Author’s response to reviews

Title: The Modified Dental Anxiety Scale: UK population norms in 2008

Authors:

Gerry M Humphris (gmh4@st-and.ac.uk)
Tom A Dyer (T.Dyer@sheffield.ac.uk)
Peter G Robinson (peter.g.robinson@sheffield.ac.uk)

Version: 2 Date: 10 June 2009

Author’s response to reviews: see over
Dear Editor,

Re: The Modified Dental Anxiety Scale: UK population norms in 2008

Thank you for your review report comprising 5 referees’ reports and your recommendations. We are very grateful for the time taken by the referees and have read their comments carefully and found them to be very helpful in focussing our efforts to improve the manuscript. We believe that our amendments have considerably improved the paper. On reflection we have changed the original title to better reflect the content of the paper. We respond to the referee comments by name and have labelled each issue raised by alphabetical letter.

**Referee 1: Jason Armfield:**

We are grateful to this referee for the effort expended in reviewing our paper. Seldom do we see such attention to detail and this has sharpened our manuscript writing considerably.

1a This referee has correctly identified that we have failed to specify properly what our objectives were. We have specified 3 objectives in the paper and listed these at the end of the Introduction and also repeated them in the Abstract.

1b We have referred to the original article in CDH ‘The Modified Dental Anxiety Scale-UK norms and evidence for validity’. We realise that we had not made a comparison to this original paper and have corrected this omission in the Discussion. Our rational for producing a new set of norms for the MDAS is to provide an update as the original CDH paper used data collected about 15 years ago. We believe that this new paper is a helpful addition for UK dentists, especially as the sample drawn was from the general public and not a samples from health service premises (as in the original).

1c We have had extensive discussion with NOP who conducted the telephone administration of the MDAS. The original spreadsheets of the age, gender and social status breakdown showed that the discrepancy between what the survey aimed to collect to attain representativeness and what was actually collected was found to be similar. Admittedly there was a minor over-representation of ABC respondents. This is raised as a limitation in the Discussion. Residential location was a good fit. We therefore do not share this referee’s concern that weighting of the data is required especially as the strength of association between social class and dental anxiety was one of the weakest factors entered into the logistic regression (together with education). The increased complexity of introducing a weighting procedure to the analysis was not considered to be warranted. We note that the other four referees did not raise this

1d The response rate of 14% was admittedly low although as argued immediately above we believe the potential bias was minimal. Other authors using telephone survey techniques also experienced similar problems (with a 18.5% response rate) and use
identical arguments to our own to support the veracity of the data set (see Locker et al 1991, Community Dent. Oral Epidemiol. 19, 120-4).

Minor Essential Revisions

1e We have moved the respondent characteristics to the start of the Results section.

1f The text for Tables 3 and 4 have been expanded to explain the results.

1g Education is now included in Table 4. All socio-demographic variables are now included. In addition the self-reported behavioural variable (regularity of attendance) has been retained as an important factor that has been implicated in dental anxiety invesetigations.

Discretionary revisions

1h page numbers are added although these will alter of course for the proofs. writing and spelling of numbers has been attended to.

1i Percent and % have been altered to exhibit a consistent presentation.

1j Spacing has been corrected between sentences.

1k Paragraphs have been inspected to provide single issue coverage. We do however reserve the author’s opinion of where new issues are being developed in each single paragraph.

1l Tenses have been corrected as suggested.

1m The split infinitive is regarded as less of an issue in modern writing however we prefer the traditional approach as presented in our original. Whatever approach is taken however the essential meaning is the same.

1n We have changed the word ‘adopt’ as recommended.

1o We have included the Turner-Lewis Index (TLI) as this is robust to distributions that are not perfectly normally distributed. There are a wealth of indices that could be reported but if a large number of these are displayed the novice reader may become enthralled by the numerical complexity and miss the general point that the observed data fit the tested model.

1p We have removed the word ‘levels’ and employed another approach to describe aggregate scores for respondents.

1q We have removed the poor phrasing referred to in the original page 9.
1r We have rephrased the sentence where word ‘compared’ has been used in the original page 9.

1s Bedi and McGrath have reported on Corah’s Dental Anxiety Scale in a large survey in the UK. We refer to this work in our discussion.

1t We have referred to the cut-off of 19 as demonstrated empirically by our original CDH study. This has subsequently been confirmed using ROC analysis by a further study using a different sample about to be submitted shortly (n = 1000+). Hence we are confident that the cut off we employ is defensible.

1u The UK population is a truly multi-cultural society in many respects and hence attending to the limited response rate that we might have had with a postal questionnaire of non-white residents may have added a distorted picture.

1v We do not believe the conflict raised by this referee is altogether valid. Dental personnel are keen to learn more about their patients. Hence the possibility of gaining a quick snap shot of their patient’s dental anxiety and how it might be interpreted by comparison to a table of percentiles seems a reasonable compromise and good applied use of a standardised measure to clinical practice.

1w The inclusion of extra vertical and horizontal lines is a product of the up-loading process and conversion of files to pdf format. On our originals these lines were invisible. If this problem persists with this rewrite then we can rectify with new tables.

The references have been attended to.

Referee 2 Tim Newton

This referee has few issues to highlight and we note the comment about response rate which we have answered in our comments to Referee 1(d).

Referee 3 Trilby Coolidge

3a This referee recommends that the percentiles could be reported in more narrow age bands to improve level of description of the relationship of age and dental anxiety. The authors have some sympathy with this view however we are mindful that separating the data into six age groups as opposed to the original 3 as presented would widen appreciably the confidence intervals around each percentile estimate. This may begin to raise questions about the authors’ attempts to raise accuracy of the effect of age and dental anxiety without realising that precision was being eroded. Reluctantly we have retained our initial 3 age band approach split by gender and look forward to larger sample sizes that might be available in future studies to break down the table as this referee would prefer.

3b We attend to this issue of non-response as detailed for referee comments (1d. 2a).
As suggested by this referee we have collapsed the education variable into 2, namely: non-university versus university. We accept that the understanding of the GNVQ issue will be unfamiliar to non UK readers. We therefore use a dichotomous description of education experience.

We have responded to this referee’s request to expand a little on the issue of epidemiological and clinical use of the collected data in the discussion.

The points raised in this referee’s report (5.) about appropriate conclusion is well made. We have altered the concluding statement.

We thank this referee for spotting our duplicate reference 1 and 16 being the same.

Reference 17 has been corrected.

Singular and plural usage has been corrected.

The last statistic in the results section has been punctuated fully.

**Referee 4   Arjen J van Wijk**

We are grateful to this referee spotting the purpose of publishing in this open access journal. We are indeed keen for clinicians to make some use of this article in order to strengthen the dental health providers’ understanding of the use of this questionnaire in their practice.

This author also raises the possibility of selection bias (as 1d, 2a and 3b). We feel we have answered this in our previous comments above.

Our experience of this method of completion over the telephone of the MDAS is limited. However we do not suspect that the responses to questions delivered over the telephone will be very different from pencil and paper methods. the advantage of the telephone method of course is that the respondent is not challenged if they cannot read or write and therefore the telephone administration may paradoxically be more representative as it may enable those with literacy problems to be included in this approach to data collection.

We have omitted reference 17.

We have corrected the use of multivariate.

We make reference to previous UK norms
Referee: Sven G Carlsson

5a We have now explained in our new manuscript the reasons and uses of these new norms and why they were important to be prepared for today’s clinicians and researchers.

5b The issue of selection bias is also raised by this referee and we have addressed this in earlier responses to the referees. Extensive detail is now presented of who was selected and reasons for non-response.

In conclusion we hope that you regard the manuscript has improved the merit of this article being published in your journal. We look forward to your response in due course.