Reviewer’s report

**Title:** Behavioral and Technological Interventions Targeting Glycemic Control in a Racially/Ethnically Diverse Population: A Randomized Controlled Trial

**Version:** 1  **Date:** 31 May 2013

**Reviewer:** Gurprataap Sandhu

**Reviewer’s report:**

This is a Randomized Control Trial by Forjuoh et al, where the authors try to compare 2 Diabetes self care modalities with usual care in a racially/ethnically diverse group of patients. The total sample size is 376 patients, randomized into 4 groups, and change in HgbA1c over the course of 12 months is used as a measure of glycemic control. This is a very well done study, but certain issues might need improvement before it can be accepted for publication.

**MAJOR COMPULSORY REVISIONS:**

# Abstract: My understanding is that there are 2 main goals of this study. To compare the effectiveness of 2 different diabetes self care interventions on glycemic control AND whether HgbA1c reduction was ‘more marked’ in minority patients. Abstract needs to clearly mention the results for your aims (the aim that whether minorities will have 'more' reduction in A1c is not mentioned in the abstract). It only says that there is modest reduction in all racial groups.

- P value for the main results needs to mentioned in the abstract.
- Is the conclusion justified based on the results? There was no statistically significant change from baseline in HgbA1c

# Since this a RCT and you don’t expect any statistically significant difference at baseline in A1C, can the authors please perform a simple ANOVA on the A1c values at 12 months and see if there is a difference that is statistically significant.

**MINOR ESSENTIAL REVISIONS:**

# Table 2:

- Would highly recommend to restructure the table in simple terms (using language and major p values if necessary), as the clinical audience of the journal might not be well versed with advanced statistics.

- SE and 95% CI in the same table is redundant. Also consider excluding z value in the table, as it does not add not much information.

- What was the reason that authors used reductions in HgbA1c ‘per day’ over the 12 months period. For the clinical audience, this might not be useful information, as there is no need to repeat A1c for at least 3 months.

# Statistical analysis- Para 3, in sample size estimation, what is considered a
statistically significant changes in A1c. By that I mean what % change (for 80% power and two sided significance of 0.05).

DISCRETIONARY REVISIONS:

# Consider publishing Table 3 as a supplementary table.

# Data collection- Paragraph 3 and 4 can be shortened.

# Results: Participant Adherence/Engagement with Interventions could be merged with Results: paragraph 1.

# Discussion Paragraph 1 last line seems to be disjointed with paragraph 2 1st line. Please consider editing.

# Discussion para 6 line 1: please consider changing the word 'somewhat consistent', as it does not provide much information to the reader.

# Please consider editing Para 6 of discussion. It is not clear what you are trying to compare; the baseline A1c among racial groups or change in A1c after intervention. Would recommend to stay consistent.

# Based on your results, do the authors feel that PDAs are a viable strategy in the future (given the fact, as the authors themselves mentioned, a much higher attrition rate in the 2 groups that used PDAs; costs associated with buying an additional device and training personnel; and with the smart phone era upon us). I think the discussion section will benefit from a recommendation in this regard.

# I wonder why you chose an A1c of >7.5% or greater as your inclusion criteria, when the current guidelines suggest a goal A1C of <7%. Maybe a difference could have been observed if a higher A1c inclusion criteria (e.g. 8% as in your pilot study) was used. Is it possible for you to do a subgroup analysis based on A1c sub-categories (with the understanding that the results might be insignificant because of just being underpowered).

# One further limitation of the study might be that the results may not be completely generalizable. The patients who agreed to participate in the study might be different than the general diabetes population. It is possible that only more motivated/compliant patients agreed to participate in the study (so it possible that even the controls might be different than general population controls). Furthermore, only 50% of the participants that were eligible (when screened by phone), decided to participate in the study, even with the monetary incentive.

# The discussion section might benefit from hypothesis generation. It should try to address why the particular results might have been observed (i.e. no statistical difference). Interventions are costly and more time intensive, both for the patients and the health system, compared to usual care. Why use them? Why not just good routine care when based on your results, it seems to have the same effect (compared to the intervention).
Level of interest: An article whose findings are important to those with closely related research interests

Quality of written English: Needs some language corrections before being published

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.