Reviewer's report

Title: Are reach, dose and fidelity of an individually tailored lifestyle intervention associated with improvements in LDL cholesterol and multiple lifestyle behaviours in people with Familial Hypercholesterolemia?

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Reviewer: Christian Meyer

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General comments:
This is an impressive study! The extended view on population impact exceeding efficacy is highly relevant for Public Health research.

1. My main critique is that the authors downplay the finding that only one third participated in the study. Consequently only 1/3 of the intervention effects according to the efficacy data could be expected on the population level. This fundamental problem is dropped in the discussion (and abstract). Proactive strategies for recruitment and use of internet resources might be an important future improvement.

Detailed comments:

2. Parts of the title appeared to be a little inconsistent: “Are Reach of intervention associated with improvements in…” . In a strict sense this is not investigated. You do not know if the how the non-responder Perform in relation to the responder.

3. The primary outcome paper (Broekhuizen, in press) does not appear in the reference-section (not sure if this is BMC style). It would be good to know the overlap and I am curious were to find it in the future (#).

4. I have a little different perception of the definition of Reach in the REAIM framework. All components contribute to the public health impact. So, the first sentence in the abstract (exposure is a prerequisite for efficacy) is not in line with concept presented later on.

5. More fundamentally the idea of Reach refers to the real population rather than an artificially defined study population. So it would be an important information to know how many subjects have participated/lost in the (StOEH) screening. If no data are available please discuss possible/expected consequences for the potential population impact of the intervention. This aspect is also important to assess the rate of subjects participating and maintaining the intervention as well as the changes in outcome measures across time. Motivation and interest in the study subject could be expected to be confounded with participation in screening and the intervention. Maybe it would be useful to have a brief description of the procedure for the participant in addition to the design paper.

6. Accordingly any details of the contact procedure including the screening are
important to assess how proactive the recruitment procedure was. After additional reading of the design paper I still not exactly know where the blood and anthropometric data have been taken. Maybe the LDL-C for eligibility was taken in the screening (some time before baseline? Home-based or at a medical center?) or at baseline..? How do you assess the other eligibility criteria? What was the dose/effort/mode (postal mail, e-mail, phone, face to face) of contact prior to mailing of the Internet-link.

7. Further important for dimension of Reach: How many subjects had to excluded because of no internet access and how did these subjects differ according to risk and other factors?

8. Did the computer-based intervention and the personal follow-up intervention systematically include ipsative information (i.e. protokolls of previous sessions or changes detected in the assessments). This might be important to interpret difference between those receiving one and those receiving recurrent interventions.

9. Did the counselor may change between sessions?

10. Not sure if it is mentioned who rated the counseling for MI fidelity. Training rater is also not easy. So maybe rating was not reliable. Do you have checked for inter-rater reliability?

11. How did you assess the reasons for non-participation?

12. The test of Differences between responders and non-responders are not sufficiently described. I did not found any p-value or test statistic and do not know if it were three test or one multivariate test. Further there with respect to LDL-C you have an effect of d=0.26; this is a small effect size. You tested the H1 that there is a group difference. Non significance did not mean that both groups are equal (beta depended on power/sample size).

13. At the end of discussion section: Reference “(ref design)” may be reference [7]

Christian Meyer
Senior Researcher at the University of Greifswald, Germany

**Level of interest:** An article of importance in its field

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

'I declare that I have no competing interests’