Reviewer’s report

Title: Determinants of (sustained) Overweight and Complaints in Children and Adolescents in Primary Care: the DOERAK cohort study design

Version: 4 Date: 27 February 2012

Reviewer: Juergen John

Reviewer’s report:

Dear colleagues,

This is a study which could make valuable contributions to our knowledge on, and understanding of, a major public health problem. There is no doubt that the increasing prevalence of overweight and obesity among children and adolescents is a serious threat to the future health of the population. In principle, therefore, any publication of ongoing pertinent research activities should be welcome.

However, I have various concerns with the paper which prevent me from recommending that the manuscript be accepted in its current version or with only minor changes.

Major Compulsory Revisions

My major concerns which in my view necessitate a revision of the manuscript are the following ones:

1. Based on the sample size calculation on p. 8, it has been planned to include 500 overweight and 1,500 non-overweight children into the study. However, the recruitment flow chart (Fig. 1) shows that the authors expect to find among the total source population of about 32,000 children and their parents no more than 2,000 children and parents who in the end actually are willing to participate in the study. Assuming that this is a valid forecast, I wonder whether it will be possible at all to recruit 500 children meeting the standard definition for child overweight and obesity proposed by Cole et al. Perhaps I have misunderstood the flow chart, but a clarification of this issue seems to be necessary.

2. The study population has been defined as “all children who consult a participating GP trainee for any type of complaint between December 2010 and April 2013” (p. 5). Looking again at the recruitment flow chart, there may be a major study design problem. In this diagram it is assumed that 50 percent of all children consulting a practice due to a health complaint do not consult a GP trainee (I assume that these 50% are cared for by their GP without a GP trainee being involved). Unfortunately, the text does not provide any comment on this assumption and its possible implications for the study results. However, it is difficult to see how the study could produce valid answers to the first two research questions presented at p. 4, if the process of allocating children to those
who consult a GP trainee and those who do not, is not purely at random. One possible worst case scenario, for example, would be that GP trainees are involved only or predominantly in practice visits made by children with minor complaints. A clarification of this issue is imperative as at this step of the recruitment process a serious selection bias might be introduced which could result in strongly biased results regarding the research questions 1 and 2.

3. The time structure of the study should be made more transparent. I assume that the starting point of the follow-up period of two years is given by the date of the child's and the parents' final agreement to participate, i.e. two workdays after a child's consultation of a participating GP trainee (this might be regarded to be sure, but it should be made explicit), so that each study participant has her/his “own” individual follow-up period. Moreover, and more important, full and precise information should be given on the time at which the baseline questionnaire and the additional diary have to be filled out. As both documents include items referring to the complaint the child consulted the GP for, this part of the baseline measurement certainly has been planned to take place briefly after the index event, i.e. the child’s original consultation. However, the diary in addition apparently serves to collect parameters related to the child’s energy intake and expenditure during seven days of a week. For this purpose, a time window immediately after the index event might prove to be less appropriate, as the normal differences in the interesting parameters between overweight and normal-weight children might be blurred by the health complaint which has led the child or its parents to consult a GP (a possible solution to this problem could be to use only the follow-up data for the analysis of research question 5 (p. 4). A more detailed description of the pertinent time patterns would be useful in any case.

4. To my mind (and therefore being a subjective appraisal, of course) a population-based research approach to the research questions 4, 5 and 6 would be more appropriate than a primary care-based approach. It would be most valuable if you could make some arguments what pieces of knowledge analysing these research questions in a clinically defined population could add compared to a population-based perspective, and where or how these additional pieces of knowledge could be used to design programmes and interventions to prevent childhood overweight and obesity.

Minor Essential Revisions

1. p. 3, line 15
   The passage „physical en psychosocial health“ should read as „physical and psychosocial health“.

2. p. 5, line 77f
   The passage “Mental or physical disabled children” should read as “Mentally or physically disabled children”.

3. p. 7 “Follow-up questionnaires and diaries child”
Probably the follow-up questionnaires and diaries will not include the questions referring to the type and the course of the complaint which led to the original consultation of the GP. The statement that the follow-up questionnaires and diaries “are the same as the baseline questionnaire and diary” should be modified accordingly.

Discretionary Revisions

„Data-analyses“

1. Trying to answer all 6 research questions (p. 4) involves a huge volume of statistical computing and testing. Without applying appropriate techniques to modify the usual levels of significance, you can almost be sure that you will produce some spurious correlations. It would be interesting to read your comment on why (or why not) you will consider to apply multiple testing procedures.

2. For the majority of your primary outcome variables, your study design will generate four (possibly different) measurement values. For your research questions which are essentially cross-sectional by nature, this might pose an interesting challenge. For example, for all children you will identify as being always overweight over the follow-up period of two years you will have four (possibly different) PedsQL4.0 values and four (likewise possibly different) SCL values. If you try to analyse research question 4 (whether overweight is associated with lower quality of life and whether this association is modified by the SCL score value), is it planned to pool all these data into one statistical analysis, or will you conduct separate calculations for the different points of time, or will you average out the PedsQL4.0 and SCL values? Looking particularly at research questions 4, 5 and 6, it would be interesting to read your ideas how to deal with this issue of temporal variability.

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

Quality of written English: Acceptable

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.