Reviewer's report

Title: Exposure to road traffic and railway noise and associations with blood pressure and self-reported hypertension: a cohort study

Version: 2 Date: 12 October 2011

Reviewer: Ta-Yuan Chang

Reviewer's report:

Major Compulsory Revisions
1. Abstract, Conclusions: The p value above 0.10 can not be used to conclude that the association exists.
2. Background, 5th paragraph: The study tested the hypothesis that long-term exposure to road traffic and railway noise increase systolic and diastolic BP but no results related to railway noise exposure and diastolic BP in the text or Tables.
3. Results, Systolic and diastolic BP, 4th paragraph: The authors need to mention the significant difference of systolic BP between subjects exposed to 5-year mean noise above 67.3 compared with those exposed to less than 56.3 dBA. The effect is stronger than the use of 1-year mean noise (0.85 vs 0.79 mmHg). Are the associations shown in Table 3 similar to those using the preceding 5-year Lden in this study?
4. Results, Systolic and diastolic BP, 5th paragraph: The result does not support the association between road traffic noise and systolic BP to be modified by cardiovascular disease due to the p value is greater than 0.10. Accordingly, the discussion about the relationship between traffic noise and the systolic BP among participant with a diagnosis of cardiovascular disease should be excluded.
5. Discussion, Systolic and diastolic BP, 2nd -4th paragraphs: Some points are repeated and needed to be refined.
6. Discussion, Systolic and diastolic BP, 6th paragraph: Delete or modify the sentence “No study known to us...” due to the results of Dratva et al. (2011).
7. Discussion, Hypertension, 2nd paragraph: I do not agree the statement “…railway noise seemed to be weakly associated with both the systolic BP...” due to the p value for railway noise exposure and systolic BP is 0.38 (95% CI: -1.05; 2.74).

- Minor Essential Revisions
1. Use the term “dBA” instead of “dB” in the whole manuscript. In addition, the LAeq means A-weighted equivalent sound level but not A-weighted decibel (dBA).
2. Methods, Incidence of hypertension: The word “enrollment questionnaire”
should be replaced with “enrolment questionnaire”.

3. Methods, Statistical methods: The reason for using a centre as a random effect in mixed models should mention briefly in the text.

4. Methods, Statistical methods, Linearity: Delete the last sentence “As an alternative way…” that was mentioned in the previous part.

- Discretionary Revisions

1. Statistical methods: As the authors mentioned to respond the comment of overadjustment, the estimate per 10 dB changed from 0.26 mmHg to 0.28 mmHg while removing the municipality level SES in the mixed model. What are the 95% CI and p value? Is it better than using both municipality level and individual level of SES in the model?

2. Discussion, Systolic and diastolic BP, 2nd paragraph: I think that the authors may over cite the references to support their points. For instance, only Babisch (2006) and Dratva et al. (2011) discussed the BP in their papers. Others studies found the association between road traffic noise and hypertension in limited or specific groups.

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

**Quality of written English:** Acceptable

**Statistical review:** Yes, and I have assessed the statistics in my report.

**Declaration of competing interests:**

I declare that I have no competing interests.