Comparison between two tests measuring anxiety and depression with Saudi normative data

Muwafak Al-Eithan
King Saud University

Introduction:

It is common knowledge now that many psychological disorders are associated with many physical illnesses and disorders. Much research work has highlighted this widely observed fact (see for example, Nabarro, 1985; Mayou, and Hawton, 1986) and shows that particularly mood problems are present in patients with general medical conditions, where anxiety and depression are most common.

Not only anxiety and depression are very common psychological complaints in medical set-ups (e.g. primary health and medical and surgery) (Mayou, and Hawton, 1986), but often physicians misdiagnose and mistreat them, resulting in prolonged investigations and treatment (Aylard, et al, 1987). This, needless to say, has implications on both human suffering and the cost of health services in any country. Hence, the importance of having to raise the awareness of physicians (in most clinical practices) in the area of depression and anxiety in their patients, as well as other psychological problems. The awareness can be made through a system of training as well as introducing easy and accurate instruments for the assessment of anxiety and depression. However, most tests for anxiety and depression are contaminated, naturally, with items assessing symptoms related to physical changes which in turn may be related to physical (not psychological) disorders. Such symptoms may include, weight loss, insomnia and anergia (Aylard, et al, 1987; Snaith and Zigmond, 1994). Hence, we need tests which assess anxiety and depression without such contamination for the physically ill people.

Two tests (the HADS and the Leeds) are an example of such tests, Snaith et al 1976; Zigmond and Snaith, 1983). The HADS is a particularly widely used instrument in clinical as well as research practice now (Snaith and Zigmond, 1994).

The main features of these two tests are that there is a separation of the anxiety and depression concepts. This allows the clinician to determine what specific mood problem (anxiety or depression) the patient might suffer from. Furthermore, the symptoms which might be reflecting physical illness are not included in these tests (Aylard, et al, 1987, Zigmond and Snaith, 1983, Snaith and Zigmond, 1994). These characteristics enhance the specificity and sensitivity of the tests (see for example, El-Rufaie and Absood, 1987). Obviously, it increases the applicability of these tests in clinical/ medical set-ups, for both research and clinical work. It is well established that the HADS, for example, is a valid instrument which provide detection and assessment of anxiety and depression in a general hospital population (see, Aylard, et al , 1987; El-Rufaie and Absood, 1987; Snaith and Zigmond, 1984).

The present study aimed to compare two simple instruments designed to measure anxiety and depression in a clinical setting, and to see if they can be interchangeably used in Saudi Arabia. The first one is (the Hospital Anxiety and Depression Scale- (HADS), Zigmond, Snaith, 1983) and the second is (Leeds scale for anxiety and depression – (Leeds scale) (Snaith, Bridge and Hamilton, 1976). The Leeds scale has less work published on it. The HADS enjoys many studies on its validity and reliability (see for example, Aylard, et al, 1987; Moorey, et al, 1991; Snaith and Zigmond, 1994).

Limited work has been carried out in Arabic studies, as far as I am aware. In Saudi Arabia, however, (El-Rufaie, and Absood, 1987) it has been demonstrated that the HADS has a good reliability and validity in a clinical sample. The test showed strong specificity and sensitivity in both anxiety and depression sub scales, for Saudi patients. But we do not have normative data on the Saudi population.

Methods:

Sample:

109 Saudi males were the subjects who volunteered for the present study. They come from different parts of the Kingdom, but all live in Riyadh as university students. Their mean age was (23 years, SD= 1.8).

Instruments:

1- HADS

This scale consists of 14 items and provides a brief measure of anxiety and depression, seven items each (Zigmond and Snaith, 1983; Snaith and Zigmond, 1994). It was primarily designed to be used in a medical out-patients set ups, to detect the presence and the severity of anxiety and depression. The scale is easy and self-administered, and it takes about 5-10 minutes to answer. The scoring is very simple, and ranges between 0 and 3, and the total is from 0 to 21 for each sub-scale (anxiety and depression).

The scores between 0-7 is considered within the normal range, 8-10 possible mild clinical cases, 11-14 moderate, and 15-21 sever degree, for each sub-scale (see, Snaith and Zigmond, 1994; Turner, and Lee, 1998).

A score which is above (8) resulted in very few false positives and false negatives when compared with psychiatric assessment.

The scale does not include physical related questions, as this might influence the scores. It is also considered as a good scale for monitoring changes in mood.

There is good evidence of both reliability and validity of the scale in many studies (see for example, Zigmond, and Snaith, 1983; Moorey, et al, 1991).

The scale proved to be one of the best brief scale to assess anxiety and depression in clinical-medical set up, measuring both mood states.

2- Leeds Scale

This is another small scale to assess anxiety and depression (Snaith, Bridge, and Hamilton, 1976), which is again a very brief and easy self-rating test to measure the state instead of the trait of anxiety and depression. The scale was developed after modification of another mood scale (Wakefield Depression Inventory). The modified version of the scale consisted of 22 items, but the item analysis showed that 15 items of the total were more specifically distinguishing between the anxiety and depression states. These 15 items were the ones used in the current study, (8) for anxiety and (7) for depression. These items were also found to be highly correlated with the clinical rating, showing more validity.

The scoring is ranging from 'definitely' (3), 'sometimes; (2), 'not much' (1), to 'not at all'(0). The subjects were asked to answer how they felt at the time(their current mood state), without assistance from others.

A cut-off point score of (7) proved to be a very satisfactory division between the healthy and clinical population.

Both tests were administered on the Saudi sample in one session, in a group set up.

Results:

1-Reliability study:

Before carrying out the study, a reliability study was carried out on 21 subjects. Both scales were very reliable when repeated over a week period, (Alpha) scores were as follows: for HADS anxiety (.898) for HADS depression (.872); and Leeds anxiety (.771), and for Leeds depression (.807). Both results indicate high scores of reliability, which we can rely on from a statistical point of view. There was also an interesting consistency between the sub-scale scores and the total score of each test, as shown in table 1 and 2, as will be discussed further.

2- General results:

The mean score of each scale for the whole sample is presented in Table (1).

The table shows that the mean is within the normal range for the two scales as in the original studies. This is suggesting that the scales can be used in a similar way, as in other studies, on a Saudi sample. It also gives us a notion of the normal range of individual assessment, as an indication of normative data for the sample.

Then a correlational analysis was performed to examine the relationship between the two scales; the data is presented in Table (2). It was found that the two scales have a significant correlation between the total scores and between the respective mood scores of each scale. The HADS anxiety and the Leeds anxiety were significantly correlated. The same is found for the two sub-scales of depression. Both results suggest that the two respective sub-scales measure the same mood state, two anxiety sub-scales, and two depression sub-scales.

Then a comparison between the two anxiety sub-scale scores, and between the two depression sub-scales were carried out. The analysis was carried out within and between the two scales. The results are presented in Table –3 .

Table-3 shows that there is no significant difference between the matched mood sub-scales, i.e. no major difference (p=0.04) between the two anxiety sub-scales in HADS and Leeds, also there was no very big difference between the two depression sub-scales (p=0.07).

However, we have a significant difference between the anxiety and depression in both HADS (p< 0.000) and Leeds (p< 0.000),on one hand; and between them in each test p<0.000) on the other. These results suggest that these sub-scales measure different aspects of mood problems, i.e. anxiety and depression. This is in fact what they had been designed for in the first place.

There is also a minimum difference (p=0.04) between the total scores of both tests, indicating good similarities.

The overall results are showing similarities between the norms of the British and Saudi samples.

Discussion:

The present study aimed at comparing two anxiety-depression scales, the HADS and the Leeds scale. These tests have been designed and validated in order to detect and assess anxiety and depression in patients with general physical illnesses (see above). These two tests have mainly separated anxiety from depression in the assessment, and furthermore, are void of items related to physical symptoms (Aylard, et al, 1987; Zigmond and Snaith, 1983; Snaith et al, 1976).

The findings of the present study on normal subjects are very indicative that the two scales are inter-changeable. In other words they are compatible, so either one can be used to replace the other in both clinical practice as well as research. They also showed that the tests could

measure separately two mood aspects, namely anxiety and depression. The present data are very close to that of the western data.

It can be argued, as such, that the two scales can be used in the Saudi population as well, in a similar way as have been used in the west (for example, Moorey, et al, 1991; Turner and Lee, 1998) in both medical set ups and psychological research.

There has been clear differentiation between the two moods (anxiety and depression) measures, which is consistent with the literature (see, El- Rufaie, and Absood, 1987; Moorey, et al, 1991; Sniath and Zigmond, 1994).

The study also, of interest, showed that the mean scores of the normal sample is not different to that of the British sample (for example see, Zigmond and Snaith, 1983; Snaith and Zigmond, 1994; Turner, and Lee, 1998), although the sample is very different from the Saudi clinical population (El-Rufaie and Abssod, 1987) . Admittedly, the sample is not very huge, but good enough in size to show similarities.

The study may also be viewed as validation of the Leeds scale, since the HADS has been validated in a Saudi clinical sample (El-Rufaie, and Absood, 1987), but the present paper presented further data for a normal population. It is fairly reasonable to suggest that the present paper shows that the two scales are both reliable and valid in the present Arabic (Saudi) population. Further research is needed here to widen its applicability, such as to examine if there is any sex or age differences. Although some studies have failed to find any sex differences on similar tests (see Snaith and Zigmond, 1994). In fact more research is underway on different clinical populations in Saudi Arabia, which will be presented in the future.

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Test	Mean	SD
HADS Anxiety	7.61	3.75
HADS depression	5.83	3.59
Leeds Anxiety	7.88	3.96
Leeds Depression	6.33	3.74
HADS total scores	13.19	6.42
Leeds total scores	14.20	7.06

Table -1 shows the mean and SD of each test and sub-scale.

	HADS - anxiety	HADS – depression	HADS total	Leeds - anxiety	Leeds - depression	Leeds total
HADS-anxiety	1.000					
HADS-depression	.664	1.000				
HADS total	.897	.880	1.000			
Leeds - anxiety	.638	.505	.613	1.000		
Leeds-depression	.606	.679	.676	.678	1.000	
Leeds total	.679	.644	.703	.920	.911	1.000

Table -2shows the correlation between the subscales and the total scores of each test. All values are significant (P<0.000).

	Mean	SD	T-value	df	2-tail Sig.
HADS Anxiety	7.614	(3.75)	6.20	108	0.000
Depression	5.825	(3.59)			
HADS Anxiety	7.61	(3.75)			
Leeds Anxiety	7.88	(3.96)	.85	108	0.400
HADS Anxiety	7.61	(3.75)			
Leeds Depression	6.33	(3.74)	4.03	108	0.000
HADS Depression	5.82	(3.59)			
Leeds Depression	6.33	(3.74)	1.79	108	0.076
Leeds Anxiety	7.88	(3.96)			
Leeds Depression	6.33	(3.74)	5.22	108	0.000
HADS total	13.19	(6.42)			
Leeds total	14.20	(7.06)	2.02	108	0.04

Table-3 compares the means of the sub-scales, and the mean of total scores of both tests.

Abstract:

Title: Comparison between two tests measuring anxiety and depression with Saudi normative data.

Introduction:

This study compared two tests of depression and anxiety, the Hospital Anxiety and Depression Scale (HADS), and the Leeds Scale for Depression and Anxiety (Leeds scale). Each test has two sub-scales of anxiety and depression. The tests are designed to be used in a medical set up as well as psychological research and clinical work. The study aimed at examining the suitability of the two tests for the Saudi population and providing some normative data, and comparing the two tests.

Methods:

Sample: 109 Saudi males volunteered for the study. Their mean age was 23 years (SD=1.8).

Instruments: **The HADS and the Leeds scale.**

Results:

There were high reliability scores for each test's sub-scale, over a week- period, ranging from (alpha) .771 to .898.

The results show an average score of HADS anxiety (7.61, sd=3.75) and depression (5.83, sd=3.59); and Leeds anxiety (7.88, sd=3.96) and depression (7.33, sd=3.74). These average scores are similar to the original western data.

There were significant correlations between the two tests, and between all the sub-scales.

Conclusions: The study clearly displays similarities between the two tests. The sub-scales seem to be measuring different mood (anxiety and depression) states.

The normative data presented here matches the original data. The two tests have good reliability scores. The normative data provided here may be useful in future work, and it is similar to other published literature data. Further discussion is also provided.

ملخص الدراسة:

مقارنة بين اختبارين لقياس القلق والاكتئاب مع عينة سعودية

المقدمة:

تقارن هذه الدراسة بين مقياسين للقلق والاكتئاب وتقدم بعض الاحصاءات لعينة سعودية. كل مقياس يتكون من مقياس فرعي للقلق والاكتئاب.لقد صمم هذين المقياسين لقياس القلق والاكتئاب لدى المرضى الذين يعانون من امراض جسمية في المستشفى، ويستخدمان في العمل العيادي والبحثي. تهدف الدراسة الى معرفة ملائمة هذين المقياسين للعينة السعودية بالاضافة الى المقارنة بينهما.

المنهج: تكونت العينة من(١٠٩) متطوع من الذكور والذي كان متوسط العمر (٢٣) سنة وانحراف معياري (١,٨) ، واصولهم من مختلف مناطق المملكة.

وطبق على العينة مقياس (المستشفى للقلق والاكتئاب) ومقياس (ليدز لقياس القلق والاكتئاب).

النتائج: كانت هناك درجات عالية من الثبات لكل المقاييس الفرعية، وتراوح درجة (الفا) بين (.٧٧٢ إلى .٨٩٨).وكان متوسط المقاييس قريب للعينة الغربية، حيث كان متوسط القلق ٧,٦١ (انحراف معياري= ٣,٧٥) والاكتئاب ٥,٨٣ (الانحراف المعياري =٣,٥٩) [على مقياس المستشفى للقلق والاكتئاب] ، ومتوسط القلق [على مقياس ليدز] هو ٧,٨٨ (انحراف معياري= ٣,٩٦) والاكتئاب ٧,٣٣ (انحراف معياري= ٣,٧٤).كل المتوسطات مقاربة مع الدراسات الغربية. كما بينت الدراسة انه هناك ارتباطا احصائيا عاليا بين كل المقاييس الفرعية.

خلاصة:

لقد اوضحت الدراسة التشابه بين المقياسين وانهما يقيسان نفس الجوانب من المزاج (القلق والاكتئاب). كذلك كان اداء العينة متشابها للدراسات الغربية ، فالمقارنة بين متوسط عينة الاسوياء متماثل الى حد كبير. ان درجة الثبات العالية تطمئننا لاستخدام المقياسين . مزيد من المناقشة للمقياسين وصلاحيتهما موجودة في الدراسة.

د. مزاق العيثان

استشاري & استاذ علم النفس العيادي المساعد.

قسم علم النفس – جامعة الملك سعود & المستشفى الجامعي – الرياض.