Reviewer’s report

Title: Feasibility of a Behavioral Automaticity Intervention Among African Americans at Risk for Metabolic Syndrome

Version: 2 Date: 24 Feb 2019

Reviewer: Chris Ardem

Reviewer’s report:

This study assessed the habit development (HD) of an 8 week intervention in a sample of African American participants with metabolic syndrome (MetS) derived from an emergency department of an urban centre. Overall, the research question is novel, and the work is methodologically sound, employing a quan-qual approach to generate pilot data for future similar lifestyle (information-motivation-behavior change) interventions in this high-risk group. Validated tools are used to assess behavioral automaticity, and GEEs are compared to alternative statistical approaches in a sensitivity analysis. I have only minor clarifications for the authors to consider:

1. Use of Participants with MetS: While a case is made for the importance of MetS in this sample, it is not entirely clear if this is important for the intervention itself, as little reference is made to existing efficacy studies of the effects of behavioral interventions on MetS. Was this a handy-sample of MetS collected for another purpose? If not, the authors may wish to elaborate on the impact of HD on MetS.

2. Definition of MetS: While only three MetS factors are considered (i.e. abdominal obesity, HbA1c, and BP, at the exclusion of TG and HDL-C), with MetS designated by the presence of 2+ factors, the authors might consider referring to their participants as simply having "high cardiometabolic risk". It is also not clear whether treatment for hypertension or hyperglycemia were counted as positive inclusions for this sample.

3. Although gains in HD can be seen in as little as two weeks, the authors themselves note that the introduction of two new habits every two weeks may have been ambitious. I may have missed it, but I do not see a rationale presented for why the authors designed their intervention in this way / why they thought this was the optimal approach. Some discussion of this may be helpful, given that other elements of the program could have been impacted by this decision.

4. Sample Size: While the authors are clear that their motivation is to generate pilot work for future programs, the study suffers from a very high attrition. The authors may wish to elaborate on their rationale for selecting their initial sample or previous literature on which this was based.

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

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

Yes

**Are the conclusions drawn adequately supported by the data shown?**
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Yes

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I am able to assess the statistics

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