

## Reviewer's report

**Title:** Development of a Reliable and Valid Measure of Nutritional Literacy in Adults

**Version:** 1 **Date:** 19 July 2006

**Reviewer:** Russell Rothman

### Reviewer's report:

General

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

1. I am concerned about the content validity of the scale. The author needs to clarify or justify some of the following concerns:

- o Some items of the scale appear to test nutrition knowledge more than nutrition literacy. For example the item on page three about fiber assumes that a patient knows that fiber is measured in grams.
- o Other items in the scale also seem to rely on knowledge or are ambiguous as written. For example, for the item: "Carrots, beans and lettuce are all kinds of \_\_\_\_\_. I presume vegetables are the correct answer, but if one was not knowledgeable about nutrition (and that lettuce is relatively low fiber), they may think that fiber is acceptable too. Another example, is the item about regular soft drinks on page 3 " is the right answer calories or sugar? Both would seem correct to me. I also am not sure about the correct answer to the final item on page 3 ("Foods should never be \_\_\_\_\_ or even stored on the counter").
- o Some items of the scale are a little confusing as written. For example, on the second page, there are a couple of items related to cholesterol " but it is not clear as written that these sentences are related to each other. It would be easier to follow if this line of items were on a separate page, or if these sentences were presented in one paragraph.

2. The authors need to better justify what the added value of this scale would be " beyond what is obtained by administering current scales such as the TOFHLA or REALM. Does this scale pick up deficits in nutrition related literacy that would not be ascertained from giving the REALM or TOFHLA? Does performance on this scale correlate with specific nutrition related knowledge or behaviors? Does this scale provide specific results that could be used in an intervention to improve nutrition literacy?

3. For further construct validity it would be helpful to see correlations between the NLS and other variables of interest. For example, based on other literacy studies I would expect that lower education, lower SES, and older age, would all be correlated with lower NLS scores. If the author could include any other important correlations (particularly those that were hypothesized a priori) this would add to the validity of the scale.

4. The recruitment process may have created a selection bias " with inadequate number of low literacy patients recruited. The author states that patients were excluded if patients were "thought to be unable to complete tasks". However, it would have been helpful to include these folks to gain a more representative sample. Also " were patients with poor vision excluded? They probably should have been.

5. The distribution of literacy levels in the sample population should be included in Table 1. What percent of patients had Adequate, Marginal, or Inadequate literacy?

6. It is not clear why groups 1 and 3 received the S-TOFHLA , but apparently Group 2 was not. Is this true? Why?

7. Did the authors attempt any factor analysis of their scale to see if the initial content domains (ex fiber, cholesterol, etc) were important or if the scale loaded to a single factor (literacy).

7. The author needs to more thoroughly discuss the Newest Vital Sign (Weiss et al, Annals of Family Medicine). This scale was designed as a quick screening instrument for identifying patients with low literacy. The scale is primarily focused on patient understanding of a nutrition label. This scale tests patients literacy and numeracy skills in the context of interpreting nutrition information. This may be a better measure of "nutritional literacy" than the scale the authors have provided.

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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)

1. On page 3, para 2: It would make more sense to state that Schillinger found that adequate literacy was associated with better glycemic control (as opposed to the other way around).
2. Table 1 needs to be much better formatted to make it easier to read.

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Discretionary Revisions (which the author can choose to ignore)

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

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

**Quality of written English:** Acceptable

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