Reviewer's report

Title: Behavioral change in a lifestyle intervention for type 2 diabetes prevention in Dutch primary care: opportunities for intervention content.

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Reviewer: Leah Avery

Reviewer's report:

General comments

Primary research studies assessing the effects of behavior change interventions for diabetes prevention and management have demonstrated significant potential; although more studies are needed to identify practical strategies for use by clinicians to support patients to adopt healthier lifestyle behaviors. In this regard, this manuscript presents a worthy area of investigation (i.e. it aims to investigate the optimal content of a behavior change intervention targeting diet and physical activity behavior’s in patients at risk for Type 2 diabetes).

Major Compulsory Revisions

Methodological quality and reporting:

Currently the manuscript does not adhere to published standards for reporting (e.g., CONSORT).

1. Specific aims and objectives/research questions are omitted.

2. Is this study a randomised controlled trial? The authors report that participants entering the study were ‘randomised’, however explicit details of the methods used to randomize participants are not reported.

3. The manuscript would benefit from a brief summary of the methodological strategies that the authors used to minimize bias (e.g., selection and detection bias).

Data Collection and reporting:

4. Was 'stage of change' assessed at baseline and 18 months? Or do these data collection time points relate to participant perception data collection only? If stage of change data were collected at 18 months only, it is unclear how the authors can report with confidence that the intervention supported participants to move from one stage of change to the next.

5. If the purpose of the study was to identify opportunities for 'optimizing' intervention content, it is not clear how participants were afforded opportunities to express their views and preferences on the intervention content/materials, including ways it could be optimized/improved.
6. It is often very difficult to determine from the table headings what data (outcomes, time points for outcomes) is being presented. Each table would benefit from a clearer description in the title and addition of footnotes.

7. It is unclear why people with a confirmed diagnosis of Type 2 diabetes were included in the study when the target population is stated as people at risk of Type 2 diabetes. Did 64 participants receive a diagnosis of Type 2 diabetes while participating in the study?

8. The power calculation reported was based on incidence of Type 2 diabetes, however this was not reported as an outcome in the manuscript. The authors could consider carrying out a power post hoc calculation based on ‘stage of change’?

Intervention Content:

9. It is of significant interest to researchers and healthcare professionals alike to fully understand the content of behavior change interventions to increase replicability. The authors report having investigated ‘opportunities for refining a lifestyle intervention…’ however minimal details are provided about the specific content of the intervention. A suggestion would be to use definitions from a published taxonomy of behavior change techniques to more coherently describe the intervention content (e.g., Michie et al 2011). In addition, the authors provided suggested behavior change techniques for use in future interventions targeting Type 2 diabetes prevention (e.g., social support, cues, and self-monitoring). However, it unclear whether these were techniques were utilized in the current intervention. It would be useful for the reader to understand what behavior change techniques were utilized in the intervention (see comment 7).

10. Greater clarity is needed relating to the frequency and number of contacts within each study group. How much time passed between each follow-up visit? Was the number of contacts and duration of consultations comparable between groups?

Results:

11. The authors report that the intervention does support participants to bridge the gap between motivation and action. However, due to the issues described above there is a risk of bias and this should be acknowledged / discussed by the authors

Minor Essential Revisions:

12. Behavioral (diet and physical activity) and outcome (weight loss) goals appear to be pre-specified by the study authors. The manuscript would benefit from a brief description of how participants were able to set their own goals. For example, were they supported to develop a series of short-term goals in the first instance?
Discretionary Revisions:

13. A strength of the manuscript is that the authors state that the care providers were trained to deliver the intervention. However, the authors do not adequately describe the mode of delivery, format, and content of training delivered. This seriously limits replicability and transferability of the intervention within and across settings. The manuscript would benefit from specific information addressing each of these areas – (brief details in the manuscript along with more specific details in the form of a supplementary document if word space is limited).

Minor comments:

14. Consider replacing ‘behavioral change intervention’ with ‘behavior change intervention’

15. Consider reporting the duration of the intervention in months rather than years. The abstract reports ‘A 2,5-year intervention was performed….’ This appears to be an error (a comma used in place of a full stop) and is confusing. Replacing years with months would add clarity.

Overall comments

The manuscript presents some interesting findings and studies of this kind are urgently required to move the field of behavioral science forward. However, due to the significant issues outlined above, I have misgivings about the manuscript as it stands currently. More detail on study aims, design and strategies used to enhance methodological quality, in particular and specific details pertaining to actual content of the intervention (training for clinicians and patient intervention) would strengthen the manuscript considerably.

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.