*Brit. J. Psychiat.* (1979), **135**, 163–67

# Classification of Personality Disorder

By PETER TYRER and JOHN ALEXANDER

**SUMMARY** **An interview schedule was used to record the personality traits of 130 psychiatric patients, 65 with a primary clinical diagnosis of personality disorder and 65 with other diagnoses. The results were analysed by factor analysis and three types of cluster analysis. Factor analysis showed a similar structure of personality variables in both groups of patients, supporting the notion that personality disorders differ only in degree from the personalities of other psychiatric patients. Cluster analysis revealed five discrete categories; sociopathic, passive-dependent, anankastic, schizoid and a non-personality-disordered group. Of all the personality-disordered patients 63 per cent fell into the passive-dependent or sociopathic category. The results suggest that the current classification of personality disorder could be simplified.**

Despite many criticisms the concept of personality disorder remains a useful one for psychiatrists (Lewis, 1974; Shepherd and Sartorius, 1974) and is included in formal classifications of illness (World Health Organization, 1965; American Psychiatric Association, 1968). Unfortunately it has not achieved the same diagnostic status as other psychiatric disorders because of major difficulties in establishing a valid and reliable classification (Walton *et al*, 1970; Walton and Presly, 1973). Current classifications of personality disorders are largely unsupported by measurement and have not been independently confirmed. Using a structured interview schedule for assessing disordered personality we have examined the personality characteristics of 130 psychiatric patients, half of whom were clinically assessed to have personality disorders.

## Method

*Personality disorder schedule*

Using a structured interview schedule (Tyrer *et al*, 1979) 24 personality attributes (Table I) were rated on 9 point scales for all patients. The schedule can be used with either subjects or informants although it is more suitable for the latter.

*Patients and procedure*

Over an 18 month period all patients attending PT's out-patient clinic at the Department of Psychiatry, Southampton, were assessed provided that they satisfied one of the following criteria: (i) a relative or close friend of the patient who had known the patient for at least 10 years could be interviewed, or (ii) the assessor had seen the patient at least three times, one of which was at a time when the patient had no formal psychiatric disorder. These criteria were introduced because current psychiatric status may influence personality assessment (Wittenborn and Maurer, 1977). All diagnostic conditions, with the exception of mental handicap, were included. The patients were classified according to the International Classification of Disease (ICD) (World Health Organization, 1965). After 18 months 65 patients with diagnoses other than personality disorder but only 37 with personality disorders had been assessed. Patients with an ICD classification of personality disorder therefore continued to be seen until 65 assessments were also obtained so that adequate numbers were available for comparison. The diagnostic features of the 130 patients is shown (Table II).



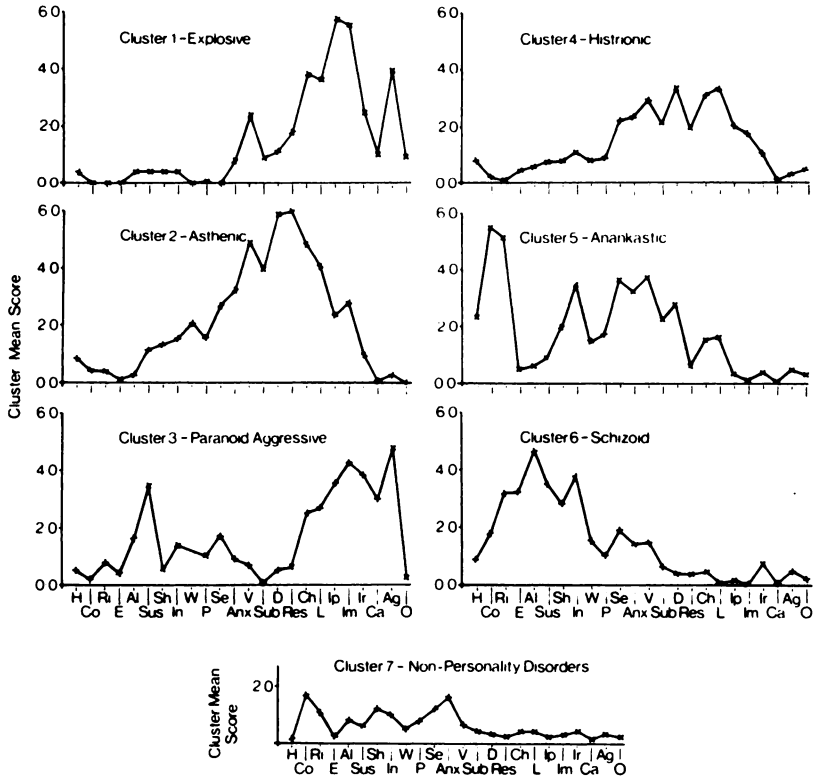
https://doi.org/10.1192/bjp.135.2.163 Published online by Cambridge University Press

*Analysis of data*

Factor analysis using the Varimax rotation was applied to the ratings of both the normal and personality disordered groups separately and together to find out if similar factors loaded in both groups. A cluster analysis of the total data was also carried out to determine the best classification of groups, particularly within the personality disorders. This represented a test of the ICD classification of personality disorders, a classification which has never received independent validation. Both hierarchical and non-hierarchical methods of cluster analysis were employed. Because of evidence that similarity of cluster profiles may be more important than numerical differences between them (Strauss *et al*, 1973) both distance and correlational measures of similarity were employed for the hierarchical analysis. Nearest neighbour, centroid and furthest neighbour methods of continuing clusters were explored. The non-hierarchical analysis chosen employed

TABLE I
*Personality traits assessed in interview schedule*

| | |
|---|---|
| Aggression | Irritability |
| Aloofness | Lability |
| Anxiousness | Optimism |
| Callousness | Pessimism |
| Childishness | Resourcelessness |
| Conscientiousness | Rigidity |
| Dependence | Sensitivity |
| Eccentricity | Shyness |
| Hypochondriasis | Submissiveness |
| Impulsiveness | Suspiciousness |
| Introspection | Vulnerability |
| Irresponsibility | Worthlessness |




FIG—Cluster profiles of personality disorder. The first two or three letters of the personality attributes listed in Table I are shown on the abscissae, with the exception of Sn (Sensitivity) and Ip (Irresponsibility). The personality attributes are given in the same order for all seven clusters.

https://doi.org/10.1192/bjp.135.2.163 Published online by Cambridge University Press

TABLE II

*Classification of patients according to the International Classification of Disease*

| Personality disorder group | | Non-personality disorder group | |
|---|---|---|---|
| Anankastic | 8 | Affective psychosis | 9 |
| Hysterical | 11 | Depressive neurosis | 30 |
| Asthenic | 11 | Anxiety neurosis | 8 |
| Hypochondriacal | 3 | Phobic anxiety state | 6 |
| Schizoid | 6 | Alcoholism | 3 |
| Antisocial | 7 | Schizophrenia | 4 |
| Explosive | 7 | Paranoid psychosis + morbid jealousy | 3 |
| Paranoid | 7 | Obsessional neurosis | 2 |
| Affective | 3 | | |
| Others | 2 | | |
| Total 65 | | Total 65 | |

the ratio of the between groups to within groups sum of squares as a criterion to be maximized using an iterative process. These analyses were carried out using the GENSTAT computer package.

## Results

In all but 25 of the 130 patients the personality schedule was completed with an informant. The results of the factor analysis were similar in both groups of patients. In both personality and non-personality disorder groups the two main factors, termed sociopathic and passive-dependent, accounted for most of the variance. A dysthymic factor was also detected in the non-personality disorder group (Table III).

TABLE III

*Factor structure of personality variables. Only personality traits with a factor co-efficient of 0.5 or over are included*

| | Non-personality disorder group | | Personality disorder group | | All patients | |
|---|---|---|---|---|---|---|
| Factor | Main trait loadings | Variance (% of total) | Main trait loadings | Variance (% of total) | Main trait loadings | Variance (% of total) |
| Sociopathy | Aggression<br>Irritability<br>Impulsiveness<br>Callousness<br>Irresponsibility<br>Lability | 21.0 | Callousness<br>Aggression<br>Irritability<br>Impulsiveness | 19.3 | Aggression<br>Callousness<br>Irritability<br>Impulsiveness<br>Irresponsibility | 16.6 |
| Passive dependence | Vulnerability<br>Submissiveness<br>Sensitivity<br>Dependence | 13.9 | Dependence<br>Resourcelessness<br>Submissiveness<br>Childishness<br>Vulnerability<br>Anxiousness | 23.9 | Dependence<br>Resourcelessness<br>Childishness<br>Irresponsibility<br>Vulnerability<br>Lability | 21.1 |
| Anankastic | Not represented | | Rigidity<br>Conscientiousness<br>Impulsiveness* | 7.8 | Rigidity<br>Conscientiousness | 4.4 |
| Schizoid | Aloofness<br>Suspiciousness | 5.9 | Aloofness<br>Eccentricity<br>Lability* | 3.0 | Aloofness<br>Eccentricity | 5.0 |
| Dysthymic | Anxiousness | 4.2 | Not represented | | Introspection<br>Sensitivity<br>Pessimism<br>Anxiousness | 9.6 |

* Significant negative loadings for this variable.

https://doi.org/10.1192/bjp.135.2.163 Published online by Cambridge University Press

Seven clusters were defined in both the hierarchical and the non-hierarchical cluster analysis using the distance measure of similarity. One cluster was largely composed of patients with no personality disorder and the other six clusters were mainly subsets of the disordered group. The profiles for the seven clusters are illustrated (Fig), and labelled according to the predominant pattern of abnormal personality. The profiles of the 'explosive' and 'paranoid aggressive' clusters, and the 'asthenic' and 'histrionic' clusters were similar and the differences were mainly in ratings of severity. The correlational cluster analysis showed five clearly identifiable clusters which were largely reproduced by the three methods used. The patients in the explosive and paranoid aggressive clusters, and the asthenic and histrionic clusters were merged early in the hierarchical procedure reflecting the similar profiles of these two pairs of clusters. The final group of four personality disorder clusters was very similar to that derived from factor analysis, with passive-dependent, sociopathic, schizoid and anankastic categories.

The relationship between cluster group and sub-category of personality disorder according to the International Classification of Disease is shown in Table IV. Patients in the hysterical and asthenic categories are equally distributed between clusters 2 and 4 and those in the explosive and antisocial categories between clusters 1 and 3. The anankastic and schizoid personality disorders largely correspond with their cluster counterparts.

TABLE IV

*Relationship between cluster groups and ICD diagnosis of personality disorder*

| Diagnosis | Cluster | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | |
| Anankastic | 1 | | 1 | | 5 | 1 | | 8 |
| Hysterical | 1 | 4 | | 6 | | | | 11 |
| Asthenic | 1 | 5 | | 4 | 1 | | | 11 |
| Hypochondria | | | | 1 | 1 | 1 | | 3 |
| Schizoid | | | | | 1 | 5 | | 6 |
| Antisocial | 2 | | 4 | | | 1 | | 7 |
| Explosive | 2 | | 4 | 1 | | | | 7 |
| Paranoid | | | 2 | | 1 | 3 | 1 | 7 |
| Affective | | | | 1 | 1 | 1 | | 3 |
| Others | 1 | | | | | | 1 | 2 |
| No personality disorder | | | 3 | 5 | 1 | 1 | 55 | 65 |
| Total | 8 | 9 | 14 | 18 | 11 | 13 | 57 | 130 |

## Discussion

The results of the factor analysis reveal that the underlying structure of variables is similar in both those with and those without primary personality disorder and hence supports the concept of personality disorders as being at the extreme of a multidimensional continuum.

The cluster analysis showed that the personality-disordered patients could be classified into at least four and possibly six categories. The merging of six to four categories using the correlational cluster analysis and the close similarity between two of the seven profiles (Fig) suggests that only four distinct groups of abnormal personality could be identified in the patients studied. The term passive-dependent personality is preferred to either asthenic or histrionic personality, as the main features of the cluster were resourcelessness, dependence, childishness and vulnerability. The higher scoring of the asthenic sub-group (cluster 2) compared with the histrionic group (cluster 4) suggests that histrionic behaviour is a stage along the road to asthenia rather than a separate entity. The sociopathic cluster combines explosive and antisocial sub-groups for the same reason. The anankastic and schizoid clusters include most of the patients diagnosed as anankastic and schizoid personality disorders using the ICD (Table IV) and so the same description is retained.

Several of the classical descriptions of abnormal personality types are not identifiable in the clusters. Kretschmer's well-known descriptions of cycloid (Kretschmer, 1922) and sensitive personality (Kretschmer, 1918) are reflected in the separation of affective (ICD 301.1) and paranoid (ICD 301.0) categories in the International Classification of Disease but they did not cluster separately in our analysis. This may indicate that such abnormal personality types are rare, but could also be due to the relative absence of social and personal difficulties in such

https://doi.org/10.1192/bjp.135.2.163 Published online by Cambridge University Press

personalities. A statistically abnormal personality need not be a personality disorder, as a stable adjustment may be made to the abnormality (Slater and Roth, 1969). The same may apply to the dysthymic personality defined by the factor analysis (Table III), as this group was found only in the patients without personality disorders. Hypochondriacal personality also does not appear in the clusters, but as hypochondriasis is statistically a heterogeneous entity (Bianchi, 1973) this result is not surprising. Some support for the major division of personality disorders into sociopathic and passive-dependent categories comes from Presly and Walton (1973). Using a principal components analysis of ratings made on 140 patients they found that components of social deviance and submissiveness accounted for nearly half the total variance. These two components correspond closely with our two main clusters, which contain 63 per cent of all the patients originally diagnosed as personality disorders. Concepts of personality disorder held by psychiatrists also suggest that its classification can be simplified. Plutchik and Platman (1977) studied psychiatrists' views of the attributes ascribed to the seven personality types described in the diagnostic manual of the American Psychiatric Association (1968) and found only two types, compulsive and sociopathic personalities, showed clear differentiation. Histrionic and cyclothymic types, and schizoid, paranoid and passive-aggressive (a term not used in the ICD) types shared many characteristics. These two composite groups show similarity with the passive-dependent and schizoid categories identified in our analysis.

Because of the absence of an alternative classification, the subdivisions of personality disorder given in the eighth revision of the International Classification of Disease have been retained in the ninth revision (Shepherd and Sartorius, 1974). Although personality types are many, personality disorders are few, and our results suggest that the number of subdivisions should be reduced and a category including the passive-dependent concept introduced. If this were done the currently low reliability of the ICD categories of personality disorder (Walton and Presly, 1973) might be improved.

**Acknowledgements**

We thank Drs Carol Trotter, John Lambourn and Colin Godber for their help with ratings.

**References**

American Psychiatric Association (1968) *Diagnostic and Statistical Manual for Mental Disorders*, 2nd edition. Washington.

Bianchi, G. N. (1973) Patterns of hypochondriasis: a principal components analysis. *British Journal of Psychiatry*, **122**, 541–8.

Kretschmer, E. (1918) *Der Sensitive Beziehungswahn*. Berlin: Springer.

—— (1922) *Körperbau und Charakter*, pp. 98–102. Berlin: Springer.

Lewis, A. (1974) Psychopathic personality: a most elusive category. *Psychological Medicine*, **4**, 133–40.

Plutchik, R. & Platman, S. R. (1977) Personality connotations of psychiatric diagnosis: implications for a similarity model. *Journal of Nervous and Mental Disease*, **165**, 418–22.

Presly, A. S. & Walton, H. J. (1973) Dimensions of abnormal personality. *British Journal of Psychiatry*, **122**, 269–76.

Shepherd, M. & Sartorius, N. (1974) Personality disorder and the International Classification of Diseases. *Psychological Medicine*, **4**, 141–6.

Slater, E. & Roth, M. (1969) *Clinical Psychiatry*, 3rd edition. London: Baillière, Tindall and Cassell.

Strauss, J., Bartko, J. J. & Carpenter, W. T. (1973) The use of clustering techniques for the classification of psychiatric patients. *British Journal of Psychiatry*, **122**, 531–40.

Tyrer, P., Alexander, M., Cicchetti, D., Cohen, M. & Remington, M. (1979) Reliability of a schedule for rating personality disorders. *British Journal of Psychiatry*, **135**, 168–74.

Walton, H. J., Foulds, G. A., Littman, S. K. & Presly, A. S. (1970) Abnormal personality. *British Journal of Psychiatry*, **116**, 497–510.

—— & Presly, A. S. (1973) Use of a category system in the diagnosis of abnormal personality. *British Journal of Psychiatry*, **122**, 259–68.

Wittenborn, J. R. & Maurer, H. S. (1977) Persisting personalities among depressed women. *Archives of General Psychiatry*, **34**, 968–71.

World Health Organization (1965) *International Classification of Disease*. (Eighth revision). Geneva.

Peter Tyrer, M.D., M.R.C.P. M.R.C.Psych., *Senior Lecturer in Psychiatry, University of Southampton, Royal South Hants Hospital, Graham Road, Southampton SO9 4PE*

* John Alexander, B.Sc., M.Sc. (Social Studies), *Lecturer in Medical Statistics, University of Southampton*

* Present address: Department of Computer Studies and Mathematics, The Polytechnic, Queensgate, Huddersfield, W. Yorkshire.

(*Received 9 November 1978; revised 17 January 1979*)

https://doi.org/10.1192/bjp.135.2.163 Published online by Cambridge University Press