The Two-Year Predictive Validity of the Clifton Assessment Schedule and the Shortened Stockton Geriatric Rating Scale

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SUMMARY **Assessment of cognitive and behavioural disability on 100 elderly psychiatric admissions was carried out by means of the Clifton Assessment Schedule and the Shortened Stockton Geriatric Rating Scale. The results provided useful predictive indices, confirming the relationship between cognitive impairment and unfavourable outcome at two-year follow up.**

Introduction

There have been few studies, apart from Whitehead (1976) assessing the usefulness of psychometric information for predicting long-term outcome in psychogeriatric patients. Generally, psychometric studies have attempted only short-term validation of clinical diagnosis (e.g. Kendrick *et al*, 1965; Irving *et al*, 1970; Alexander, 1970). Such studies have employed rather lengthy and in some cases difficult procedures which reduce their value as routine measures. The present study is an attempt to relate performance on a shorter assessment procedure to the two-year outcome of psychogeriatric patients. The measures used were the Clifton Assessment Schedule (CAS) and the shortened version of the Meer and Baker (1966) Stockton Geriatric Rating Scale (SSGRS). These consist of a brief psychological test and a nurses' 18 item behaviour rating scale, which provide valid indices of cognitive and behavioural competence in the elderly (Pattie and Gilleard, 1975; Gilleard and Pattie, 1977). The investigation to be reported attempted to extend their predictive validity over a longer period of time.

Method

One hundred consecutive female psychiatric patients aged 60 or over were assessed on the CAS and SSGRS within a fortnight of admission. Outcome status was ascertained two years later and classified as: (a) Unfavourable:— died or permanently hospitalized (n = 42), (b) Intermediate:—survived with either subsequent admissions or other institutional care (n = 32), (c) Favourable:— survived without subsequent admissions in the community (n = 23). The whereabouts of three patients could not be established.

The distribution of outcome categories compared with Whitehead's figures for a one year follow-up study showed the present sample to have fewer patients with an intermediate outcome (P < .05). Of the 23 patients who had had no subsequent admissions, nine were considered to be in poor health and were receiving frequent medical care from their general practitioners. Re-allocation of these nine patients to an intermediate outcome group would have made the proportion very similar to Whitehead's and confirms the generally poor outcome for elderly patients admitted to psychiatric hospitals.

Diagnosis for all patients was established on their index admission and any subsequent change over the two-year period was recorded. Diagnostic categories were as follows: (i) dementia—23 (28), (ii) Confusional State—3 (3), (iii) Affective Disorder—44 (47), (iv) Schizophrenia/Paraphrenia—11 (15), (v) Other diagnoses—9 (4) and (vi) Undiagnosed—10 (3). The figures in brackets refer to the last recorded diagnoses. The distribution is not

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significantly different from previous studies (e.g., Roth, 1955; Whitehead, 1976) and is presumably representative of this population.

Results

Relationship of diagnosis to outcome

Two broad diagnostic groups, i.e. organic illness (dementia) and functional disorder (affective illness, schizophrenia, paraphrenia) accounted for 88 per cent of the original sample. For the 28 patients with a last recorded diagnosis of dementia, 5 (18 per cent) had a favourable outcome, 6 (12 per cent) an intermediate outcome and 17 (61 per cent) an unfavourable outcome, whereas for the 60 patients in the functional group 18 (30 per cent) had a favourable outcome, 25 (42 per cent) an intermediate outcome and 17 (28 per cent) an unfavourable outcome. As would be expected an unfavourable outcome is significantly associated with a diagnosis of dementia ($\chi^2 = 7.1$, df 1, P < .01), whereas the converse is less easily established, i.e. a favourable outcome was not significantly associated with a functional disorder ($\chi^2 = 0.9$, df 1, N.S.).

The mortality rate within the two year period for the major diagnostic groups was 18 per cent for those with a diagnosis of dementia and 26 per cent for those with a diagnosis of functional disorder. The number of deaths among the patients with dementia is surprisingly low and not significantly different from the patients suffering from functional disorders. This points to a longer survival period for dementia than previously reported, e.g. Shah et al (1969). However, 43 per cent of the organic patients were permanently hospitalized.

The relationship between the last recorded diagnosis and the diagnostic cut-off points for the CAS Information/Orientation subtest indicated that 80 per cent of the patients with dementia had scored below eight and 85 per cent of the patients with functional disorder had scored eight or above at the initial assessment. Although somewhat less accurate than the classification based on three-month follow-up, the level of association between test score and diagnosis is further substantiated.

The relationship of assessment variables to outcome

The relationship between the CAS and SSGRS scores and outcome was investigated irrespective of the diagnosis. Table I presents the mean scores together with age for each of the three outcome categories. Tests for the significance of the difference between outcome groups were made using t-tests.

TABLE I
Mean age, C.A.S. and S.G.R.S. scores according to outcome group

	Favourable (n = 23) (F)		Intermediate (n = 33) (I)		Unfavourable (n = 41) (U)		F vs I	I vs U	F vs U
	Mean	s.d.	Mean	s.d.	Mean	s.d.			
C.A.S.									
Information/Orientation	9.7	(2.6)	8.8	(2.5)	7.1	(3.2)	NS	P < .01	P < .01
Mental ability	9.9	(1.5)	8.1	(3.2)	7.6	(3.0)	P < .01	NS	P < .01
Psychomotor	9.1	(2.9)	5.9	(4.6)	4.9	(4.3)	P < .01	NS	P < .01
Total	28.5	(5.7)	23.2	(8.5)	19.7	(8.6)	P < .01	P < .10	P < .01
S.G.R.S.									
Physical disability	1.7	(1.7)	2.7	(2.4)	4.4	(2.6)	P < .10	P < .01	P < .01
Apathy	3.9	(2.6)	4.9	(2.6)	5.9	(2.4)	NS	NS	P < .01
Communication difficulties	0.3	(0.5)	0.3	(0.6)	0.6	(1.1)	NS	NS	NS
Social disturbances	0.9	(1.0)	1.0	(1.1)	1.5	(1.6)	NS	NS	NS
Total	6.7	(4.5)	8.8	(5.5)	12.3	(6.2)	NS	P < .01	P < .01
Age in years:	67.0	(5.3)	70.1	(7.8)	74.3	(7.8)	NS	P < .05	P < .001

All the CAS and SSGRS variables differentiated between the favourable and unfavourable outcome groups, as did Age. The favourable outcome group is distinguished from the other groups by the Mental Ability and Psychomotor scores of the CAS, while unfavourable outcome is principally distinguished by total behavioural disability and poor Information/Orientation score. Cut-off points were selected to maximize the accuracy of prediction of favourable outcome.

By analysing the distribution of all the variables, the following criteria seemed to offer the best combined discriminatory power—for favourable outcome (SSGRS Total score < 10, CAS Total score > 18, Psychomotor and Mental Ability > 7, and Age < 76). When all four criteria were met a correct classification of 'favourable' or 'not favourable' (intermediate and unfavourable combined) was achieved for 80 per cent of the total sample. While this represents correct classification of 85 per cent of the 'not favourable' group only 66 per cent of the 'favourable' outcome group were correctly identified. However the 'favourable' group contained nine patients making heavy demands on the primary care services and when these were excluded prediction of favourable outcome increased to 79 per cent correctly allocated.

Prediction of unfavourable outcome was similarly investigated; employing three criteria (SSGRS Total score > 18, CAS Total score < 18, Information/Orientation < 8) a correct classification was achieved for 72 per cent of the total sample, which in turn represents 80 per cent correct classification as not unfavourable (favourable and intermediate combined) and 62 per cent correctly classified as unfavourable. While the assessment data provided only a moderate degree of predictive accuracy this represents a significant improvement over employing diagnostic criteria alone and this is particularly true for the prediction of favourable outcome.

Discussion

The observed relationship between the assessment variables and outcome confirms Whitehead's (1976) findings of the importance of cognitive impairment in predicting poor outcome in psychogeriatric patients. The results of this study may therefore be seen as adding to the predictive validity of the present procedures in the assessment of cognitive and behavioural competence in the elderly. In addition to the advantages of brevity and test acceptability, the procedures appear to be at least as effective as longer and more complex measures of cognitive functioning.

Our study confirms the generally poor prognosis for elderly female patients almost irrespective of their diagnosis. It should be noted that the diagnosis of dementia in the present sample is significantly associated with poor outcome in terms of prolonged use of hospital beds. Although it is possible that the relatively high survival rate for these patients is the result of admission at an earlier stage of their illness than is usual, it may be that such patients are tending to survive longer. If so this has considerable implications for the turnover rate and consequent pressure on hospital beds for the elderly psychiatric patient.

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