Reviewer’s report

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

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Reviewer: Ulrich Hegerl

Reviewer’s report:

This article addresses the important question which socio-environmental risk and protective factors show a significant association with the frequency of fatal railway suicidal acts. So far, this question has not been examined in the context of a systematic review. Overall, the reviewed studies suggest a strong effect of mass media reporting on the number of railway suicides whereas only weak and inconsistent evidence was found for a significant association between the frequency of railway suicides on the one hand and railway environmental variables and population characteristics on the other hand. For future research, the authors recommend methodologically sound studies which address not only the afore-mentioned risk factors, but also socio-environmental variables in the inhabited neighbourhood of individuals at risk.

Overall, this article is well-written and gives a clear overview about the current state of research regarding socio-environmental determinants of railway suicides.

The following points could be addressed in a revision:

MAJOR COMPULSORY REVISIONS:

The list of possible socio-environmental factors influencing railway suicides should be stated more precisely by using a table: Which socio-economic factors did the authors consider to be possibly relevant? Do socio-environmental factors also include political decisions with indirect consequences for railway suicides like an army reform in Switzerland which led to a significant decrease of firearm suicide rates, but also to a partial method substitution indicated by a subsequent significant increase of railway suicide rates in this country (see Reisch et al. Am J Psychiatry 2013)?

MINOR ESSENTIAL REVISIONS:

Table 1:

Regarding the study no. 3 (Niederkrotenthaler et al., 2012), the summary of significant relationships between study factors and outcomes is very long. Thus, it is recommended to shorten it by eliminating the sections “after adjustment for the frequency of total suicides and total number of operative stations” (the findings after full adjustment are more important).

Discussion:

Future research, end of the forth paragraph: The authors recommend “stronger
approaches” for studies evaluating particular interventions regarding railway suicidal acts: For the reader, it would be helpful if the authors could specify these approaches.

Further minor points:
References Nos. 26 and 29: Volume and pages are missing.

DISCRETIONARY REVISIONS:
None.

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

**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.