Reviewer’s report

Title: The prevalence of physical, sexual and mental abuse among adolescents and the association with BMI status.

Version: 4 Date: 8 August 2012

Reviewer: Susan Clifford

Reviewer’s report:

The revised manuscript provided by the authors is clearer in regards to the study methods and results. Multiple grammatical errors remain in the manuscript and need to be corrected.

Minor essential revisions

1. In their rebuttal, the authors state that the study population is representative of the population from which it was drawn because it has a 85% response rate. Although a high response rate, it is unlikely that the 15% non-responders were spread evenly across the population. Also, the 25,000 who completed a questionnaire but were not included in the analysis are unlikely to be spread evenly across the population. In the discussion section regarding limitations, I feel it is very important that the authors discuss the possibility that non-participation was not random, and that therefore some parts of the population may be under-represented in this sample. The authors state that they found no evidence the sample differed from the population, but I am not sure what evidence they tested for. It would also be useful to report the 85% response rate in the paper.

2. Background, paragraph 1:” it is likely that individuals that were abused during childhood or adolescence … become overweight or even obese.” Is this true? If so, a reference is required.

3. Background, paragraph 2: Please specify the population from which 100,000 victims are drawn (i.e. a country or the world?)

4. Methods, sample size contracts abstract sample size. Methods: “In total, 77,270 adolescents completed the questionnaire”. Abstract: “In total 51,856 secondary school students aged 13-16 completed a questionnaire”

5. Methods, sample size: numbers don’t add up to each other. The actual number of participants in each analysis remains unclear and absent from the main manuscript (excluding table footnotes). The methods state 50,420 complete the PA question. It later states 1422 answered the question with ‘I don’t want to answer’ and were excluded from analyses, so the reader needs to calculate 50,420-1422 to find the analysed sample size. Please report it clearly in the paper.

6. Results, paragraph 3: “Also, obese adolescents were about four and three times more likely to be respectively physically or mentally abused compared to
their normal weight peers. However, though still significant, the multivariable model showed considerable smaller ORs for these associations (respectively 1.50 and 1.79).” This should read 'sexually', not mentally. Please check the manuscript carefully for errors.

7. The authors have removed Model 2 from the paper. Please remove the description of model 2 from the methods and correct references to the multivariable models from plural to singular.

Minor issues not for publication
Typographic errors (there are more, major ones listed below):
1. Abstract, methods section, second sentence: Remove brackets around BMI.
2. Background, paragraph 1: Although there are different subtypes of abuse, among which physical, sexual and mental abuse, … . This sentence needs an extra word
3. Methods, abuse paragraph :” (1422 did not answer the physical abuse question, these percentages were 1669 and 1622 for the sexual and mental abuse question” – replace the word ‘percentages’ with ‘numbers’

Discretionary revisions
1. The authors rebuttal describes the rationale for describing analyses as univariate and multivariate. I think it would be clearer to describe them as unadjusted and adjusted, as their ‘independent predictors’ are considered confounders, however acknowledge it is the authors preference.
2. I am still unsure of the rationale for adding additional types of abuse into the multivariable analysis and think it would benefit from a brief sentence about this (i.e. if it is protective or additional risk).
3. Results, paragraph 2: “Being a victim of multiple forms of abuse was significantly more common among obese adolescents (n=50) then among their normal weight peers” Could you report the % of obese and % of normal weight reporting this so we can compare how common it is in either group?
4. Figure % for normal weight, which was in the previous version of the paper figure have now been removed – I think it would be clearer to show all 4 BMI status categories

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

**Quality of written English:** Needs some language corrections before being published

**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