Reviewer's report

**Title:** Overweight at age two years in a multi-ethnic cohort (ABCD study): the role of prenatal factors, birth outcome and postnatal factors

**Version:** 2  **Date:** 20 May 2011

**Reviewer:** Grete Helen Bratberg

**Reviewer's report:**

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The authors have through this review process made significant improvements and thus made this manuscript more to the point and also more readable. The revision has been conducted very thoroughly, but I am not able to consider if the responses given in point 6-9 are satisfying or adequate.

There are some other questions to be addressed:

1. **Abstract**

   The language of this revised manuscript is much better, but the abstract has some grammatical/orthographical errors that should be corrected. One amendment for the second background sentence could be: “Little is known about whether these (such) differences already exist at (an) early age and which factors (that may) contribute to ethnic differences”. All paragraphs/parts (also results) should start with large letters.

   Although overweight seems to be more common in all ethnic minority groups compared to native Dutch children, differences were statistically significant only for Turkish and Moroccan children (Table 3, crude model). What is reported in the result part of the abstract thus, is not correct and was also contradicted by the authors in the beginning of the discussion part of this paper.

   Since prepregnancy BMI constituted only 1 of 7 factors included in model 1 in multivariate analyses, the statement about contributions reported in the abstract could be more moderate, e.g. “Although maternal pre-pregnancy body mass index partly explained...” could be replaced by “Although prepregnancy/prenatal factors partly explained ..... “

2. **Methods**

   “Birth outcome” is used both in the title and in the manuscript, but refers to more than one outcome and should perhaps consequently be used in plural, as birth outcomes or birth outcome factors.

   It is unclear whether duration of breastfeeding was included in model 3 or not. According to data analysis (page 8) this variable was included, but not according to Table 3.
In the method section (data analysis) it was described that differences were tested by the use of chi square tests or ANOVA. It is largely unclear though which differences that actually were tested and also the result of these tests (neither described in text nor in tables).

Since Table 2 gives no p-values, it is difficult for the reader to know why and which of the potential explanatory factors that were included in multivariate analyses. Since many of the potential explanatory factors also varied so much between ethnic groups (e.g. lifestyle variables, Table 1) and the Turkish and Moroccan respondents formed relatively small groups of the total cohort, the test methods of inclusion/exclusion could be questioned.

3. Results

The authors have after requests from both reviewers calculated how much prepregnancy BMI and weight gain may contribute to ethnic differences in infant overweight, but the calculated percentages (17 and 33% respectively, page 10 and 11) refer to the contribution of all factors (within each model) , don’t they?

The tests of possible statistical interactions are not results of this study (postnatal results, page 11), and this information could preferably be moved to data analysis (Methods, page 9).

In my point of view the table texts of tables 2 and 3 are incomplete (and not correct) and should be reformulated, for example :

Table 2. The odds ratio (OR 95% CI) of being overweight at age 2 years associated with selected pre-and postnatal factors as well as birth outcomes.

Table 3. Differences in prevalence of overweight at age 2 years associated with ethnicity using native Dutch children as reference (crude and multivariate adjusted ORs, 95% CIs)

In the result section (page 9 paragraph 3), the authors have used the phrase “odds” instead of odds ratios and the reference group was not made clear.

In the results (page 10.paragraph 2) about prenatal factors, the odds ratios were not similar to those in Table 3.

It is unclear whether birth weight was included in multivariate model as weight in kilos or in grams? (page 11.paragraph 3 and Table 2).

In the last paragraph of results, you have written that the final model revealed that the actual factors were independently associated with overweight, but it is not quite clear what this statement means. Does it e.g. mean that girls in this study cohort, compared to boys, were 2.6 times more likely to become overweight at 2 years after adjustment for all other factors mentioned?

4. Discussion

Results from the non-response study showed that Dutch mothers included in this study on average were older and higher educated than those who were not.
Since those characteristics seem to protect against overweight at age 2 years, it would have been appropriate to discuss possible selection bias (limitations) associated with this.

In my opinion it would have been appropriate to notify (discuss as possible limitation?) that although odds ratios decreased (with an increasing number of explanatory factors in models), the confidence intervals reported in Table 3 remained overlapping independent of model.

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

**Quality of written English:** Acceptable

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