CORRELATION BETWEEN THE ADI SELF RATING SCALE, THE HAMILTON RATING SCALE AND CLINICAL ASSESSMENT OF DEPRESSION

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In all clinical and research work, it is important not only to have uniform diagnostic criteria but also some means of objectively quantifying the presence and severity of the illness being studied. For this purpose, a number of rating scales have been devised for depressive disorders, probably the single most commonly used one being the Hamilton Rating Scale (Hamilton, 1960). The total score on this scale thus reflects the severity of depression—the maximum possible score is 52 but in practice, few patients score above 35.

A few self rating scales have also been devised—most prominently being the Beck Depressive Inventory and the Zung Self Rating scale (SRS). Several studies have reported low concordance between Psychiatrists ratings and the SRS—the obvious explanation may be related to the wording of the SRS and the difficulty experienced by patients in grading the severity of their symptoms. It was suggested that any self Rating Scale to be useful must have a number of items concerning behaviour and somatic symptoms of depression in addition to subjective feelings (Carrol et al., 1973). The ADI is one such scale developed on the basis of symptoms and signs of the depression as manifested by Indian patients (Singh et al., 1974). It consists of a total of 30 statements which the subject has to tick as either present or absent, the total 'yes' responses reflects the presence and severity of the depression. It was therefore considered important to Validate the scale against the HRS and global clinical assessment by a trained Psychiatrist.

MATERIAL AND METHOD

The sample consisted of 74 severely depressed patients in the Psychiatry ward of Rajindra Hospital, Patiala, with a diagnosis of Manic Depressive Psychosis and 105 patients admitted in the medical ward—the detailed characteristics of the sample from medical ward have been described in an earlier report (Singh et al., 1979) of these 44 were found to be suffering from depression while the remaining 61 were not depressed and served as the control group. Out of these 44 depressed subjects, 6 were diagnosed as suffering from Manic Depressive Psychosis, thus along with 74 Psychiatric depressives (Manic depressive Psychosis) gave a total of 80 patients which were diagnosed as "severely depressed" group while remaining 38 were diagnosed as Reactive depression (Depressive Neuroses, (ICD-8), and formed the group of "mild depressives" for purposes of the present analysis.

All subjects were first interviewed by the Psychiatrist who made a clinical diagnosis and assessment of severity of illness and also filled out the HRS. All patients were interviewed within 5 days of their admission to the hospital. The ADI was
administered independently by the social worker who was unaware of the clinical status of the patient. Literate subjects were read out the instructions and then requested to complete and return the questionnaire while in case of illiterate subjects, the question statements were read out and their responses recorded.

RESULTS

Clinically the patients were diagnosed as either depressed (N=118) or not depressed (N=61). All the depressed patients were classified as suffering from Manic depressive Psychosis (N=80) or Reactive depression (Depressive Neuroses) (N=38). The former were all suffering from a severe degree of depression that warranted admission to hospital for treatment. The cases of Reactive depression were those detected on routine screening of all medical in-patients, those not found to be clinically depressed, serving as controls.

The severe depressives (MDP) had higher mean scores on both ADI (24.96, SD 3.30) and HRS (24.06, SD 4.38) as compared to mild or Reactive depressives (ADI=21.08; SD 4.56; HRS=15.96; SD 5.61) (Table 1). The difference is more clearly reflected in the Hamilton Rating Scale although on both tests, the difference is significant. The control group had low scores on ADI (Mean=7.41, SD=3.71) as well as HRS (Mean=8.43, SD=3.52). Both tools clearly distinguish the total depressive population with a mean ADI score of 23.53 and mean HRS score of 21.05 from the control group at 0.001 level of significance.

Calculation of correlation coefficients for the two scales revealed that in the case of mild depressives, the two tests showed strong positive correlation of 0.64 (p < .001) but for severe depressives, although the correlation is still positive, it fails to reach significance (r=+.18, p<0.10) (Table 2). This difference becomes more clear in

| Clinical Categories | ADI Mean±SD | HRS Mean ±SD |
|---------------------|-------------|--------------|
| Severe depression   | 24.98±3.30  | 24.06±4.38   |
| Mild Depression     | 21.08±4.56  | 15.96±5.61   |

On ADI
Severe dep. Vs mild dep. : t=5.08, p < .001
All dep. Vs non dep. : t=17.05, p < .001
On H.R.S.
Severe dep. Vs mild dep. : t=3.99, < .001
All dep. Vs non-dep. : t=19.22, p <0.01

| TABLE 3—Clinical rating of 105 medical patients and their Scores on ADI and HRS |
|-----------------------------------------------|
| Definitely depressed | Probably depressed | Not depressed |
| N | N | N | N |
|------------------|------------------|---------------|
| Clinically       | 44               | 61             |               |
| ADI              | 40 90.21 3 6.82 62 | 2 2.27         |
| HRS              | 25 56.82 13 29.55 67 | 6 13.63        |

Table 3 which shows a further breakdown of the depressed patients as per the recommended cut off points for the two tests for ADI—Singh et al. (1974, 1979) and for Hamilton Rating Scale Hamilton (1960, 1969).
Cut off points used for ADI were as follows:

Score below 13: Not depressed
Score between 13-15: Probably depressed
Score above 15: Definitely depressed.

Cut off points used for HRS were:
Scores below 12: not depressed
Scores between 12-15: Probably depressed.
Scores above 15: Definitely depressed.

It becomes evident that on the ADI Scale, 40 out of 44 (90.91%) clinically diagnosed depressed patients, screened in the medical ward obtained scores of 15 and above while 3 were probably depressed and 1 not depressed. Thus percentage of misclassification if we include the probably depressed patients was only 2.27%. In the case of HRS on the other hand only 25 out of 44 got scores in the definitely depressed range (56.82%), 13 in the probably depressed and 6 in the not depressed range, thus misclassification was 13.63%.

DISCUSSION

The results of the investigation have shown that both the ADI and HRS are highly effective in differentiating depressed from non-depressed patients, the ADI having the advantage of having a significantly lesser number of depressed subjects misclassified as non-depressed (2.27% Vs. 13.63%) and also fewer number in the probably depressed range (6.82% Vs. 29.55%). The two scales show a strong positive correlation (r = +.64) when given to a mixed group of subjects with predominantly mild reactive depressions but shows a rather poor correlation (r = +.18) when administered to severely depressed psychiatric in-patients. Apparently, the ADI is a more sensitive reflection of the patient's subjective distress. Patients tend to score much higher on the ADI, so that a higher number of patients tend to amass on the right side of the distribution giving a higher negative skewness (SK = -0.40) as compared to HRS (SK = -0.16), whereas the HRS tends to show a wider spread of scores so that quantification of the severity of depressives would be likely to be more accurate. We found a considerable ambiguity in the lower range of scores with a higher percentage of misclassifications of HRS as compared to ADI.

Apparently, there can be no absolute measure of severity of an illness—particularly an illness with a predominant subjective component, there are obvious features which would invalidate either a clinical interview, a self rating scale (e.g. ADI) or the HRS, such as deliberate denial or exaggeration of illness, lack of awareness of the nature of certain symptoms or lack of knowledge by doctor in eliciting and recording the symptoms etc. In most studies, it would seem to be ideal to use both these scales in addition to the global psychiatric rating, since the ADI is primarily measuring the subjective state of distress of the individual whereas the HRS attempts to quantify in a standardised manner the severity of the illness. The ADI has the advantage of being a simple, standardised test requiring hardly 10 minutes for the patient to fill and highly effective in differentiating depressed from non depressed patient—thus making an ideal screening test for depression. On the other hand the HRS is more effective in quantifying the severity of depression and hence would be more useful in long term studies, e.g. drug trials to show progressive changes in scores over a period of time, the disadvantage—being that it requires more time to complete and is open to subjective error by the rating psychiatrist.

REFERENCES

Beck, A. T. et al. (1961). An inventory for Measuring depression. Arch. Gen. Psychiatry, 4, 561.

Carroll, B. J., Fielding, J. M., Blaskhi, T. G. (1963). Depression Rating Scales. Arch. Gen. Psychiatry, 28, 361.
HAMILTON, M. (1960). A rating scale for depression. J. Neurol. Neurosurg. Psychiat., 23, 56.

HAMILTON M. (1969). Standardized assessment and recording of depressive symptoms. Psychiat. Neurol. Neurochir., 72, 201.

SINGH, G., VERMA, H. C., VERMA, R. S., KAUR, H. (1974). A new depressive Inventory (Amritsar Depressive Inventory). Indian J. Psychiat., 16, 183.

SINGH, G., SACHDEV, J. S., KAUR, H. (1979). Prevalence of depression among medical inpatients. Indian J. Psychiat., 21, 274.

ZENG, W. W. K. (1965). A self Rating Depression Scale. Arch. Gen. Psychiat., 12, 63.