Reviewer’s report

**Title:** Development and Initial Psychometric Evaluation of the Computer-Based Prostate Cancer Screening Decision Aid Acceptance Scale for African-American men

**Version:** 0  **Date:** 06 Feb 2019

**Reviewer:** Margot Barry

**Reviewer's report:**

Overall this article is well written and interesting. The referencing style is inconsistent but the language use in this article is of a professional standard. Thank you for allowing me to review this article.

The scale in development is important to human health: its usefulness in reducing the mortality of an at risk population group is clear. I find that there is certainly a well-founded reason for developing this scale.

The title of this article indicates that the scale was both developed and validated. The validation procedures are clearly described and appropriate. I am not sure that the development and pre-testing are sufficient. I therefore wonder whether the validation was performed before the scale was fully developed and therefore I wonder whether the results support the conclusion of this research.

The development of the items and the pre-testing require more explanation and potentially additional work. I will elaborate on my opinion.

Background:

The Background identifies and defines the domain applicable to the latent factors in the existing scale. In some instances assertions such as "a plethora of socio-ecological factors" (p5) should be supported by more examples than one. The word plethora implies that there are quite a few. I would be interested to know what these are and whether they relate to the later developments of this scale.

It is not clearly described whether the type of technology use which the original scale was developed for (referring to a system that is used in everyday work) is directly translatable to the type of technology use implicated in using the CBDA (once off - with subsequent significant health decisions). This could be explained to the reader. A discussion on the repercussions of the context of scale use (health decisions) is only introduced in the discussion. In my opinion this should be done earlier (in the background). It would be interesting for the reader to understand
whether the context of health decision making influences acceptance given the gravity of the potential outcome. The participants were sourced from faith based venues. It would be interesting for the reader to understand whether religious convictions influence health decision making. Religious conviction could influence acceptance of technology relating to health decision making.

Methods:

The item translation should in my view be part of the item development and should be reported in the method section (not the background). To form a complete picture of the content validity of items I am interested to know who translated the items given that they were translated for a new context and type of technology use. Some items were changed substantially (for example item 4 from "If I use the system, I will increase my chances of getting a raise" to "Using the CBDA increases my chances of learning about prostate cancer (Q3)"") I would be interested to know whether experts evaluated the extent to which this item retained its content relevance to the latent factor subsequent to translation.

It would be helpful if the authors could inform the reader of the reasoning behind altering some items substantially and eliminating others entirely.

There is an element of cultural translation involved in transforming the original questionnaire to the CBDA. I would like to understand more about the steps that were taken at the pre-testing stage to evaluate face validity of items by members of the target population. For example, was cognitive interviewing of potential end users performed to understand in which way they interpret items? In cultural translations this would be important. If one of the researchers has specific cultural competencies which could have assisted in the translation of items - that should be described.

If the items in the CBDA were not pre-tested in any manner, the items could have been subject to misunderstanding or misinterpretation. I am interested to find out whether the authors identified potential misunderstandings at the development stage.

In summary, I am interested to know what measures were taken to ensure the content relevance, representativeness and technical quality of each translated item.

The validation procedure and statistical measures are appropriate given the sample size for this EFA. I do however question whether the validation was performed prematurely.
Results and Discussion:

The rewording of five questions (table 5) to address cross-loading on these items appears to suggest that the administration of this questionnaire to this sample should be viewed as part of the development rather than being used for validation. Question wording is part of the questionnaire development phase and should precede factor extraction and validation as it could influence these. The sample size is in essence large enough and the difficulties associated with the homogeneous nature of the sample were discussed appropriately.

Conclusion:

At this point I am uncertain about whether the results support the conclusion. If the scale development methods are addressed, it will be easier to assess this.

I am of the opinion that this scale is worth developing and maybe many of the development steps I did not read in the manuscript have in fact been performed. They should be reported. If not, I would like to encourage the authors to complete these and re-submit this interesting article.

A very helpful article that gives guidelines for scale developers is the following:


**Are the methods appropriate and well described?**
If not, please specify what is required in your comments to the authors.

No

**Does the work include the necessary controls?**
If not, please specify which controls are required in your comments to the authors.

Unable to assess

**Are the conclusions drawn adequately supported by the data shown?**
If not, please explain in your comments to the authors.

Unable to assess
Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
If an additional statistical review is recommended, please specify what aspects require further assessment in your comments to the editors.

I am able to assess the statistics

Quality of written English
Please indicate the quality of language in the manuscript:

Acceptable

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