Reviewer's report

Title: Odor naming and interpretation performance in 881 schizophrenic subjects: Association with clinical parameters

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Reviewer: Richard Stevenson

Reviewer's report:

This MS reports one of the largest studies that I am aware of examining olfactory performance in a schizophrenic and control sample, and linking performance to various factors. The study also provides an excellent level of detail on the psychometric properties of the modified SIT test they used. Overall I am enthusiastic about the study and just have some relatively minor suggestions, which I think need attention.

1. I found the opening paragraph unconvincing. Why should say olfactory tests be any different to any other form of neuropsychological test – all assess brain function in a non-invasive way.

2. A significant and unanswered question in the literature is the relationship between olfactory performance and the presence of olfactory hallucinations. Clearly the authors will know who in their schizophrenic sample have olfactory hallucinations, and it would immensely strengthen the MS if they included this variable, and its relationship with olfactory performance. No study has had the power before to detect how these variables are related, and it would add a strong and unique dimension to the MS.

3. I would like to know what the full neuropsychological battery that schizophrenic participants received in the GRAS study was. Presumably it included more tests than those reported here. IF it did, why were the particular tests reported in the MS used and others not used. This is not an issue if all of the neuropsych measures employed in the GRAS study are used here.

4. t values are not normally signed.

5. The regression analyses are poorly explained. It was not clear what was included in the regression, nor the particular type of model used. I did not find the table much help either, and the table footnotes served to confuse me more. Please revise this section for clarity.

6. How meaningful is the LIP/HIP split? After all, could this just reflect participants with poorer overall motivation vs. better overall motivation, rather than anything more substantial? I felt no convincing motivation underpinned these analyses and I was equally unclear as to the take away message from them as well.

7. While the authors are to be congratulated on presenting the psychometric
properties of their data, do they not think that the low alpha’s reported at the bottom of Table 4 are cause for concern and require comment? These would suggest that perhaps what they believe is one dimension is actually a forced conglomeration of several factors.

**Level of interest:** An article of outstanding merit and interest in its field

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

No competing interests