

Beck depression inventory in general practice

M. R. SALKIND, M.R.C.S., L.R.C.P., M.R.C.G.P.

London

THE early diagnosis of depression has become increasingly important to family doctors. The majority of depressions which come to the notice of doctors in the United Kingdom are now solely treated by general practitioners (Rawnseley) and family doctors are still the only effective screening agents. Additionally, the impetus towards the involvement of general practitioners in clinical research is gaining momentum. In the psychiatric field they are concerned not only with the identification of the early depressive, but they are now participating in the clinical evaluation of new products, the comparison of existing antidepressants and the serial evaluation of patient's moods, alongside many other lines of enquiry. An objective assessment of depression, valid in general practice is therefore of importance, and the current study is an attempt to remedy the absence of published validation studies in the general practice field.

The Beck Depression Inventory provides a self-rating measurement of the behavioural manifestations of depression (Beck *et al.*) and consequently promises to be a useful and accurate research instrument, especially valuable in multicentre trials since it bypasses the clinician's subjective bias. For use in general practice a method requires to be easily answered, easily applied by a clinician, easily and rapidly scored; it should be accurate and reliable. The BDI fulfils these requirements more closely than other existing scales. It can be completed by the patient in a few minutes and can be scored easily. The MMPI was not designed specifically for the measurement of depression. It uses outdated psychiatric nomenclature, and factor analytic studies (Comrey) show that the depression scale contains a number of heterogenous factors only one of which is consistent with the clinical concept of depression. The Hamilton rating although fairly concise and sensitive (Dunlop), does not have a 'cutting score'; is more time consuming to apply and score; and is not self-rating. Whilst self-rating scales have obvious deficiencies and defects, the BDI appears to possess a high degree of validity when compared with clinical assessments made by four American psychiatrists (Beck *et al.*). It has been validated in hospital in Britain (Metcalf and Goldman), who reported the "DI (Beck) has proved a simple and satisfactory method of assessing the level of depression in patients suffering from depressive illnesses . . . and should provide a numerical score which could be compared with other quantitative data". Their study, however, was confined to clinically-diagnosed depressives in the hospital. Some care must be taken in interpretation of these results since only 37 patients were used to yield 120 ratings (taken at intervals during hospital stay). A more interesting comparison with the present study is the application of the BDI to 153 general medical inpatients in an American hospital (Schwab *et al.*). This sample, like the general-practitioner sample, was composed of patients with organic illnesses who were not selected for psychiatric disorders. Of this group 34 of 153 (22 per cent) were provisionally diagnosed as depressed by various members of the medical staff and of these 34 only eight (24 per cent) had BDI scores of 14 or more. Schwab suggests that the 'cutting score' of 10 is a suitable demarcation point since of the 34 patients who were clinically depressed 47 per cent scored 10-13 and 74 per cent of those diagnosed as clinically depressed had a score of 10 or above.

Method

In this study a serial sample was taken. The first 80 patients coming into the consulting room were asked to complete the BDI.

The Beck depression inventory

The BDI consists of a list of descriptive statements related to 21 aspects of depression. For each category there are 4–5 statements of increasing severity. The patient reads the scale and marks the statement most applicable to himself. The score for each item ranges from 0–3; the total score falls between 0–62.

All 80 patients requested an item of service ranging from a repeat prescription, to a complete physical check-up. One patient refused on the grounds of time. One patient was unable to fill out the scale. It transpired that she was unable to read or write. Five were spoiled for various reasons. (With more care all five need not have been spoiled.) Most patients were able to complete the questionnaire without difficulty. It was handed to the receptionist and the patient then entered the consulting room and was interviewed and treated in the normal way. A forecast was then made for each patient on the following 4-point rating scale:

- 0 No depression.
- 1 Mild depression, i.e. symptoms, but *no* interference with work or social life.
- 2 Moderate depression. *Some* but not considerable interference with work or social life.
- 3 Suicidal, or severe interference with work or social life extending into inability to work.

This forecast was then transferred to the completed questionnaire which was sent to an independent observer for scoring and analysis.

Cutting score

In the context of results the exact cut-off point is critical. Schwab in his series on general medical inpatients felt that 10 was an appropriate 'cutting score' for distinguishing between non-depressed and depressed patients; i.e. scores of 10 and above, denote depression. He quotes a personal communication from Beck (1963) stating that minimally depressed or non-depressed patients score 0–13, mild to moderate 14–24, severely depressed 25+. His results at a cut-off of 10 correlated highly with the Hamilton scale. Beck in his original paper, and Metcalfe, both dealing with a wholly depressed population suggest a 'cutting score' of 17 (Spearman Rank Correlation 0.75). One would expect a higher cut-off point in a depressed population than in a random sample in general practice, where fine variations are more evident in the normal social setting and are easier to detect.

Results

From the figures in tables I and II it is apparent that there is a significant difference between the non-depressives and the remainder ($p=0.01$). There is not so great a significance between the means for scores one and two, (just significant at the 5 per cent level).

The optimum cut-off point in the general-practice field would appear to be 11, a higher score denoting depression. This corresponds well with Schwab, slightly lower than Beck 1963 (0–13), significantly lower than Metcalfe, and is lower than Beck's original paper (1960) suggested. A 'cutting score' of 11 would appear reasonable because of the finer differences observable in general practice and would answer the question raised in the OHE publication *The early diagnosis of depression*—"The appropriate 'cutting scores' to allow optimum discrimination between patients with and without depression would require further research in the general practice setting".

It would appear that in general practice therefore, the appropriate scores would be:

No depression	0–10
Mild depression	11–17
Moderate depression	18–23
Severe depression	23 and above

On a 'cutting score' of 11 it appears that 48 per cent of patients presenting in a general practitioner's surgery, could be classified as being in a depressed state. This is

TABLE I
INDIVIDUAL SCORES ON BECK DEPRESSION INVENTORY

<i>Clinician's forecast score</i>	<i>Beck score</i>	<i>Clinician's forecast score</i>	<i>Beck score</i>
0=No depression	0 4 7 10 cut-off	2=Moderate depression	5 cut-off 19
Number of patients—38	0 4 8 11	Number of patients—16	11 19
	1 5 8 11		14 19
	1 5 8 13		14 20
	2 5 8 13		14 24
	2 5 9 13		16 26
	2 6 9 17		16 26
	3 6 9 19		16
	4 6 10		16
	4 7 10		
	1=Mild depression		7 13
Number of patients—17	7 13	Number of patients—2	30
	7 14		
	8 cut-off 15		
	11 19		
	11 22		
	12 22		
	12 28		
12			

TABLE II
MEANS AND SD FOR SALKIND COMPARED TO OTHERS

	<i>No depression score 0</i>		<i>Mild score 1</i>		<i>Moderate score 2</i>		<i>Severe score 3</i>	
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>
Salkind	6.6	4.2	13.7	5.9	17.2	5.4	28.0	2.8
Metcalfe	5.4	5.9	14.3	8.4	24.2	10.8	29.5	6.5
American study (Beck)	10.9	8.1	18.7	10.2	25.4	9.6	30.0	10.6
Schwab	9.1	—	← Mean 11.8 →				SD 5.5 →	

clearly to be differentiated from those suffering from a depressive illness. Even so, given that this is an isolated result, and that a doctor with an interest in the psychiatric side of general practice might well attract a higher proportion of patients with psychiatric disorders, this is a figure which by any standards is startling.

The practice concerned is in an area populated by social groups IV and V and the high depression figures could be partially accounted for by Schwab's demographic observation "the only significant difference between these groups is concerned with their financial status; most of the scores on the BDI were given by patients of lower economic levels!"

TABLE III
CORRELATION CO-EFFICIENT BETWEEN BDI AND FORECAST (RATING) OF DEPTH OF DEPRESSION

<i>Study</i>	<i>Correlation co-efficient</i>
Salkind ..	.73
Beck66
Metcalfe ..	.62

A figure of this level clearly requires further investigation. If it is in any way representative of the total patient population, then re-evaluation of the scale of depression in the community, already known to be considerable (Watts, 1966), is an urgent necessity.

Table IV is self explanatory. Pessimism, sleep disturbance, fatiguability, lack of satisfaction, self accusation and a mood disturbance allied to a sense of failure, form

TABLE IV
NUMBER OF PATIENTS MARKING THE APPROPRIATE SECTION IN A WAY +VE FOR DEPRESSION IN ORDER OF PRIORITY

<i>Patients not depressed</i>	<i>Depressed patients</i>
Irritability 24	Sleep disturbance 31
Fatiguability 22	Pessimism 31
Sleep disturbance 18	Irritability 30
Work inhibition 14	Fatiguability 29
Somatic preoccupation 11	Lack of satisfaction 28
Loss of libido 9	Self accusations 27
Self accusations 8	Mood 25
Lack of satisfaction 8	Sense of failure 25
Social withdrawal 6	Self hate 23
Crying 6	Indecisiveness 23
Loss of appetite 6	Work inhibition 23
Weight loss 6	Crying 22
Body image 5	Somatic preoccupation 19
Pessimism 4	Loss of libido 17
Mood 3	Social withdrawal 15
Sense of failure 3	Body image 15
Sense of punishment 3	Self punitive 13
Indecisiveness 3	Sense of punishment 12
Self hate 2	Guilty feeling 10
Guilty feeling 0	Loss of appetite 10
Self punitive 0	Weight loss 8

a diagnostic group in themselves. Of the 43 non-depressed patients 24 were positive for increased irritability, as were 30 of the depressed group—(i.e. 54 out of 73). The

TABLE V
DISTRIBUTION OF PATIENTS' SCORES ON GIVEN CUTTING SCORES (EXPRESSED AS PERCENTAGES)

<i>Study</i>	<i>No depression</i>	<i>Mild</i>	<i>Moderate</i>	<i>Severe</i>	<i>Total</i>	<i>Number of patients</i>
Salkind: General medical patients	52	23	22	3	100	73
Beck: American study psychiatric inpatients	28	31	33	8	100	409
Metcalfe and Goldman: psychiatric inpatients ..	27	37	20	17	100	120 (ratings not patients)
Schwab	78	←———22———→ Prov. diagnosed			100	153

total of 26 out of 73 patients admitting to some loss of libido is also of interest and merits further investigation.

Discussion

It would appear from these results that the BDI is indeed an acceptable objective instrument capable of refined assessment of depression in general practice; easy to apply and score; suitable for clinical trials, particularly multi-centre trials. It can be used to standardize criteria for entry to a trial as well as for serial evaluation of progress. It can reveal depressions hidden from the clinician. (In the current survey one misdiagnosis was a forecast of 0 depression in a patient who subsequently was found to have a score of 19. It transpired on special interview that he was a withdrawn patient, unquestionably depressed but withdrawn to the extent that he was unable to communicate his depression). It would seem therefore, to be a suitable screening aid, and a useful diagnostic aid in clinically doubtful cases. It has raised at least one basic question. What is the true extent of all grades of depressive illness—(not only severe depressive illness)—in our community?

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General practice today

Not a week goes by, in general practice, without the doctor discovering amongst his morning mail yet another regular newspaper or journal orientated towards general practice and sent free of charge. The majority of these publications, some of them quite valuable, are financed by the big pharmaceutical firms as an advertising medium. Our own abstract journal, in a sense, is in the same category. In these publications, at which I am sure the average general practitioner has only time to glance, there are an increasing number of articles written on the manner in which the delivery of primary care should be organized and delivered to the public in the future. Authors vary from general practitioners to doctors working along the fringes (e.g. in social medicine) of the real situation, rarely coping with the heavy winter evening surgery and carrying out the arduous winter visit list. Not enough views are heard from the practitioner in the front line of the delivery of this primary medical care because he is so involved in meeting the 'service' demands that he has not the time to sit back, think and plan the operational research which should yield the facts necessary for the proper planning of medical care 20 years on. Most would agree that those who say that the general practitioner is on the way out are absolutely wrong. With the continuing rapid growth of knowledge and, therefore, the need for greater specialization, it is absolutely essential that there should be not only a generalist but a generalist with a high degree of training and skill for his particular role in the delivery of this scientific medical care that will be available in the future. The plans of our College for vocational training for general practice are, therefore, particularly welcome and relevant, in spite of difficulties that the implementation of such a policy may arouse initially.

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