Reviewer’s report

Title: Determinants of weight outcomes in type 2 diabetes prevention intervention in primary health care setting: Diabetes in Europe, Prevention using Lifestyle, physical Activity and Nutritional intervention (DE-PLAN) project

Version: 0 Date: 08 Aug 2017

Reviewer: Arie Nouwen

Reviewer’s report:

This study aimed to examine predictors of successful weight reduction in people at high risk of developing diabetes following a lifestyle intervention in primary care settings. The intervention focused on weight reduction, reduced intake of total fat and saturated fat, increased consumption of fibre and increased physical activity. Assessments were carried out at baseline and at 12 months and included an OGTT, lipids, fasting glucose, height and weight, waist circumference and systolic and diastolic blood pressure. Lifestyle factors including dietary behaviour, physical activity, and negative mood were assessed using self-report questionnaires. To assess predictors of successful weight reduction, the sample (n=175) was dichotomized into those who had achieved a weight reduction of $\geq 5\%$ over the 12-month study period and those who had not achieved this goal. Overall, the intervention resulted in a very modest weight loss of just under 2kg over the year.

Many studies have examined the effects of lifestyle interventions with varying success. Looking at factors that predict success is therefore important, especially for interventions taking place in real life settings, such as primary care surgeries. However, I have a number of concerns about this study reducing my enthusiasm.

1. The description of the methods is sketchy in places and insufficient to allow replication of the study. For example, the description of how BMI was calculated and waist circumference was measured contrasted with the lack of detail in the description of the questionnaires. Which measure of depression was used? How and when were the lifestyle items assessed? What was the reliability and validity of these measures? I assume that the statements listed in Table 2 were those used to assess "lifestyle". However, yes/no statements are not very informative because the answers could reflect changes from 1%-100%. More precision is needed to determine meaningful predictors of weight loss.

2. Dichotomizing a sample on a linear measure such as BMI is not recommendable and may lead to loss of power. In the current case, trivial differences in weight loss (e.g. 1.89kg vs. 1.91kg) are seen as totally different.

3. I found it peculiar that the intervention aimed to reduce total fat intake. Fats from fish, nuts and vegetables are generally considered part of a healthy diet and reduction of those fats often result in feelings of hunger undermining the motivation to stick to the dietary
recommendations. How did people appraise the intervention? Easy or difficult? This needs commenting.

4. Were there any missing data? If so, how were they handled?

5. The results of the study are not earth shattering: weight loss was mainly predicted by a reduction of total fat intake and by increased physical activity and more so in people with a higher baseline BMI (more weight to lose). Concerning the latter, how do the authors explain why BMI was a significant predictor of successful weight loss but waist circumference was not?

Minor issue

There were quiet a few typos and some of the sentences need rewording (e.g. p. 11, line 17).

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.

Yes

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

No

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 recommend additional statistical review

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Needs some language corrections before being published

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