

## Reviewer's report

**Title:** Pattern of neuropsychological performance among HIV positive patients in Uganda

**Version: 2 Date:** 10 November 2006

**Reviewer:** david hardy

### Reviewer's report:

#### General

Following is a review of the manuscript "Pattern of neuropsychological performance among HIV positive patients in Uganda" by Robertson, Nakasujja, Wong, Musisi, Katabira, Parsons, Ronald, and Sacktor. The question posed by the authors is new in the sense that little neuropsychological research has been conducted with African HIV-positive patients. The question or purpose of the study is also clear, the authors want to examine neuropsychological performance in a sample of Ugandan HIV-positive adults. Below is a list comments, some on small details with others focusing on more substantial conceptual or methodological issues.

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Major Compulsory Revisions (that the author must respond to before a decision on publication can be reached)

Although the topic of this study is important, the authors need to take the time and care to present a clear, thoughtful, and organized manuscript. Terms, concepts, citations, grammar, and language in general need to be carefully employed here. The authors also need to take the time to cite more relevant studies from the extensive literature on neuropsychology of HIV/AIDS and relate them to their findings. More focus and care will improve this manuscript greatly. Below are several comments to assist the authors.

In the Abstract, the authors state that post hoc analyses were conducted to compare neuropsychological performance among WHO stages in the HIV+ adults. However, in the Results section of the manuscript it appears that post hoc analyses were conducted not on WHO groups but on MSK groups. This needs to be clarified.

On p. 5 at the end of the Introduction section, the authors state that the purpose of the study is to evaluate neuropsychological performance in HIV+ patients. However, much of the preceding discussion in this section focuses on HIV associated dementia (HAD). A LOT of research has been conducted on the neuropsychology of HIV without explicitly looking at dementia (which is the purpose of the present study)—studies looking at attention, working memory, learning and memory retention, executive functioning, information processing, etc.-- but most of this literature is completely ignored in the Introduction. This omission is rather unusual.

To be quite frank, the statistical results are presented sloppily. First of all, in the subsection "Data Analytic Plan", they refer to analyses based on MSK rating but not on WHO stage. Analyses were done on both grouping variables (I'm not entirely sure why) and this needs to be stated in this section. In the Results section, I'm not sure what they are referring to when at the very beginning they discuss a difference in "neuropsychological total z-score". They don't appear to combine all test scores into a single z score. They refer the reader to Table 1 but I don't see it their (they also refer the reader to a non-existent figure?). Table 1 itself needs to be cleaned up. The line spacing is not uniform, results need to be lined-up with the test heading, group headings should be centered, and so on. Also, abbreviations for test names are difference between Table 1 and Table 2. These obviously need to be uniform. In addition, the group headings on Table 2 are not uniform (the .5 group is placed on two lines while the 0 and 1 groups are on one line) and they don't match the group names in the text. Table 3 has similar problems with uniformity. The authors need to take the time to re-work and clean-up these tables. For the text in the Results section, statistical results need to be presented in a standard fashion. For many of the ANOVAs, degrees of freedom are not presented. Perhaps the authors were trying to save space or be economical in presentation style. Nonetheless, results need to be uniform. Perhaps they could present ANOVAs in a table? Same issue applies to the series of correlations they conducted.

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Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author

can be trusted to correct)

In the Abstract, groups based on WHO stage is mentioned. But subjects were also analyzed by MSK rating, so this should be mentioned as well.

On p. 4 (second paragraph, second line) the term “HIV dementia” is used. Since they use the term minor cognitive motor dysfunction (MCMD), the authors might as well use a more concrete term like HIV associated dementia (HAD) or some other standard term. The same issue exists on p. 5 (line 2), where the term “HIV Dementia” is used. Dementia does not need to be capitalized, and they might as well use the term “HIV associated dementia, etc.

On p.4 (second paragraph, last line), the reference they cite [9] after the statement “. . . and difficulty completing instrumental activities of daily living” is incorrect. Navia, Jordan, and Price (1986) do not examine activities of daily living; they present only neurocognitive/neuropathological data on HIV patients.

Authors should strive to be precise in their statements as well as their citations. For instance, on p. 4 (paragraph 3, lines 2-3), they state “HAART can improve cognitive performance in individuals with HIV-associated cognitive impairment . . . “ and they cite two studies by Sactor et al. These studies show improvement only in psychomotor slowing—one specific factor in the spectrum of cognitive functioning. Authors should either talk specifically about psychomotor slowing improvement, or cite other studies (which have been done) that examine cognitive performance (memory, attention, etc.).

The last line on p. 4, the term “clade” does not need to be capitalized.

On p. 6, there should be a colon after the subheading “WHO Disease Staging System”.

On p. 6, subject demographics are presented awkwardly. Perhaps a Table could be used, or at least conventional sentences.

On p. 7 (first paragraph), WHO clinical stages are described as “Stage 1 through Stage 4” but also described as Stage I, Stage II, and so on using Roman numerals. Consistency is obviously needed here. Also, they insert in this paragraph some colons in some very unusual places. Grammar needs to be fixed.

On p. 8 (lines 7-8), they state that “Once the instructions were clear the two groups did not differ in performance.” I don’t know what the authors are referring to.

On p. 9, on lines 2-3 of the Results section, a Figure 1 is mentioned. There is no Figure 1 in the manuscript reviewed.

On the last line p. 9, a Figure 2 and 3 is mentioned. But in the manuscript I reviewed there are no figures at all.

Two citation conventions are used. Some citations use a number notation but other citations use author names (for example, see p. 7, such as Miller et al., 1990). One citation style, the one appropriate for BMC Neurology, needs to be used.

On p. 7 there is a citation (Miller et al., 1990) that is not included in the reference section.

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Discretionary Revisions (which the author can choose to ignore)

Although requiring the negative control subjects to have a negative HIV ELISA in the last year is better than no proof at all (as in many HIV neuropsychological studies), I wonder what the chance is of any control subjects actually being HIV+?

Considering that HAART can have an ameliorating impact on the cognitive symptoms of HIV, it would be helpful to know which HIV+ subjects (in which WHO or MSK group) were receiving HAART.

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

**Level of interest:** An article of importance in its field

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

**Statistical review:** No

**Declaration of competing interests:**

I declare that I have no competing interests.