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The Stockton Geriatric Rating Scale: A Shortened Version with British Normative Data

By C. J. GILLEARD and A. H. PATTIE

Summary. This paper presents information on a shortened form of the Stockton Geriatric Rating Scale, which is shown to be as effective as the original version in discriminating among the elderly. The results for 400 people in the care of hospital or social services provide provisional normative data for the use of the scale, which should be of value in assessing the behavioural competence of the elderly on an individual and group basis.

Introduction

The Stockton Geriatric Rating Scale was developed for use in the assessment of elderly patients in hospital (Meer and Baker, 1966). It has been found to be one of the most promising rating scales for geriatric patients (Salzman, Shader, Kochansky and Cronin, 1972), and the need for a British standardization has already been emphasized (Munnichs and Bigot, 1973). A Dutch version, the BOP (van der Kam, Mol and Wimmers, 1971) has been standardized and is used extensively in Holland. Use of the rating scale by the present authors in a wide variety of settings suggested that some of the items were not always applicable, especially outside the hospital setting, and furthermore that some were found to have consistently low inter-rater reliabilities. Consequently, a shortened version of the scale (18 items) has been developed and this has been extensively used with elderly people in both hospital and social services settings. This paper is concerned with presenting tentative norms for its use in this country.

Procedures

Development of the shortened scale

Inter-rater reliabilities of the original 33 items were calculated, employing the Kappa coefficient as described by Hall (1974) on two samples of acute elderly psychiatric patients and psychogeriatric patients. Although the inter-rater reliability of total scores on the scale was comparable with that found in Meer and Baker's original study (r = ·86, compared with ·87), Kappa coefficients on individual items varied from ·00 to ·91. Items with Kappa values consistently below 0·40 and two items inapplicable to British populations were rejected. Some minor modifications were made to the terminology of the items and 'he/she' substituted for 'the patient'. This left 18 items; six related to physical disability (PD), (items 4, 5, 11, 15, 17 and 18 from the original version), five from the apathy scale (AP) (originally 16, 21, 24, 26 and 29), two related to communication difficulties (CD) (14 and 20 from the communication failure items), and five related to social disturbance (SD) (2a, 7, 8, 10a and 27 of the original socially irritating behaviour scale items). Additional items in the present version included assessment of vision and hearing, but these are not included in the scoring. Product-moment correlations between the scores of the long and shortened versions with a number of different groups were calculated for the purpose of investigating the degree of common variance between the two. The correlation coefficient for the total sample (n = 290) was ·97.

Further investigation of the inter-rater reliability of the 18-item scale was made on samples of elderly people in social services accommodation and in hospital. The mean correlation coefficients obtained from these samples are

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TABLE I
Comparison of mean inter-rater reliability co-efficients of the Stockton Geriatric Rating Scale, short and long versions

	Short	Long
Physical disability ..	·81	·67
Apathy	·84	·84
Communication difficulties	·72	·75
Social disturbance ..	·74	·27
Total	·87	·86

presented above—for each of the four sub-scales and for total scores.

Despite the shortened length of the new rating scale there is a general improvement in the inter-rater reliability which is most marked for the social disturbance scale. It seems reasonable to conclude that the shortened version represents a reliable measuring instrument of the behavioural competence of elderly people. The shorter length and exclusion of inappropriate items has in practice made it more acceptable to raters in a variety of settings.

The normative samples

The present normative data were obtained from a sample of 400 people over the age of 60 from hospital and social services settings. These included 100 each of patients from admission, chronic psychiatric and psychogeriatric wards and residents in social services ('Part III') accommodation. Attempts were made to maintain a 2 : 1 ratio for female : male subjects and to obtain a distribution of three age ranges, 60+, 70+ and 80+ in an approximate proportion of 2 : 2 : 1. This was in an attempt to reflect approximately sex and age ratios in the population generally, and although this was possible for sex differences for all the groups in the sample, the age proportion could be obtained for acute and chronic psychiatric samples only, and the reverse proportion occurred in the psychogeriatric and social services populations, where the majority of the populations were in their 70s and 80s.

RESULTS

The results are presented for the three broad groups of acute psychiatric patients, chronic patients and social service 'Part III' residents, giving means, standard deviations and quartile ranges for the four sub-scale and total scores on the Stockton scale. There were no significant differences between men and women in age or scores in any of the sample groups, and hence the results are presented for men and women together.

(a) *The acute psychiatric patient sample*

This represents a group of 100 patients recently admitted to the acute wards of a psychiatric hospital, fifty of whom had a functional illness and fifty a diagnosis of dementia. The ratings were made during the first fortnight of their stay in hospital, but in all cases the diagnosis was confirmed over a one-year follow-up period.

The results show consistent differences between the scores of functional and organic groups, with considerably greater impairment in behavioural competence in the organic groups. The degree of separation between the two groups of acute patients (25 per cent overlap) is similar to that found with the original version of the Stockton (Pattie and Gilleard, 1975, 1976).

(b) *Non-acute hospital samples*

These patients again represent a functional and organic group. The 100 functional patients had been in hospital for at least two years (in most cases many years) with a diagnosis usually of schizophrenia. The organic group, all admitted after the age of 60 with a diagnosis of dementia, had been in hospital for at least three months. These patients form a psychogeriatric group, but do not include the bedridden in the chronic sick wards who do not present psychiatric problems as such, although in practice they frequently remain in psychiatric hospitals.

As would be expected, the chronic psychiatric patient shows less behavioural disability than his psychogeriatric counterpart. The long-stay functional patients show a significantly greater degree of behavioural handicap than those with a functional diagnosis who have been recently admitted, but there is very little difference between the organic groups, although the long-stay organic patients have a slight, but significantly, higher physical dependency score.

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TABLE II

Means, SDs and inter-quartile ranges of shortened Stockton Geriatric Rating Scale scores

Samples		Mean	sd	Q_1*	Median	Q_3*
ACUTE						
Functional, n = 50	PD	1·7	(1·7)	0·0	1·0	3·0
(Mean age 71·8±8·0)	AP	4·2	(2·7)	2·0	4·0	6·5
	CD	0·1	(0·4)	0·0	0·0	0·0
	SD	0·8	(1·3)	0·0	0·0	1·0
	Total	6·9	(4·7)	3·0	6·0	9·5
Organic, n = 50	PD	4·8	(2·7)	3·0	4·5	6·0
(Mean age 72·9±7·9)	AP	7·2	(2·6)	5·0	7·0	8·5
	CD	1·1	(1·3)	0·0	0·5	2·0
	SD	2·0	(1·8)	0·0	1·5	3·0
	Total	15·1	(6·7)	9·5	14·0	19·0
CHRONIC						
Psychiatric, n = 100	PD	3·0	(2·6)	0	2·5	4
(Mean age 69·2±6·8)	AP	5·3	(2·9)	2·5	5·5	7·5
	CD	0·9	(1·2)	0	0·0	1·5
	SD	1·9	(2·0)	0	1·0	3
	Total	11·1	(7·3)	5	11·0	16·0
Psychogeriatric, n = 100	PD	5·8	(2·5)	4	6	8
(Mean age 76·6±7·1)	AP	7·4	(2·1)	6	8	9
	CD	1·2	(1·2)	0	1	2
	SD	2·0	(1·9)	0·5	2	3
	Total	16·3	(5·3)	13	16·5	20·5
SOCIAL SERVICES						
Part III, n = 75	PD	3·0	(2·0)	1	3	4
(Mean age 77·6±7·5)	AP	4·5	(2·9)	2	4·5	6·5
	CD	0·2	(0·5)	0	0	0
	SD	1·2	(1·6)	0	0·5	2·0
	Total	8·9	(5·3)	5	8	13·0
EMI, n = 25	PD	5·2	(4·0)		4·5	
(Mean age 78·2±9·0)	AP	5·4	(2·9)		6·0	
	CD	0·8	(0·9)		0·5	
	SD	2·3	(2·3)		2·0	
	Total	13·7	(8·1)		12·5	

PD—Physical disability; AP—Apathy; CD—Communication difficulties; SD—Social disturbance.

* Q_1 and Q_3 represent the first and third quartile points, with 25 per cent of scores lying below Q_1 and 25 per cent above Q_3. These points are not given for the EMI sample because of the small n.

TABLE III

Correlations between Stockton scores for total sample (n = 400)

	Physical disability	Apathy	Communication difficulties	Social disturbance	Total
Age	·20	·16	−·09	·02	·14
Physical disability		·70	·60	·33	·89
Apathy			·57	·33	·88
Communication difficulties				·26	·71
Social disturbance					·58

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(c) *Social services sample*

These ratings were obtained from four different Part III homes for the elderly. Fifty persons were already resident and 25 newly admitted. Since these two groups showed no significant differences they have been combined to form a representative Part III population. The results for a further group of 25 residents in a hostel for the elderly mentally infirm (EMI—Part III accommodation) are given but not combined with the others, as they represent a more handicapped population than is found in most Part III homes.

The residents in ordinary Part III homes, although of a similar age group to the psychogeriatric population, show less impairment in all areas of behaviour. Behavioural disability and need for nursing care is obviously important in allocating elderly people to hospital or residential care, and this is reflected in the scores. As already stated, the EMI home group represent more severe disability than normally seen and are only marginally better than the patients in the psychogeriatric wards of the hospital. It would appear that the greatest overlap between social services and hospital care exists in the EMI population, although even in the traditional Part III there is a significant proportion whose level of disability would seem to match that of hospitalized dementias.

Relationships Between Sub-tests and Between Age and Scores

Correlations were obtained also between the different sub-test scales for the total sample and each sample separately. The correlations for the total sample are presented in Table III where it can be seen that all the sub-test scores correlate with each other and with the total at a significant level ($P < \cdot001$), suggesting that all the sub-scales are influenced by a general factor of behavioural handicap. This high correlation between the sub-test and total scores of the Stockton scales makes it possible to use total scores in assessing the comparability of an individual to any of the given groups, while a more detailed behavioural profile of assets and deficiencies can also be obtained for comparison between and within groups.

The low correlations between age and scores suggest that with an elderly population age does not by itself account for much of the variance in behavioural competence. It is worth noting however, that in the acute functional group the correlation between age and total score was higher ($r = \cdot38$) whereas in the acute organic sample there was a small negative correlation ($r = -\cdot20$). This suggests that behavioural ratings of the very elderly may not discriminate so clearly between diagnostic groups, and when these particular groups are considered it is probably wise to take age into account in using the normative tables.*

Conclusions

It has been the intention of the authors to present some British normative data on a modified version of the Stockton Geriatric Rating Scale. The use of standardized rating scores in the assessment of the elderly offers the opportunity of developing an objective methodology for placing the elderly within hospital and social services settings in addition to its use as an instrument for monitoring individual change in an institutional framework.

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* A more detailed breakdown of scores according to age is available from the authors on request.

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