

The Hospital Anxiety and Depression Scale $\text{\AA}\text{\AA}\text{\AA}$: A Simple and Rapid Instrument for Evaluation of Depression in Psychiatric Settings

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The utility of the Hospital Anxiety and Depression Scale (HADS) as screening instrument for depression in psychiatric settings in Pakistan was investigated. Method : A two stage screening procedure involved the use of HADS against the ICD-10 Diagnostic Criteria for Research and Hamilton Rating Scale for Depression (HRSD). Results : Sensitivity for depression sub-scale of HADS was 95%, specificity 93%, false negative rate 5% and false positive rate 7%. A correlation of +0.39 ($p < 0.005$) between scores of depression on HADS and HRSD was calculated. Conclusion : The HADS is a valid measure for screening 'caseness' of depression in psychiatric settings as well. It could usefully be employed by the researchers for rapid evaluation of depression among the psychiatric patients.

Key words: Hospital anxiety, depression, old age, HRSD.

A need exists for a simple screening instrument for depression applicable in the psychiatric units. Such an instrument when validated in hospital settings, can facilitate research and save time-consuming evaluation process.

The Hospital Anxiety and Depression Scale (HADS) (Zigmond and Snaith, 1983) was devised as screening instrument to detect anxiety and depression in non-psychiatric medical patients. With the cut-off score of 11, HADS depression sub-scale had a specificity of 94% and sensitivity of 67% in patients with concurrent medical illness. The internal consistency of the scale was reported; correlation between each item and the total score ranged from +0.41 to +0.76 for anxiety items and +0.30 to +0.60 for depression items. Initially the scale was validated by examining the correlation of the sub-scale scores and a psychiatrist's global score which were +0.70 and +0.74 for depression and anxiety respectively. The internal reliability was approximately +0.90 for both anxiety and depression. Zigmond and Snaith concluded that the HADS seems to be the best instrument available for simple and rapid evaluation of psychological interventions in patients with physical illness (Peck, 1993).

The HADS was translated into Urdu in Pakistan at Mayo Hospital by Mumford et al (1991). The authors formed a translation committee who finalised the Urdu text of the HADS after translations, back-translations and subsequent modification. They also considered a previous Urdu version (Nayani, 1989 cited by Mumford et al, 1991). The new translation was evaluated in bilingual population and the conceptual equivalence by two-way classification of high and low scorers. Mumford et al used the cut-off points below which a clinically significant syndrome of anxiety or depression is unusual (7/8) and above which a clinically significant syndrome is probable

(10/11) (Zigmond and Snaith, 1983). In this study, using the cut-off point of 7/8, the validity of the depression sub-scale of this screening instrument has been investigated in psychiatric patients.

Methods

The setting for the study was the psychiatry department of Mayo Hospital which constitutes a busy out-patient and a 60-bedded inpatient unit. Mayo Hospital is affiliated to the King Edward Medical College which is located in the centre of Lahore city. All the new psychiatric patients, seeking treatment on outdoor basis or admission into the ward, during the year 1996 were included into the study. As the first stage of screening, the patients were requested to complete the Urdu version of HADS, while they were waiting for interview. Illiterate responders were helped by house officers or students of diploma in clinical psychology. Thereafter, on each responder, a non-structured interview was carried out independently of the screening stage by the trainee psychiatrist. The diagnosis of depressive episode (F32) and recurrent depressive disorder (F33) was made on the basis of ICD-10 Diagnostic Criteria for Research (WHO, 1993). The patients of drug addiction, schizophrenia, schizoaffective disorder, anxiety disorder and organic disorder were excluded. The diagnosed patients were also rated on Hamilton Rating Scale for Depression (HRSD) (Hamilton, 1976) to assess severity of depressive symptomatology.

The sensitivity and specificity of HADS depression sub-scale was calculated by constructing two-way table (Table - 2) (Regier and Burke, 1995). Correlation coefficient (r) (Pearson product moment correlation) between the scores of depression on the HRSD and HADS depression sub-scale was calculated (Table - 3) to assess the convergent validity of HADS and its ability to

differentiate between different degrees of depression.

Results

Table 1: Breakdown of patients in psychiatric Out-patient Department of Mayo Hospital, Lahore during the year 1996

Total new patients seeking treatment.	4976
Psychiatric patients excluding the patients of drug abuse	4526
Patients of depression detected by using HADS (23% of the total)	1145
Patients of depression diagnosed according to ICD-10 Diagnostic Criteria for Research (18% of the total)	931

HADS = Hospital Anxiety and Depression Scale

Table - 1 gives the breakdown of the new patients in the psychiatric out-patient department of Mayo Hospital during the year 1996. The number of patients detected as

'caseness' by HADS and diagnosed as depressed according to the ICH-10 Diagnostic Criteria for Research were 23% and 18% of the total attenders. This denotes the incidence rate of depression among the attenders of the psychiatric units in Pakistan. The finding is in line with the rate (6% - 30%) reported by Sathi (1986) in the settings of psychiatric clinics in this sub-continent.

Table - 2 shows the calculations of sensitivity (95%), specificity (93%), false negative rate (5%) and false positive rate (7%) of depression sub-scale of HADS against the ICD-10 Diagnostic Criteria for Research. The sensitivity and specificity of HADS is higher than found in other studies with the medically ill population or in community sample (Abiodun, 1994).

Table 2: Sensitivity and specificity of HADS ää sub-scale depression (cut-off score 7/8)

		ICD-10DCR		
		Depression present	Depression Absent	Total
HADS	Depression present	a=884	b=261	a+b= 1145
	Depression absent	c=47	d=334	c + d= 3381
		a+c= 931	b+d=3595	4526

$$\text{Sensitivity} = \frac{a}{a+c}$$

$$\text{Specificity} = \frac{d}{b+d}$$

$$\text{False -ve rate} = \frac{c}{a+c}$$

$$\text{False +ve rate} = \frac{b}{b+d}$$

- Sensitivity of HADS (%) =95%
- False negative rate (%) =5%
- Specificity of HADS(%) =93%
- False positive rate (%) =7%

- HADS= Hospital Anxiety and Depression Scale
- ICD-10DCR=ICD-10 Diagnostic Criteria for Research

Table - 3 gives the correlation co-efficient (r) of +0.39 (p<0.005) between the scores of depression on HRSD and the depression sub-scale of HADS.

Table 3: Correlation between scores on depression scales (n = 1145)

Scale	mean + SD
HRSD	26.73 + 5.87
HADS	13.73 + 4.36
Correlation co-efficient(r)=+0.39 (p<0.005)	

HRSD = Hamilton Rating Scale for Depression, HADS = Hospital Anxiety and Depression Scale

Discussion

The results show that with the cut-off score of 7/8, HADS had 95% sensitivity and 93% specificity when used to screen depression in psychiatric population. These figures are higher when compared to those obtained from patients of medical and surgical wards (sensitivity 90.6%.

specificity 86.7%), patients in antenatal clinics (sensitivity 90.1%, specificity 91.1%) and a community sample (sensitivity 89.5%, specificity 91.1%). (Abiodun, 1994). The improved sensitivity and specificity is explainable on the basis of the ability of HADS to detect specifically mood state rather than somatic symptoms in depressed psychiatric patients.

The low correlation co-efficient ($r = +0.39$) between depression sub-scale of HADS and the HRSD indicates only moderate ability of HADS to differentiate between different degrees of depression. Therefore, HADS may not be used to discriminate between in-patient, out-patient and community cases like some other screening instruments e.g. PSE Index of Definition (ID) (Peck, 1993).

In conclusion, the HADS appears to be a valid measure for detecting 'caseness' of depression in psychiatric settings as well. HADS could usefully be employed by researchers for rapid evaluation of depression in patients attending psychiatric units/clinics. This simple and time-saving application of this instrument needs further research.

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