Reviewer's report

Title: The socio-environmental determinants of railway suicide: a systematic review

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Reviewer: Karolina Krysinska

Reviewer's report:

Thank you very much for an opportunity to comment on a manuscript reporting a systematic review of studies looking at the socio-environmental determinants of railway suicide. It is an interesting and valuable study, analysing a number of risk and (potentially) protective factors, as well as identifying gaps in our current knowledge regarding the determinants and potential for prevention of suicide on the railway networks. The authors have conducted the review following the procedures recommended by the PRISMA group and compiled a rich and insightful review of the literature. Despite the strengths of the manuscript there are several limitations and problems which should be address before its publication.

Major Compulsory Revisions

1. Background: Could the authors provide a comment regarding differences and similarities between suicidal behaviour on the railway networks and metro/underground systems. Studies looking at both types of environments have been included in the review, although the factors influencing these two types of “rail suicides” (and appropriate prevention measures) might differ.

2. Background: The second paragraph on page 3 (“Past research suggested…”) is not clear. Could the authors specify the eight “preventative strategies” according to Radbo et al. (2008)? Could they provide references for the statement regarding the existing “empirical evidence” supporting the effectiveness of these strategies? Could the authors specify which of the strategies described or reported in references [10-16] relate directly to prevention of railway suicide? In the third paragraph (page 4), could the authors provide a definition of “means restriction” in the context of rail suicide prevention?

3. Inclusion and Exclusion Criteria: Could the authors specify what is meant by “so forth” in this systematic review (p. 5)?

4. Study Characteristics: Could the authors provide information how many studies included in the review were conducted in the context of a) railway networks and b) underground systems (p. 7)?

5. Results: How the different definitions and/or indicators of the socio-environmental determinants of railway suicide used in studies conducted in different countries could affect the results and conclusions of the study (see p. 12)? How the authors of the manuscript have “controlled” for the different operationalization of the analysed variables?
6. Media Impact: please, check the sentence starting with “Consistent with this…” (p. 10).

7. Figure 1: I am surprised by the number of studies identified during the first phase of the database search (n=5195). This seems very high!

8. Table 1: Both the content and the language used in this table should be thoroughly revised. The studies are not presented in a consistent and well organized way. For example, the “factors of interest” in Study 1 are described in much detail; while similar variables in Study 6 (e.g., population density) are only listed. Results (“significant relationships”) should be presented in a more concise (less descriptive) way. English should be revised, for example phrases such as “fatal train suicidal act” (p. 1)), “there was no significant sign of suicide displacement to other platforms” (pp. 9-10). What is the difference between an “entire railway system” and a “national railway track system”? 

9. Summary and Interpretation of Evidence: Could the authors provide relevant references in the first paragraph of this section (p. 12)? The sentence staring with “This appears to support Durkheim’s hypothesis…” (p. 13) is not clear. The phrase “On the contrary” (p. 13) does not seem appropriate as an opening of the next paragraph.

10. Future Research: This is the weakest part of the manuscript and is not suitable for publication in a scientific journal. First of all, English be reviewed and revised to ensure the clarity of the text (pp. 14-15). Additionally, it is not clear why the authors have chosen to focus on the Durkheim’s theory (please, check referencing style on p. 14). The application of Joiner’s model is also not very convincing. The concept of “acquired capacity for suicide” can undoubtedly be applied to suicide on the railway networks. However, given the high lethality of this method, this process could be more complicated and maybe linked to the use of other (less lethal) methods as a “suicide practice”. Discussion regarding the need for studies looking at individual risk factors for railway suicide seems a bit paradoxical in the context of the aims and rationale for the current review (p. 4).

11. Limitations of this Review: Could the authors explain why the one study on temporal variations was not included although it was identified following the study search procedures? The sentence “Since railway suicide occurred most often in..” (p. 16) is not acceptable. There is no evidence (due to lack of published English-language studies on rail suicide outside the Anglo-Saxon and Western-European countries, Japan, Hong Kong and Canada) showing that railway suicide is most frequent in “non-English speaking countries such as Netherlands, Germany and Sweden” (p. 16). (In addition, categorising these three Western European countries as “non-English speaking countries” is inappropriate; an example of quite extreme “Anglocentrism”).

12. Conclusions: Again, English be reviewed and revised to ensure the clarity of the text (pp. 16-17). It is not clear what is meant by “the impacts of inhabited socio-environments rather that surroundings of incident location” (p. 16) and interventions “generalizable to their local conditions” (p. 17). The conclusion regarding the need for “well-designed studies” (p. 17) is correct; however, it
seems to ignore the good quality and important (also for prevention) results of the studies conducted to-date.

Minor Essential Revisions
1. Please, correct “to clarifying” (should be “to clarify”) on page 6.

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

**Quality of written English:** Not suitable for publication unless extensively edited

**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.