Reviewer's report

Title: Improving accuracy of medication identification in an older population using a medication bottle color symbol label system

Version: 2 Date: 29 September 2011

Reviewer: Yan Zhang

Reviewer's report:

Improving accuracy of medication identification in an older population using a medication bottle color symbol label system

1. Is the question posed by the authors well defined?
The research question is well defined and very straightforward on p. 7 “The focus of this study was to evaluate and refine such a system of symbols to place on medication bottles and to assess whether this system would increase the accuracy and rapid identification of prescribed medications in an older population.” The background/rationale of conducting this study is well described.

2. Are the methods appropriate and well described?
This study employed mixed qualitative and quantitative approaches. Both are appropriate and well described. Some issues in phase II may weaken the study design. First, there should have been a description of the study population of NorTex and how representative the sample is. In the discussion, the authors mentioned that this sample mirror general American population. This statement needs to be double checked since there are more females in the 65+ age while 54% of the sample is male. Secondly, there is no comparison group. Since TCOM labels were added right after the pre-test, authors can’t rule out the immediate recalling factor without a comparison group.

3. Are the data sound?
Again, the representativeness of its sample is questionable. The data analysis is appropriate given its design. Power analysis was performed. The effective size should be calculated and discussed. Authors need to discuss what 7% improvement after using labels means. They stated that: “Calculations assumed participants would incorrectly identify at least one medication in the pre-measurement and would correctly identify all medications in the post-measurement.” Whether or not the finding supporting this assumption is not discussed.

4. Does the manuscript adhere to the relevant standards for reporting and data deposition?
Yes, this manuscript adheres to the relevant standards for reporting and data deposition of both qualitative and quantitative data.

5. Are the discussion and conclusions well balanced and adequately supported
by the data?
The discussion is balanced and supported by the data, except for the representativeness issue mentioned above.

6. Are limitations of the work clearly stated?
There are other limitations besides what the authors stated, such as lack of comparison group, lack of a random sample, and other design flaws.

7. Do the authors clearly acknowledge any work upon which they are building, both published and unpublished?
Background and rationale are well described, and other’s work on medication labels is mentioned. This color symbol system seems a novel idea that no similar work has been done before.

8. Do the title and abstract accurately convey what has been found?
Yes, both the title and abstract accurately convey what has been found.

9. Is the writing acceptable?
This paper is well written in general.

Recommendation:

- Major Compulsory Revisions –This is a very interesting topic that has promising practical implication to health care among the elderly, but the design flaws need to be addressed before publication.

**Level of interest:** An article of importance 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:**

I declare that I have no competing interests