Reviewer’s report

Title: The Manchester Colour Wheel: Development of a novel way of identifying colour choice and its validation in healthy, anxious and depressed individuals

Version: 1 Date: 21 April 2009

Reviewer: Sophie Wuerger

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The aim of this study is to develop a method of reliably associating mood with colour preference judgments. This method can then be used to diagnose people with anxiety and depression. The results are intriguing and promising; the resulting colour preference test may provide a quick and simple diagnostic tool.

Major Compulsory Revisions

1. p.6. Methods. Definition of colours. A device-independent definition of the colours is required, such as CIE coordinates. The CMYK numbers are dependent on the particular printer.

2. p.10. Study 2. Method to achieve classification into positive, negative and neutral colours. Could the authors explain why they used iterative permutations to achieve this classification. If they had chosen an arbitrary criterion (e.g. of 50%) they would have achieved the same classification. That is, 14,15,32 are colours where %positive is larger or equal to 50; same for all colours classified as negative. Some justification for their particular method would be useful. E.g. what was the stopping criterion?

3. p. 12. Statistical tests presented in Table 3. I am not familiar with this kind of statistical test, but performing 6 statistical tests on the same data seems to be problematic to me. Could the authors explain why they used iterative permutations to achieve this classification. If they had chosen an arbitrary criterion (e.g. of 50%) they would have achieved the same classification. That is, 14,15,32 are colours where %positive is larger or equal to 50; same for all colours classified as negative. Some justification for their particular method would be useful. E.g. what was the stopping criterion?

4. p.13. Figures 5 and 6 require a better in-text explanation (all figures require more detailed figure legends). I don’t think that the plots for all 8 permutations add any useful information. If at all, I would just plot the final permutation. What are the rhos indicated in the plot?

5. p. 13. The authors state that ‘The mean anxiety score for healthy individuals was similar irrespective of whether they chose a positive, neutral or negative colour’. In figure 6, the mean HAD score seems to be different for these three colour groups. Also in figure 6, is rho=0.412 a significant correlation between the HAD depression score and the classification for healthy volunteers? In general, the data and statistical tests presented in figure 5 and 6 need to be explained.
more clearly in the text.

Minor Essential Revisions

6. p. 6. Methods. What is the rationale for these three questions: drawn to, favourite and mood?

7. p.12. would it be possible to present all data in a histogram format, i.e. x-axis: colour number, y-axis: %respondents. ? That would also solve the problem of arbitrarily setting a cut-off point of 5% (as used in table 1).

8. p.12. Differences between healthy/anxious/depressed volunteers. In table 1, are the percentages in relation to the total number of volunteers or in relation to the number of volunteers that associated any colour with their mood, i.e. 41 out of 105 for healthy volunteers etc.

9. p.12. More general comment on statistical tests: wouldn’t it be desirable to compare the entire distribution of responses between healthy observers and clinical group?

Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

Statistical review: Yes, but I do not feel adequately qualified to assess the statistics.