Problems in using the hospital anxiety and depression scale for screening patients in general practice

ANTHONY C DOWELL

LEONARD A BIRAN

SUMMARY. A study was made of the feasibility of screening general practice patients for anxiety and depression using the hospital anxiety and depression scale. A group of consecutive patients aged 18 years and over completed the questionnaire at the surgery and an age and sex matched sample were sent questionnaires by post; 94 patients (84%) returned the postal questionnaire. A further group of 170 consecutive patients coming for consultation were recruited.

Using a threshold score of eight and over, 51% of patients screened by post were probable 'cases' of psychiatric disorder and using a score of 11 and over, 28% were 'cases'. These proportions were similar for patients screened when attending the surgery. The findings are discussed in the context of well-person screening, and a strategy for follow-up of probable cases is put forward.

Introduction

A VALIDATION study of the hospital anxiety and depression scale[1] in general practice was recently published in this journal by Wilkinson and Barczak.[2] The authors were impressed by the ease of completion of the scale and concluded that it had 'immense possibilities for well-person screening and general practice research'. The pilot study reported here looked at the feasibility of using the hospital anxiety and depression scale for well-person screening by post of a general practice population. Two groups of patients were screened, one a sample of patients presenting for any cause in the surgery, and the other an age and sex matched sample approached by post.

Method

One hundred and thirty consecutive patients aged 18 years or over who were attending for a consultation completed the hospital anxiety and depression scale on arrival in the surgery before seeing the general practitioner. Another 130 people on the practice's list were age and sex matched with the first group, using the age–sex register, and were sent the scale by post with an accompanying letter asking them to complete the scale for research purposes; 18 of the letters were returned by the Post Office. Ninety four patients from the postal survey returned completed scales giving a final response rate of 84%. This gave 94 matched pairs. The members of this final sample who filled in the questionnaire at the surgery were not significantly different from the initial 130 in their age–sex characteristics or in their distribution of hospital anxiety and depression scale scores. In an extension of the study, a further 170 consecutive patients coming for a consultation were recruited, giving a total sample of 394.

AC Dowell, MRCGP, lecturer, and LA Biran, MRCGP, senior lecturer, Department of General Practice, University of Leeds.
Submitted: 18 April 1989; accepted: 12 July 1989.

Threshold scores and definition of a 'case'

In their original paper on the hospital anxiety and depression scale Zigmond and Snaith[1] proposed two threshold scores for clinically significant degrees of disorder, applicable to both the depression and anxiety subscales. Scores of eight and over were to be used 'should the researcher require inclusion of all possible cases, that is a low proportion of false negatives', and scores of 11 and over 'where the research requires the inclusion of only those patients who have a high probability of suffering from the mood disorder, that is a low proportion of false positives'. Wilkinson and Barczak's general practice validation study used a relative operating coefficient curve to derive a single optimum threshold score of eight for either subscale.[2] They considered a patient scoring at or above the threshold on either subscale to be a probable case of psychiatric disorder, without differentiating anxiety from depression. The present study reports the results for thresholds of eight and 11.

Results

The yield of 84% for a postal questionnaire is good,[3] confirming the impression[2] that patients complete the hospital anxiety and depression scale readily.

The distribution of patients from the postal sample according to the different threshold scores is shown in Table 1. Using a threshold of eight and over, as many as 51% would be regarded as probable cases of psychiatric disorder (48 out of 94, the sum of all 'case' and 'doubtful case' cells). The more specific threshold of 11 still gave a substantial 28% as probable cases (26 out of 94, the sum of all 'case' cells).

The distribution obtained for the sample of patients consulting at the surgery was very similar to that of its matched postal

Table 1. Number (%) of patients in the age–sex matched postal and consulting samples and for all 300 consulting patients in different hospital anxiety and depression (HAD) scale threshold ranges. Ranges defined in accordance with Zigmond and Snaith.[1]

	HAD depression scale			
HAD anxiety scale	Non-cases 0–7	Doubtful cases 8–10	Cases ⩾11	Total
Postal sample				
Non-cases 0–7	46 (*49*)	4 (*4*)	1 (*1*)	51 (*54*)
Doubtful cases 8–10	18 (*19*)	0 (*0*)	3 (*3*)	21 (*22*)
Cases ⩾11	9 (*10*)	4 (*4*)	9 (*10*)	22 (*23*)
Total	73 (*78*)	8 (*9*)	13 (*14*)	94 (*100*)
Consulting sample				
Non-cases 0–7	47 (*50*)	1 (*1*)	0 (*0*)	48 (*51*)
Doubtful cases 8–10	16 (*17*)	2 (*2*)	3 (*3*)	21 (*22*)
Cases ⩾11	15 (*16*)	2 (*2*)	8 (*9*)	25 (*27*)
Total	78 (*83*)	5 (*5*)	11 (*12*)	94 (*100*)
All consulters				
Non-cases 0–7	148 (*49*)	9 (*3*)	3 (*1*)	160 (*53*)
Doubtful cases 8–10	51 (*17*)	8 (*3*)	5 (*2*)	64 (*21*)
Cases ⩾11	38 (*13*)	17 (*6*)	21 (*7*)	76 (*25*)
Total	237 (*79*)	34 (*11*)	29 (*10*)	300 (*100*)

sample as well as to that of all consulting patients (Table 1). This similarity was also found in separate analyses for each sex and for different age groups. The prevalence of anxiety and depression for the whole group of 394 patients was 28% (95% confidence intervals 23% to 35%) using the threshold score of 11 and 51% (95% confidence intervals 45% to 57%) using the threshold of eight.

Taking the postal sample as the model for well-person screening, Table 2 shows the proportions of patients in different sex and age groups that would be identified as cases at both threshold scores — the 'yield' of a postal community screening exercise.

Table 2. Number (%) of patients with anxiety and depression in the postal sample (including 95% confidence intervals).

	Total number of patients	Percentage of cases (95% confidence limits)	
		Threshold ⩾8	Threshold ⩾11
Whole sample	94	*51 (40–61)*	*28 (19–38)*
Men	36	*47 (28–67)*	*11 (4–28)*
Women	58	*53 (39–68)*	*38 (25–53)*
Age 18–45 yrs	56	*45 (31–59)*	*25 (14–40)*
Age 46–65 yrs	22	*64 (40–85)*	*32 (13–57)*
Age 65+ yrs	16	*56 (28–82)*	*31 (10–60)*

Discussion

A surprising finding of this study was the similarity in scores on the hospital anxiety and depression scale between the postal and the consulting sample. It might be expected that frequent attenders would be over-represented in the consulting sample and that this sample would therefore have a higher prevalence of psychiatric morbidity.[4] The similarity found in our study may have been a random event, given the confidence interval for a sample of 94 (40–61%) or a particular feature of our sample. It is also possible that a bias operated, for example that in the postal survey people with psychological problems were relatively more ready to complete the hospital anxiety and depression scale. However, the effect of such a bias could not have been great in view of the high response rate to the postal questionnaire. If the result is not due to such factors, it raises questions about the relationship between hospital anxiety and depression scale scores and frequent consulting.

A second important finding was the unexpectedly high proportion of 'cases' (approximately 50%) in both the postal and the consulting samples, using the threshold scores of Wilkinson and Barczak.[2] If the main aim of well-person screening is to offer help to those who need it, rather than merely to establish an epidemiological datum, our results suggest that using the hospital anxiety and depression scale with this threshold could entail recalling and interviewing half of a practice population. We think that the study raises two issues which need to be addressed in the context of such an exercise in preventive care.

The first issue concerns threshold scores. Although reported prevalence rates of anxiety and depressive disorders in the community vary widely between different studies, a number of authors have found rates around 30% or less.[4-9] Having administered the hospital anxiety and depression scale in the present study to a large sample of nearly 400 patients, we found a prevalence of 28% using Zigmond and Snaith's threshold score of 11. However, Wilkinson and Barczak's general practice threshold of eight gave the much higher prevalence of anxiety and depression of 51%. This finding raises doubt whether the threshold score of eight is appropriate for our population. It may be that the relative operating coefficient curve and the threshold that Wilkinson and Barczak obtained in their study do not apply to all general practice settings, leaving an uncertainty about what threshold a general practitioner should use in screening.

The second issue concerns strategy. Whether the proportion of probable cases in a practice population is 30% or 50%, subsequent interviewing of so many people would be a formidable task and some of this work would prove to have been unnecessary. One reason for this is the expectation that a large number of those scoring near the threshold would turn out to be non-cases.[10] A second is the likelihood that many non-consulting patients with a detectable degree of anxiety or depression are in fact carrying on their lives without severe functional disturbance, a possibility envisaged in the *Diagnostic and statistical manual (DSM III)*[11] descriptions of anxiety and depressive neurosis. Such people may not benefit from medical intervention.

To diminish the size of the follow up and increase the chances of useful intervention it may be best to ignore the thresholds, and instead to base the follow up strategy on the correlation between the hospital anxiety and depression subscale scores and the severity of the disorder.[1] The first step in such a strategy would be to list patients in decreasing order of their scores, taking the anxiety and depression subscales separately. The follow up would start with the patients with the highest scores, who are the most likely to need a doctor's intervention. It would then proceed down the list to progressively lower scores. The threshold, that is the score below which no diagnostic interview would be arranged, would be decided pragmatically, and depend upon the perceived best use of the practice's resources in the face of the diminishing yield of patients found to need treatment as lower scores are reached.

We feel that the issues raised point to a need for further research before the hospital anxiety and depression scale can be regarded as suitable for well-person screening in general practice when treatment is the main aim.

References

1. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. *Acta Psychiatr Scand* 1983; **67:** 361-370.
2. Wilkinson MJB, Barczak P. Psychiatric screening in general practice: comparison of the general health questionnaire and the hospital anxiety depression scale. *J R Coll Gen Pract* 1988; **38:** 311-313.
3. Oppenheim AN. *Questionnaire design and attitude measurement.* London: Heinemann, 1978: 34.
4. Westhead JN. Frequent attenders in general practice: medical, psychological and social characteristics. *J R Coll Gen Pract* 1985; **35:** 337-340.
5. Shepherd M, Clare A. *Psychiatric illness in general practice* (second edition). Oxford University Press, 1981.
6. Goldberg D. Identifying psychiatric illness among general medical patients. *Br Med J* 1985; **291:** 161-162.
7. Goldberg D, Bridges K. Screening for psychiatric illness in general practice: the general practitioner versus the screening questionnaire. *J R Coll Gen Pract* 1987; **37:** 15-18.
8. Skuse D, Williams P. Screening for psychiatric disorder in general practice. *Psychol Med* 1984; **14:** 365-377.
9. Freeling P, Rao BM, Paykel ES, *et al.* Unrecognised depression in general practice. *Br Med J* 1985; **290:** 1880-1883.
10. Goldberg D. Use of the general health questionnaire in clinical work. *Br Med J* 1986; **293:** 1188-1189.
11. American Psychiatric Association. *Diagnostic and statistical manual of mental disorders* (3rd edition). Washington DC: APA Publications, 1980.

Address for correspondence

Dr AC Dowell, Department of General Practice, Clinical Sciences Building, St James' Hospital, Leeds LS9 7TF.