Author’s response to reviews

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

Authors:
Heather Fritz (heather.fritz@wayne.edu)
Wassim Tarraf (Wassim.tarraf@wayne.edu)
Aaron Brody (abrody@med.wayne.edu)
Philip Levy (plevy@med.wayne.edu)

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Natalie Pafitis
BMC Public Health

Dear Ms. Pafitis

I am enclosing a resubmission to the BMC Public Health, titled, “Feasibility of a Behavioral Automaticity Intervention Among African Americans with Metabolic Syndrome.” We have addressed the reviewer’s concerns including adding clarifying text to the notes below the supplementary tables. All additions are bolded in the text and we have included the point by point discussion of the changes on page four of this cover letter.

This material has not been presented or published elsewhere. I will be the corresponding author for this manuscript. The word count for the manuscript excluding the references is 4819 (excluding tables, figures, references, and declarations). There are 2 tables, five figures, and six supplementary files included in the submission. The authors have no conflicts of interest to report and all authors have approved the final manuscripts. A full author note is included on page three. I thank you in advance for your consideration and review of the attached manuscript submission.

Sincerely,

Heather Fritz Ph.D., OTR/L
Dear Editor and Reviewer,

We are very grateful for your thoughtful feedback on our manuscript. The reviewer pointed out some very important areas where we should have included further clarification. We have addressed the reviewer’s concerns and details of those changes can be found below.

1. Intervention section, page 8, line starting 184. It would be very helpful to the reader if you could give more detail or examples of the educational materials (reading level?) cultural Similarly, could you give an example of what a "low-complexity " behavior is.

Thanks for this suggestion. In lines 87-94 we have provided additional details and inserted some examples, which we believe will help readers better envision our educational approach.

2. I am intrigued by the idea of environmental modifications. There are many environmental concerns (violence, poverty) that may not be modifiable. Again, a brief example would be useful for the reader to really visualize the intervention.

Thank you for these questions. We agree that it is important to clarify these things. On page 9 we have included an example that demonstrates the level of environmental modifications that coaches used. Because in the context of habits development cues are used to prompt discrete behaviors, the context changes can be considered micro-level changes. Versus the more macro level changes that perhaps the reviewer had in mind when mentioning violence/poverty. We have also included a small table on page 18 of the results so that it is clear about the types of contextual modifications that were made to support engagement in habit plans.

3. What method was used for the participant self-report of engagement in their plan. Paper diaries are prone to data loss and recall bias. Were you able to download pedometer steps to augment participant report?

We used paper diaries for self report as described in the behavioral outcomes section on page 11. Funds were not available for this pilot to use actigraphy or fit bits and the pedometers that we could afford were just as prone to missing/inaccurate data and had not options to download steps. Those were incentives for participants to get used to monitoring their steps, not to provide us with high quality step data. In the subsequent iteration of the study, we plan to use fit bits now that we have funding, but we did not have such funding for the pilot phase.
4. In the participant characteristics section, please describe what literacy and motivation scales were used, or refer to the table so we can see what the scores' ranges were. You might add a qualifying sentence for each.

Thanks you for this suggestion. The motivation measure has now been better described on page 12. The literacy was already discussed on page 12, but we added a score range so that readers can better interpret the table.

5. In the behavioral outcomes section, could you please clarify..."biweekly gains remained unchanged over the study duration". Do you mean that they continued to gain at each measurement point and the gains were the same? Figure 3 does not clarify this; in fact, it looks like the outcomes worsened. What do the numbers on the Y axis represent? In fact, the entire section needs clarification.

The Y axis represents the estimated average values for each domain over time. Although the estimated means appear to decrease between baseline and T1, the confidence intervals are too large for this decline to be inferentially (i.e. statistically) meaningful. Furthermore, despite the small sample specific decline between the baseline and T1, the estimated averages revert back to the baseline average at T2 and T2 further suggesting that there was no evidence of biweekly gains over the duration of the study.

6. When you reference table 1, please mention that it's in the supplemental information

We apologize, but since at the top of page 13, the supplemental table one is already noted as being supplemental, we were not sure what the reviewer had in mind. Just to further clarify, however, we stated again that it was in the supplemental materials in parenthesis.

7. In the supplementary data tables, what do the mean numbers represent? Days? times/week?

The numbers presented in the supplementary tables are fixed effect beta coefficients. The betas are estimated using different estimators (e.g. GEE and OLS) and represent the magnitude of increase or decrease (based on + or – signs, respectively) in the mean value of the outcomes example (diet adherence/sup table) relative to the reference period (i.e. baseline). As indicated in text, these Betas have limited inferential values given the sample size (i.e. they are not statistically generalizable) and can, largely, only be interpreted in the context of the sample under consideration. We have added explanatory notes for clarity in the supplementary tables 2 and 3 that reads: “Betas “b” are fixed effects coefficients from regression models and represent the average magnitude of increase or decrease (based on + or – signs, respectively) in the estimated outcome relative to the reference period (i.e. study baseline).”