Reviewer's report

Title: The copycat phenomenon after two Finnish school shootings: an adolescent psychiatric perspective

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Reviewer: Roland Weierstall

Reviewer's report:

The paper addresses a highly relevant topic and focuses on a rare sample. The authors assessed different mental health problems as well as risk factors associated with aggressive behaviour in 77 copycats between two school shooting in Finland that were referred to a psychiatric institution for further evaluation. For the analyses, the medical files were analyzed. Results revealed that almost two third of all subjects suffered from mental health problems, especially symptoms of depression and anxiety, as well as from associated behavioural problems. The authors come to the conclusion that adolescents who threat to carry out a school massacre need a psychiatric referral. However, even if the paper is of great importance, I have several major concerns. Because the validity of the data is questionable in many points, you should provide more information to the reader to proof validity. A second point is an insufficient results section that is confusing. I have the tendency to reject the manuscript, however, because of the relevance of this topic and the uniqueness of your work –despite the methodological problems- I think that the work in general should be published but after a major revision.

Major Compulsory Revisions

Abstract:

Page 3, 1st para, line 2: “Any threat to carry out a school massacre should always result in a psychiatric evaluation.” This conclusion is too broad. As this type of behaviour is deviant and not acceptable in our society at all, this conclusion is no new advice. I would rather expect a more relevant conclusion, for example that an early detection of mental problems in adolescents is important for the prevention of school massacres and that teachers and parents should be more aware of them.

Page 4, 2nd para: It is not directly clear to the reader why you introduce this
paragraph. It only gets clear in the last sentence. You should restructure this paragraph.

Page 4, 3rd para: Again, it is not clear why you start with a new topic. However, it does not get much clearer after reading this paragraph. You mention three age groups but only compare two groups in your later analyses. It is also not clear what this paragraph implies: Are those who have more capacity to plan those who commit more massacres? Or do the younger ones commit equally many massacres but with a different motivation? Or do you want to emphasize that they differ in vulnerability for different psychiatric disorders (see Teicher for references) and have a different motivation? You should be much clearer on this.

Page 5, 2nd para, line 4: It is not possible to follow this hypothesis after reading the introductory part. There is no reason to assume that massacres threats via Internet are more serious. If the Internet facilitates massacres, I would expect that they are more frequent in this population but not more serious. And how do you measure “serious”?

Page 5, 2nd para, line 6: The formulation “serious by nature” is too broad. Maybe they have a different access to weapons or harmful media, and the way in which a massacre is acted out might differ, but I would not expect that the underlying hatred or frustration differs. You should be clearer what is meant with “serious by nature”.

Methods:

Page 5, 3rd para, line 3: Who sent them for evaluation? Does your sample cover all massacre threats in Finland or is it a selection of those who were suspected of having a psychiatric disorder? This initial selection is crucial for external validity.

Page 5, 3rd para, line 9: What was your selection criterion? How many patients were sorted out and for which reason?

Page 6, 1st para, line 1: My major concern is the validity of the medical files. Did the psychiatric hospitals use the same standardized procedure? Were the diagnoses based on validated instruments or only on the clinical impression? Who made the diagnoses? There are many biases that can weaken the validity of clinical diagnoses and you should resolve all the reader’s doubts. If you can’t rely on the medical files, the whole results are worthless.

Page 6, 2nd para, line 3: You don’t provide any information on the items or on the validity or reliability of this checklist. You should report psychometric properties as well as a few examples of the items.

Page 6, 3rd para, line 3: How can you be sure that all the items from the checklist were asked during the interview? If the clinicians didn’t ask for these items they won’t be mentioned in the file. Also provide examples of the items.

Page 6, 4th para, line 1: This information is insufficient (see comments before about doubts on the validity).
Page 6, 5th para, line 1: This paragraph is essential to follow your classification of what you call “serious”. However, as you mention, the classificatory approach is not systematically and there is also no information available on reliability and validity of the assessment. Has it been proven that this classification is a predictor for severity of criminal behaviour or recidivism? If it is not, you also can’t say something about seriousness.

Page 8, 1st para, line 8: I personally think that the construct of psychopathy is doubtful at all. However, if you want to convince me that it is important, you should at least proof that you can assess it reliably. You mention that trained raters made the scorings. Who trained you? Hare offers special trainings because assessing this construct is not trivial. Can you proof that sufficient information for the scoring was in the files and that you can reliably assess it?

Page 8, 2nd para, line 4: Statistical significance and effect sizes are not the same. You can’t report one instead of the other but should report both. Please rephrase this part and consider both. Of course, you should use Bonferroni corrections if you test hypotheses. However, most of your data is exploratory. You should distinguish this.

Page 8, 2nd para, line 6: The differentiation of the effect sizes is too fussy. The distinction between low, medium and large is a broad convention that has no objective mathematical basis. You should distinguish between three categories at most.

Results:
Pages 9 & 10: You provide lots and lots of information in four different tables. However, there is no main message for the reader. He has to carefully read through all tables to detect some slight differences within the categories, but there is no system and no conclusion that can be drawn. Especially table one provides too much detailed information. For a scientific paper you should try to focus on one or too main results that are easily accessible. Please restructure and clarify this part.

Page 10, 5th para, line 3: SD, df, p etc. have to be italic.

Page 10, 5th para, line 5: You should highlight the main result. Table 5 provides too much information and the significant results get lost. However, I very much appreciate that you report effect sizes as well as statistical significance.

Page 11, 2nd para, line 2: Table 6 is just a list of all the data you collected. It takes too much time to extract the relevant information. Please find another way of presenting the data to make it more accessible.

Discussion:
Page 12, 1st para, line 8: You should also compare this sample to adolescents in forensic hospitals.

General: You provide interesting results. Consequently, your conclusion really
should be more differentiated. However, the discussion section can be much shorter and clearer. You also do not refer to the initial hypothesis. Instead of discussing too many interpretations you should rather provide two or three main message for the reader that can be useful for further research or for clinical practice.

Minor Compulsory Revisions
- none-

Discretionary Revisions
- none-

Level of interest: An article of outstanding merit and interest 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.