Reviewer's report

Title: Impact of a healthy lifestyle intervention on psychological distress: a cluster randomized controlled trial in Australian general practice

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Reviewer: Davorka Vrdoljak

Reviewer's report:

The article is interesting for general practitioners, because lifestyle interventions aimed at cardiovascular risk factors is GP's everyday work worldwide. And yet, adherence is very low, especially in long term and CVD are still No 1 killer. So, the topic of the article is interesting, but according to my opinion some important revisions should be made:

• It is not very clearly stated how the participants were recruited: were they randomly taken from the e-base of those who attended GP practice in the preceding 12 months and then invited to come to practice for a health check up? If so, were they invited by letter, e-mail, telephone? What was the response rate? How many of the eligible responded? What were the main reasons for refusal? I strongly recommend drawing the flow-chart diagram (according to CONSORT statement for RCTs).

• Why is the population aged>65 left out?

• What did the health check up consist of? Authors mentioned “assessing vascular risk”? They should describe in detail what that assessment included: BP measuring? SCORE chart? Framingham risk chart? Cholesterol levels? Something else?

• Blinding was not described: were participants blinded? Investigators, data collectors, statisticians?

• How did authors prevent information exchange between GPs from intervention and control group? How did they prevent each other from discussing what they were doing (contamination)?

• The main outcome measure of the study is based on self reporting which is a subjective and indirect measure and that important fact should be mentioned among the limitations of the study. Also, if each K10 form was not anonymous/coded but signed with the participants name, after 12 months the Hawthorne effect was still very probable. Meaning that knowing they have been watched, participants answered what investigators expected them to answer (that they changed their lifestyle to healthier one and did better).

• The subgroup analysis and assessment of the participants who most commonly gave answer „some of the time“ and „all of the time“ in K10 should be done and I strongly recommend it.

• Page 10 paragraph 1: “patients at level 1 clustered within GP at level 2”: write it
more clearly, it is not understandable to the reader in this form.

• If bivariate analysis and multilevel analysis showed no difference in neither BMI, daily intake of fruit and vegetables, physical activity, smoking nor alcohol intake, is the marginally significant change in diet score according to mediation analysis a solid enough base to conclude that change in diet score mediated the reduction on distress? Please explain.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.