Reviewer's report

Title: Deprived Children or Deprived Neighbourhoods? A public health approach to the investigation of links between deprivation and injury risk with specific reference to child road safety.

Version: 1 Date: 10 December 2003

Reviewer: Andrea Madarasova Geckova

Reviewer’s report:

General
The author addresses an important issue, but the manuscript should undergo major revision before publication.
The research question is very interesting and it is clearly formulated, unfortunately only in abstract and not in introduction. The title is clear and fits to the research question. On the other hand I am not that sure, that data and their assessing fits to the research question. Methods are appropriate, but they are not described sufficiently.
Discussion and conclusions well balanced and adequately supported by data
Abstract, methods and result section should undergo major revision. The writing is acceptable.

Discretionary Revisions (which the author can choose to ignore)

Minor Essential Revisions (such as missing labels on figures, or the wrong use of a term, which the author can be trusted to correct)
p.1
Spell-checker
Title: Deprived Children or Deprived Neighbourhoods? A public health approach to the investigation of links between deprivation and injury risk with specific reference to child road safety

p.2, Third sentence in part 2 Introduction: Author should be more clear in this sentence. What kind of association was confirmed? More evidence for socio-economic inequalities in occurrence of injuries?

p.2, part 2 Introduction Reader will find in text “Stats 19” and “IPPR”, but I am not sure if this terms are generally known. Some notes (in case “Stats 19”), or using full version instead of short name (in case “IPPR”) will make it more clear for reader.

p.2, part 2 Introduction, row 15 (e.g. Posner et al., (2002)

p.2, part 2 Introduction, row 25 “it was possible” is in this sentence double.

P3, Introduction, Table 1 should not be in the Introduction, but in the Data; at the bottom of the same page.

p.8-9 Remove authors notes from reference (2,7, 11)

Major Compulsory Revisions (that the author must respond to before a decision on publication can
Part 1 Abstract resembles more or less the introduction part and necessary information is missing. More than half of abstract is describing the background of the research and the rest of this section resembles more the discussion and conclusion part than the abstract. The abstract should be rewritten and restructured and should include information about aim, used method, main results and conclusion.

Part 2 The Introduction is written quite well, but the reader misses a clear formulation of the author's research question at the end of this part.

Part 3 The Data section needs some improvement to supply the reader sufficient information about methods and sample. First of all some descriptive information about Devon County is necessary for the reader (Is it a rural or urban county? What is the population density? What are other characteristics of this county, which can be important for interpretation of findings related to child road safety and its association with deprivation?). Secondly, the group of children in the research should be depicted. Thirdly, the way of data-collection, and use of data should be described.

The title of table 1 does not give the reader sufficient information about the content of the table. At least the reader should know from the table, that there are data from the period 1996-2002, and also a more precise description of the rows will help (not only "collision", "home"). A more detailed description of the data included into the table, particularly the meaning of these data should be in the text.

Similarly figure 1 is unsatisfactorily described in both, figure text and text of the related paragraph. In figure 1 the reader has to guess if higher deprivation score means more deprivation or lower deprivation. The type of aggregation (titles of figures) is not clear. In the first case ("by accident location") it is clear, but in second case ("by casualty postcode") the reader starts to be confused. I guess the author means "by residence location". The description of figure’s meaning is missing in the related text of the paragraph. So it is up to reader to interpret the figures. Moreover, it is debatable if the right place for figure 1 is the Data section. As far as I understand the author, he wants to underpin the need of his research question. If so, this Figure 1 should be removed to the Introduction section, where the Research Question should be formulated.

From part 4 Models, the reader expects a description of the statistical methods used by author. The author describes several possibilities of data assessing, but after this part the reader does not know what type of statistical analysis was used in this manuscript, what variables were explored etc. Moreover, I am not sure if such detailed description of math methods is necessary for reader. If the author considers this part essential, then he should move it into the different part of manuscript.

Part 5 The Results section should be fully rewritten. This part includes rather “raw notes” then a description of findings. It should not to be up to the reader to assess the output of statistical analysis and interpret the findings. This work should be done by author. Figures (numbers) are helpful, but should not occurred in text without explanation of its meaning. The order of tables should fit with the occurrence in text (table2/ table3).

Part 6 Conclusion, maybe better said discussion and conclusion is written well, however it is short. At the end of whole manuscript the author discloses to the reader the fact, that children are living mostly in rural area with calm traffic, but entering the school and leisure time activities in town with rush traffic, what is a clear explanation of his findings. At the end of the manuscript the author concludes, that majority of pedestrian injuries in Devon County happened in cities. So it seems to be that not a deprivation is a main risk factor, but maybe not enough experience with rush traffic. In the whole manuscript the authors are talking about differences in deprivation score among wards, but at
the end it seems to be that urbanicity is a more important factor. In the manuscript the reader will find a very brief note, that this factor was included into the model. So the manuscript “wants to be” about deprivation, but at the end these data are more suitable for a different research question.

Some remarks to statistical evaluation of the data:
Despite author knows “ecological fallacy” he is using the approach prone to it. Comparison of several very different models based just on Akai informative criterion (AIC) is without deeper analysis of single models quite unsatisfactory. Adding more explaining variables or transformation of already included variables may completely change the “order” of the models. Description of model with mixed effects (5.2) is not satisfactory.

**What next?:** Unable to decide on acceptance or rejection until the authors have responded to the major compulsory revisions

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

**Quality of written English:** Acceptable

**Statistical review:** Yes

**Declaration of competing interests:**

None