Author's response to reviews

Title: Childhood psychiatric disorders as precursors of adult delinquency: A 30 years follow up study using official crime records.

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Author's response to reviews: see over
Dear Editor,

Thank you for the possibility to resubmit a final version of the manuscript MS: 1498013407475368 “Childhood psychiatric disorders as precursors of adult delinquency: A 30 years follow up study using official crime records”. As the BMC policy is to allow a maximum of two revisions, we have made every effort this time to fully address the criticisms raised. We appreciate your comments, to which we respond in the following section. Two revised manuscripts are attached, one with alterations written in red and one with all alterations integrated.

Reviewer #1:

Comment 1(Major essential revisions)

“In the results section under the heading "Childhood precursors of convictions for delinquency", the authors state that:"Because the MRO variable represented overlapping constructs with the overall MR variable, it was not included in the equation." But in table 2 I find a "ns" indicating that the variable has been included, but was found not to be significantly associated with crime. This makes me wonder what was really done, and I need a consistent answer to that question in order to be able to make the final decision concerning this manuscript.

Also, I am not entirely happy with the selection of variables for a regression analysis based on statistical significance of the univariate relationships. I will accept it, but with reservations. The reason being that selecting variables that are significant is capitalizing on chance. This is, however, not actually the case in relation to the two most important research questions which are concerning ADHD/CD and emotional disorder/CD, but it is in relation to the other variables in the study. The study will be much more convincing, if all the variables that were originally intended to be included in the study were included in the final regression model, but excluding MRO for conceptual reasons. To keep the number of variables down, you may also omit "residual disorders", which is basically not feasible as a variable.”

Response 1

We sincerely apologize that the cell presenting multivariate result for MRO in Table 2 was accidentally marked with “ns” in the submitted manuscript, when the MRO variable was actually not included in the regression model. Despite thorough revision of the text, the “ns” was unintentionally not deleted in the revised table, and the error was made. This error is of course corrected in the final manuscript.
In the previous revised manuscript we changed from stepwise regression analysis into a Cox regression with all variables considered relevant for the research questions entered into the analysis simultaneously. We used the results from our univariate analyses to decide which variables to include in the multivariate model. We included only those variables significant at the 5% level to keep number of variables down, because of small numbers in some categories, and the small sample of convicted probands. Based on our clinical judgement, selected variables seemed reasonable, and they were variables judged to be pertinent for the research questions.

However, we also tried to introduce all the variables into the Cox analysis as you suggested, (with or without “residual disorders”), but the resulting model was difficult to interpret: The same variables remained significant in both models, but RR was disproportionately high for many of the variables when all the variables were put into the model. We therefore did not revise the final regression model in the revised manuscript.

During earlier draft of the manuscript and in the revision process, we have consulted our statistician regularly. The statistical choices are taken in collaboration with her. During the last revision her contributions have been substantial, and she has consequently been included as co-author in the revised manuscript.

The statistician advised us to reduce to one decimal when presenting results from the Cox regression analyses to provide a sober expression of the uncertainty in the estimates. Decimals are therefore reduced to one digit throughout the revised manuscript.

Revision 1

The “ns” is deleted from the multivariate cell for MRO in Table 2, and replaced with a symbol “☆” which indicate “The variable was not entered into the multivariate analysis because of overlapping construct with the MR variable”.

All results from the Cox regression analyses are presented with one decimal in the revised manuscript in “Abstract” at page 3, line 14-18, in “Results” at page 12 line 21-25 to page 13, line 1-11 and in Table 2 (without alterations in red).

Comment 2 (Minor essential revisions)

“CGAS: Please write out in full when first mentioned”.

Revision 2

“CGAS” is written in full when first mentioned in “Measures” at page 10, line 22: “Children’s Global Assessment Scale (CGAS)”.

Comment 3 (Discretionary revisions)

“Consider revising the title to reflect your focus on ADHD and conduct disorder. I think including these two in the title will attract more readers.”

Response 3

We agree that a more pointed title could be more informative, and we have included ADHD and conduct disorder in the revised title.
Revision 3

The title is revised to: “The impact of ADHD and conduct disorder in childhood on adult delinquency: A 30 years follow-up study using official crime records.”

Comment 4 (Discretionary revisions)

“Consider revising the research questions to be stated as 2 hypotheses and an exploratory research question. I think the research questions are in fact hypotheses and that their scientific rigor is downplayed too much when they are stated as exploratory questions.”

Response 4

We appreciate your comment and agree that stating the research questions as two hypotheses and one research question is more appropriate.

Revision 4

We have changed the exploratory questions into two hypotheses and one exploratory research question in the introduction at page 6, line 12-18 in the revised manuscript: “We wanted to test the hypothesis that there was a direct association between hyperkinetic symptoms and later criminality in former child psychiatric in-patients, with ADHD increasing the risk for delinquency, independent of conduct disorder comorbidity or not. We also wanted to test the hypothesis that former child psychiatric in-patients with mixed disorder of conduct and emotions were at increased risk for later criminality compared to those with conduct disorder only. A final issue was to explore whether vulnerability factors other than diagnoses could enhance prediction of delinquent outcome.” In addition we added the following sentence in “Discussion” at page 14, line 15: “Thus, our two hypotheses were not confirmed.”

Yours Sincerely,

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