PSYCHOLOGICAL MEDICINE

Validation of the Malay Version of Hospital Anxiety and Depression Scale (HADS) in Hospital Universiti Sains Malaysia

Fariza Yahya, Zahiruddin Othman

ABSTRACT

Objective: To validate the translated Malay version of the HADS and determine the optimal cutoff point and respective sensitivity and specificity.

Design: Cross sectional study.

Materials and Methods: Sixty cases and 60 controls were assessed using the Malay version of HADS followed by interviewed using Hamilton Rating Scale for Anxiety (HDRS), Hamilton Rating Scale for Depression (HARS) and then reassessed by using the fourth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) to establish the diagnosis.

Results: The best cutoff point was 8/9. Sensitivity 90.0% and specificity 86.2% for anxiety and sensitivity 93.2% and specificity 90.8% for depression was detected

Conclusion: Malay version of HADS showed a good sensitivity and specificity and therefore is valid instrument for use in a Malaysia population.

KEY WORDS

validation, hospital anxiety depression scale (HADS), anxiety, depression

INTRODUCTION

Questionnaires and rating scales with good psychometric qualities have turned out to be valuable complements to interviews and tests in the evaluation of different kinds of psychiatric disorders[1]. To date, there are many international well-validated forms but only a few of them has been validated into Malay version.

Hospital Anxiety and Depression Scale (HADS) was originally designed to assess psychological distress of patients in medical and surgical settings, the Hospital Anxiety and Depression Scale[2] has now been evaluated and validate for different medical and psychiatric patient populations[3-5], and non-medical populations[6].

Zigmond and Snaith[2] advocated cut-offs between 8 and 10 for 'possible cases', and scores of 11 or more for 'definite cases'. The rates of prevalence reported using the HADS differ markedly. For instance, Hall, A'Hem, and Fallowfield[7] report a rate of 13.5% for anxiety and 7.5% for depression in breast cancer patients using a cut-off of 11. These rates increased to 39.4 and 16.5% for anxiety and depression, respectively, using a threshold of 7. Hopwood, Howell, and Maguire[8] reported that 27% of their sample of women with breast cancer had a probable case of affective disorder using a HADS threshold of 11. Similarly, Hopwood and Stephens[9] reported levels of depression at 33% and anxiety at 34% in a sample of patients with lung cancer. Poole and

Morgan[10] reported that 85% and 86% of their sample of with cardiomyopathy had anxiety or depression respectively at a cutoff score of 10. The present study aimed to validate the translated Malay version of the HADS and determine the optimal cutoff point and respective sensitivity and specificity of this version of the scale.

METHODOLOGY

Translation of the HADS

The HADS was translated into Malay language using back-translation method. Four schoolteachers who are bilingual in both English and Malay translated the HADS into Malay. Three English tutors who are bilingual translated the Malay version back into English. Both scales, original and back translated English, were compared to determine accuracy of translation.

Instruments

a) Hospital Anxiety and Depression Scale (HADS)
The HADS is a 14-item scale that requires respondents to endorse a

Table 1. Specificity, sensitivity and Positive Predictive Values of
HADS scores (Anxiety Portion) based on HARS scores
and DSM-IV criteria

HADS scores (anxiety)	Sensitivity%	Specificity%	Positive Predictive Value %	Area Under the Curve
5	100.0	50.0	68.1	0.777
6	98.4	69.0	77.2	0.867
7	98.4	74.1	80.3	0.894
8	93.5	79.3	82.9	0.897
9	90.0	86.2	87.5	0.917
10	85.5	94.8	94.6	0.907
11	79.0	96.6	96.1	0.898
12	72.6	96.6	95.7	0.789
13	61.3	96.6	95.0	0.734

Table 2. Specificity, Sensitivity and Positive Predictive Values of
HADS scores (Depressive Portion) based on HDRS
scores and DSM-IV criteria

HADS scores (Depression)	Sensitivity%	Specificity%	Positive Predictive Value %	Area Under the curve
5	95.5	57.9	56.8	0.684
6	95.5	68.4	63.6	0.723
7	95.5	76.3	71.3	0.752
8	95.5	82.9	76.4	0.776
9	93.2	90.8	85.4	0.810
10	88.6	98.7	97.5	0.781
11	77.3	100.0	100.0	0.707
12	61.4	100.0	100.0	0.672
13	52.3	100.0	100.0	0.658

verbal response which is scored as an index of the severity of anxiety or depression. The scores are then summed to produce two subscales corresponding to Anxiety (HADS-A), and Depression (HADS-D). As well the subscale totals, an overall total can be derived to indicate the level of psychological distress. The original two-factor structure of the HADS, corresponding to the Anxiety and Depression subscales, has been confirmed by a number of subsequent studies[2,3,5].

b) Hamilton Rating Scale for Depression (HDRS)[1]

This is designed to be filled at the end of the unstructured interviewed lasting about 30 minutes. It consists of 17 items; each rated on a 3-or 5-point scale. The scale mainly measures behavioural and somatic aspects of depression rather than psychological and cognitive ones. It is not designed as a diagnostic instrument.

c) Hamilton Rating Scale for Anxiety (HARS)[1]

This is designed to be filled at the end of the unstructured interviewed lasting about 30 minutes. It consists of 14 items; each question has a scale from 0-3 reflecting the severity of the symptoms. Possible scores on the HARS range from 0-56.

Subjects

Cases were patients whom had been diagnosed as having depression or anxiety disorder that had attended psychiatric clinic from November 2001 till December 2001.The controls were among the staffs and patient's relatives whom agreed to participate and not known to have any kind of psychiatric diagnosis. 120 participants had been involved in the study by which 60 of them were patients and the rest were controls.

All consented participants were given the Malay version of HADS. They were then interviewed by first author using HDRS and HARS and then reassessed by using the forth edition of Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1994) to establish the diagnosis.

STATISTICAL ANALYSIS

The data were analyzed using SPSS version 10.0. The validity and reliability of HADS was tested against HDRS and HARS by using correlational analysis. The specificity, sensitivity and positive predictive value of HADS was measured based on DSM-IV criteria.

RESULTS

The HADS score for anxiety group ranged from 0-20 with the mean of 8.6 ± 4.9. 25% of the samples scored between 3-5 and only 1.6% sores between 18-20. The HADS score for depressive group ranged from 0-20 with the mean of 7.20 ± 4.82. Majority of the sample scores between 3-5 that was about 23.3% and only 1.7% scores between 15-17.

At 8/9 cut-off points, the sensitivity is 90.0% and specificity is 86.2%. The use of higher cutoff point would reduce the sensitivity to 85.5% but increase the specificity to 94.8% and positive predictive

value 94.6%. Lowering the cut-off point of HADS to 7/8 would reduce the specificity to 79.3% and positive predictive value to 82.9% but increase the sensitivity to 9 3.5 %.

At 8/9 cut-off points, the sensitivity is 93.2% and specificity is 90.8%. The use of higher cutoff point would reduce the sensitivity to 88.6% but increase the specificity to 98.7% and positive predictive value to 97.5%. Lowering the cut-off point would reduce specificity to 82.9% and positive predictive value to 76.4% but increase sensitivity to 95.5%.

DISCUSSION

This study aimed to test the validity of HADS as a screening tool to identify anxiety and depression in Malaysian populations. We use DSM-IV as a benchmark against which the HADS was tested. The most important point is that with this cutoff point, the instrument was able to identify all the cases of anxiety and depression (sensitivity 90.0% and specificity 86.2% for anxiety and sensitivity 93.2% and specificity 90.8% for depression). Adopting the conventional 10/11 cutoff point in detecting anxiety and depression for the Malay version HADS will miss a higher portion of population with anxiety and depression.

Silverstone[2] in a study of medical psychiatric patients reported different sensitivities and specificities at cutoff points ranging from 8-14. Sensitivity is percentage ratio of true-positives identifications to true positives plus false negatives; specificity is the percentage ratio of true-negatives to true negatives plus false positives. With the cutoff point at eight or above the HADS has a sensitivity of 100% for the 9 out of 143 medical patients and 80% for the 40 psychiatric patients who were diagnosed as depressed out of total study group of 147. It has a specificity of 73% for medical patients and 28% for psychiatric patients. However its positive predictive value (defined as the percentage ratio of true-positives to true-positives plus false positives) with the cutoff point at eight, was 19% for medical patients and 29% for psychiatric patients. Although these values improve with higher cutoff point, Silverstone[1] cautions against inappropriate use of HADS as a diagnostic instrument, pointing out that it is intended only as clinical indicator of the possibility of depression and anxiety.

From this study the use of lower cutoff point will increase the sensitivity but reduce the specificity and positive predictive value, and the use of higher cut-off point will reduce the sensitivity but increase the specificity and positive predictive value. Therefore based on this validation study, 8/9 was used as cut-off point for both anxiety and depression parts of HADS to find out the prevalence of anxiety and depression in HUSM staffs.

CONCLUSION

This study found that 8/9 was the best cutoff point, by which the sensitivity 90.0% and specificity 86.2% for anxiety and sensitivity 93.2% and specificity 90.8% for depression was detected. Even though

in most of other studies found that 10/11 was the best cut-off point. Adopting the conventional 10/11 cut-off point in detecting anxiety and depression for the Malay version HADS will missed a higher portion of population with anxiety and depression.

REFERENCES

1) Myers K, Winters NC. Ten-year review of rating scales. 1: Overview of scale function-ing. pychometric properties, and selection. J Am Acad Child Adolesc Psychiatry 2000; 41(2): 114-22

2) Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand 1983; 67(6): 361-70.

3) Spinhoven P, Ormel J, Slockers PP, Kempen GI, Speckens AE, Van Hemert AM. A vali-dation study of the Hospital Anxiety and Depression Scale (HADS) in different groups of Dutch subjects. Psychol Med 1997; 27(2): 363-70.

4) White D, Leach C, Sims R, Atkinson M, Cottrell D. Validation of the Hospital Anxiety and Depression Scale for use with adolescents. Br J Psychiatry 1999; 175: 452-4.

5) Singer S, Kuhnt S, Götze H, Hauss J, Hinz A, Liebmann A, Krauss O, Lehmann A, Schwarz R. Hospital anxiety and depression scale cutoff scores for cancer patients in acute care. Br J Cancer 2009; 100(6): 908-12.

6) Dagnan D, Chadwick P, Trower P. Psychometric properties of the Hospital Anxiety and Depression Scale with a population of members of a depression self-help group. Br J Med Psychol 2000; 73(Pt 1): 129-37.

7) Hall A, A'Hern R, Fallowfield L. Are we using appropriate self-report questionnaires for detecting anxiety and depression in women with early breast cancer? Eur J Cancer 1999; 35(1): 79-85.

8) Hopwood P, Howell A, Maguire P. Screening for psychiatric morbidity in patients with advanced breast cancer: validation of two self-report questionnaires. Br J Cancer 1991; 64(2): 353-6.

9) Hopwood P, Stephens RJ. Depression in patients with lung cancer: prevalence and risk factors derived from quality-of-life data. J Clin Oncol 2000; 18(4): 893-903.

10) Poole NA, Morgan JF. Validity and reliability of the Hospital Anxiety and Depression Scale in a hypertrophic cardiomyopathy clinic: the HADS in a cardiomyopathy popu-lation. Gen Hosp Psychiatry 2006; 28(1): 55-8.

11) Hamilton M. Development of a rating scale for primary depressive illness. Br J Soc Clin Psychol 1967; 6(4): 278-96.

12) Silverstone PH. Poor efficacy of the Hospital Anxiety and Depression Scale in the diag-nosis of major depressive disorder in both medical and psychiatric patients. J Psychosom Res 1994: 38(5): 441-50.

HOSPITAL ANXIETY AND DEPRESSION SCALE (HADS) – MALAY VERSION

Saya berasa tertekan / tersepit / serabut: A
- □ Sepanjang masa — 3
- □ Banyak kali / kerapkali — 2
- □ Kadang-kadang — 1
- □ Tiada langsung — 0

Saya berasa kurang / tidak secergas dahulu: D
- □ Hampir sepanjang masa — 3
- □ Kerap kali — 2
- □ Kadang-kadang — 1
- □ Tidak langsung — 0

Saya masih seronok melakukan perkara yang dahulunya menyeronokkan: D
- □ Seperti dahulu/biasa (tiada perubahan) — 0
- □ Tidak seseronok dahulu — 1
- □ Seronok sedikit sahaja — 2
- □ Tidak lagi/hampir tiada lagi keseronokan — 3

Saya berasa takut / berdebar-debar / gementar: A
- □ Tidak langsung — 0
- □ Jarang-jarang — 1
- □ Agak kerap — 2
- □ Kerap kali — 3

Saya selalu berasa ketakutan seolah-olah seperti sesuatu yang buruk akan berlaku: A
- □ Sememangnya dan amat teruk sekali — 3
- □ Ya tetapi tidaklah terlalu teruk — 2
- □ Ada sedikit tetapi tidak membimbangkan saya — 1
- □ Tidak ada langsung — 0

Saya sudah hilang minat terhadap keterampilan diri sendiri: D
- □ Sememangnya agak kurang minat dari biasa — 3
- □ Kurang minat dari biasa / yang seharusnya — 2
- □ Kadang-kadang mungkin kurang minat dari biasa — 1
- □ Tidak hilang minat – masih seperti biasa — 0

Saya boleh ketawa dan dapat menyukai / Nampak perkara-perkara yang melucukan: D
- □ Sememangnya seperti dahulu — 0
- □ Tidaklah seperti dahulu — 1
- □ Sememangnya tidak seperti dahulu — 2
- □ Hanya kadang-kadang — 3

Saya berasa tidak tenang / gelisah / seolah-olah saya perlu sentiasa membuat kerja / bergerak: A
- □ Sememangnya banyak kali — 3
- □ Agak kerap — 2
- □ Tidak terlalu kerap — 1
- □ Tidak langsung — 0

Perkara-perkara yang merisaukan / membimbangkan kerap bermain di fikiran saya: A
- □ Hampir sepanjang masa — 3
- □ Banyak kali — 2
- □ Dari masa kesemasa — 1
- □ Hanya jarang-jarang / kadang-kadang — 0

Saya sentiasa mengharapkan keceriaan / kegembiraan apabila melakukan sesuatu perkara: D
- □ Sama seperti dahulu — 3
- □ Tidak seperti dahulu — 2
- □ Sememangnya amat kurang daripada dahulu — 1
- □ Tidak / hampir tidak berasa ceria langsung — 0

Saya berasa ceria: D
- □ Tidak ada langsung — 3
- □ Tidak selalu — 2
- □ Kadang-kadang — 1
- □ Sepanjang masa — 0

Saya mengalami panik / keadaan gementar secara tiba-tiba: A
- □ Sememangnya banyak kali / kerap kali — 3
- □ Agak kerap — 2
- □ Tidak kerap / kadang-kadang — 1
- □ Tidak pernah langsung — 0

Saya boleh berasa relaks dan duduk dengan selesa: A
- □ Sememangnya — 0
- □ Selalunya / kerap kali — 1
- □ Tidak selalu / kadang-kadang — 2
- □ Tidak boleh langsung — 3

Saya dapat merasai nikmat / keseronokan apabila melakukan sesuatu seperti membaca buku yang menarik / mendengar radio / menonton rancangan televisyen yang menarik: D
- □ Kerap kali — 0
- □ Kadang-kadang — 1
- □ Tidak selalu — 2
- □ Jarang-jarang sekali — 3

Fariza Yahya, Zahiruddin Othman. Validation of the Malay Version of Hospital Anxiety and Depression Scale (HADS) in Hospital Universiti Sains Malaysia. International Medical Journal 2015; 22(2): 80-82.