Reviewer's report

Title: Medical, Developmental, and Academic Correlates of Birth Weight

Version: 1 Date: 5 July 2012

Reviewer: Nicoletta Salerni

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Major Compulsory Revisions

1. The introduction focuses on obesity and its possible developmental outcomes (physical and psychological). However, this variable does not correspond to the one considered in the study which, instead, focuses on birth weight. Consequently, the literature on the basis of which the study is built, must be revised, extending the role of birth weight on child development. This should clarify the research question and the assumptions on which the study is based. In fact, although the authors reported a statistically significant correlation between birth weight and current body mass, this analysis was conducted only on 82 children, whose individual characteristics are unknown. So, this finding does not allow birth weight to be used as a valid index of the current body mass index of all participants (and even less so as a measure of obesity).

2. The authors claimed that participants were 602 children. It would be useful to give information about how many developmental/sensory histories were fully compiled and how much information (parents’ responses to each question) was missing. Moreover, as the data collected are retrospective, the authors should critically discuss their accuracy, especially with regard to developmental milestones. For example, they conducted a partial correlation in order to control the possible influence of age on the relationship between children’s milestones and birth weight. However, this analysis is not adequate to control for possible errors of parents’ judgment in the compilation of reports. This analysis would be meaningful only if the children’s age at evaluation, correlates with birth weight and with the other variables included in the analysis.

3. Pag. 4., first line: “Parent’s responses to questions on the developmental… “ The measures calculated from the coding of parents’ responses must be specified.

4. Overall, the interpretation of the results is quite hard and confusing. It is not clear how to integrate data reported in Tables 2 (%), 3 and 4 (number of children) with the results mentioned in the text. For example, Tab. 2 reports that the percent of children diagnosed with ADD/ADHD is 17.2% (an equivalent of about 103 children); however, the degrees of freedom of the t test are 155 and so the subjects should be 157 (as reported in Table 3 for Medical diagnoses -79 yes; 78 no; note, also, that while the text refers to the diagnosis of ADD/ADHD, Tables 3
and 4 refer to ‘medical diagnoses’. Consequently it is unclear to which participants the t test refer. Is that an effect of the matching procedure described on pag. 4? It is necessary to specify the exact Ns of the participants for each comparison and for each independent variable. The same considerations apply to all other aspects taken into account (Other evaluations; Birth/ Delivery related Factors; School Skills).

5. It is not clear for what reason the correlation between birth weight and age at evaluation are reported for the variables considered (Medical diagnoses, Other evaluations; Birth/ Delivery related Factors; School Skills) and this should be specified.

6. All results on the differences between children with low vs. high birth weights may be determined by preterm birth that is associated to low birth weight (preterm children are, in fact, about 95). Since preterm birth affects several aspects of development (e.g., language, motor development, ADHD) examined in this study, it is necessary to control the effect of this variable in the analyses.

7. The Discussion has to be revised on the basis of the above-mentioned considerations.

Minor Essential Revisions

1. Page 8, line 5: “79%....(Table 5)”: this paragraph needs to be reformulated because it is not clear; for example, what does “birth weights for children who spoke sentences…” mean? To which children does this refer?

2. All values reported in the Tables should be checked, since in some cases the number of children and the percentages reported do not correspond.

Discretionary Revisions

1. Descriptive information. The information about the distribution of participants in the three categories of birth weight is redundant, since it is reported both in terms of numbers and percentages of children.

2. Medical diagnosis. Some of the medical conditions refer to genetic syndromes. Therefore, the reason that leads the authors to consider them as possible correlates of birth weight is not at all clear and further, these could be eliminated since, in any case, they did not occur in the sample.

Level of interest: An article of limited interest

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'