construction and initial tryouts. Indian J. Psychiat., 22, 225.

ARORA, M. AND VARMA, V. K. (1980b). A Psychoticism Scale in Hindi-II: Standardization. Indian J. Psychiat., 22, 230.

EYSENCK, H. J. AND EYSENCK, S. B. G. (1968). A factorial study of Psychoticism as a dimension of personality. Multivariate Behaviour Research. All-Clinical Special Issue, 13.

EYSENCK, S. B. G. AND EYSENCK, H. J. (1964). Manual of Eysenck Personality Inventory. Univ. of London Press.

EYSENCK, S. B. G. AND EYSENCK, H. J. (1969). Scores on three personality variables as a Function of age, sex and social class. Brit. J. Social and Clinical Psychol., 8, 69.

HOLLINGSHEAD, A. B. AND REDLICH, F. C. (1958). Social Class and Mental Illness. New York: John Wiley.

McPherson, F. M., PRESLY, A. A., ARMSTRONG, JENNIFER AND CURTIS, R. M. (1974). Psychoticism and psychotic illness. Brit. J. Psychiat., 123, 132.

VERMA, S. K. AND WIG, N. N. (1972). Some experiences with PEN. Psychological Studies, 17, 11.