Reviewer’s report

Title: Impact of Weight Maintenance and Loss on Diabetes Risk and Burden: A Population based Study in 33,184 Participants

Version: 0 Date: 05 Dec 2016

Reviewer: Lilia Castro-Porras

Reviewer's report:

The purpose of this study was to investigate the public health potential for diabetes prevention of weight maintenance or moderate weight loss on a population level in an observational cohort with repeated measurements of weight and diabetes status.

Introduction.

"As BMI is also approximately normally distributed in the population, it is a suitable candidate target for a population shift strategy, as proposed by Rose [8]"

The BMI variable in the sample does not have a normal distribution (55.2% of the data are normal, 35.9% overweight, 7.4% obesity I and 1.5% obesity II). Data are skewed right. The author mentions the population shift strategy proposed by Rose, however, this one refers to "normal" behavior not to statistical distribution.

Methods. Assessment of other variables

A number of prospective studies have investigated the effect of both PA and overweight (obesity) on incident diabetes. Why the authors did not assess the physical activity (PA)? This variable was self-reported in the baseline VIP questionnaire (commuting activity, physical activity at work, leisure activities and physical exercise).

The paper of Cloostermans [1] could help to support the PA assessment.

Results

"The mean BMI in the study population was 25.0 (standard deviation (SD) 3.6) kg/m2 at Baseline and 26.3 (SD 4.1) kg/m2 at 10 year follow-up"

The mean has one main disadvantage: it is particularly susceptible to the influence of outliers. We usually prefer the median over the mean when our data is skewed.

As the BMI is not normally distributed, could be better to report the median (IQR).

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?
If not, please explain in your comments to the authors.

Yes

Are you able to assess any statistics in the manuscript or would you recommend an additional statistical review?
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I am able to assess the statistics

Quality of written English
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Acceptable
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