

Hospital Anxiety and Depression Scale for use with adolescents

I had difficulties in answering important questions about the support of some of the conclusions that White *et al* (1999) draw in their work on validation of the Hospital Anxiety and Depression Scale for use with adolescents.

- (a) It is not clear whether the non-clinical sample used in the study can be considered independent since the method of selection is not mentioned.
- (b) Of the 248 children (110 girls) who were tested first, 180 were re-tested. However, the girl/boy ratio in the latter group is not indicated. Moreover, the out-patient sample comprised 48 subjects (27 girls) and the deliberate self-harm (DSH) sample had 38 subjects (30 girls). Considering the disproportionate group sizes and gender distribution it is surprising to find that the variances in the different groups are homogeneous. However, this information cannot be deduced from the published data. As a result, it is very difficult to assess fundamental requirements for the *F*-test.
- (c) Girls are 44% of the non-clinical sample, 56% of the out-patient sample and, more importantly, 79% of the DSH group. The authors conclude that there is a statistically significant gender difference, with girls scoring higher than boys in both depression and anxiety scales. Assuming that the *F*-test's requirements are met, then it may not seem surprising to find an overall significant difference detected by the *F*-test because of the characteristics of the DSH group.

- (d) As the authors do not report multiple comparisons between the groups, it is not possible to know whether the differences remain when the DSH group is excluded.
- (e) The analysis does not include techniques to control for gender, which appears to be a very important confounder.
- (f) The authors assessed test–retest reliability with Pearson's correlation coefficient. As this technique does not take into account errors of measurement, it does not measure agreement and its results are not meaningful.

White, D., Leach, C., Sims, R., et al (1999) Validation of the Hospital Anxiety and Depression Scale for use with adolescents. *British Journal of Psychiatry*, **175**, 452–454.

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Authors' reply: We welcome the opportunity to clarify the points raised by D. Marchevsky.

- (a) The non-clinical sample was selected by asking the head teachers of each school to choose a selection of mixed-ability classes from each of the school year groups that fitted the age range we had selected.
- (b) Of the 180 adolescents re-tested, 77 (43%) were girls, almost identical to the ratio of the first test sample (44%). The variances in the different groups are indeed heterogeneous, but the results of the analysis hold when the analyses are corrected for this effect or

when non-parametric analyses are carried out. Limited space precluded us from reporting the full analyses.

- (c) The results remain the same whether or not the deliberate self-harm group is included in the analyses.
- (d) Robust multiple comparisons show that, for the depression sub-scale, the out-patients depressed group scores higher than the other three groups, with the other two clinical groups not differing significantly from each other, but both scoring significantly higher than the school sample. For the anxiety sub-scale, the three clinical groups do not differ significantly from each other, but all score significantly higher than the school sample.
- (e) Analyses for each gender separately produce the same results.
- (f) We see no problems with using the Pearson product–moment correlation as a measure of test–retest reliability. There is a long history of using this correlation as a measure of reliability in the psychometric test theory literature. Note that we are not measuring agreement between raters here, for which a measure such as kappa would be appropriate.

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One hundred years ago

Medical fees for lunacy cases

The Devonport Board of Guardians consider that the sum of one guinea is too large a fee for medical men to be paid in pauper lunacy cases and recently approached the borough magistrates with a view to having the fee reduced. At the

meeting of the guardians held on Oct. 12th it was reported that the magistrates did not share the opinion of the guardians. Eventually the board decided to write to the members of the medical profession in Devonport asking them if they would accept a fee of half a guinea for these cases,

and the matter will be again brought before the magistrates.

REFERENCE

Lancet, 20 October 1900, 1172.
Researched by Henry Rollin, Emeritus Consultant Psychiatrist, Horton Hospital, Epsom, Surrey