Reviewer's report

Title: Prospective cohort study of the relationship between neuro-cognition, social cognition and violence in forensic patients with schizophrenia and other psychiatric disorders

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Reviewer: Benjamin Brent

Reviewer's report:

This manuscript presents the results of a prospective study of the relationship between violence and cognition (both neuro and social cognition) over 12 months in a sample of inpatients, the vast majority of whom carried a schizophrenia spectrum diagnosis. The main findings of the study are that neurocognitive deficits were associated with an increased risk of violence over time and that social reasoning was significantly lower among those who committed violence and explained the largest part of the variance in violent behavior in the overall sample. A test of mediation model suggested that the association between poorer neurocognition and violence was mediated by social cognition, symptom levels, and social functioning. While the study deals with a subject of importance, the study is limited because of its focus on a forensic sample of long-stay hospitalized patients, the vast majority of whom were male. Additionally, the manuscript is marred by its style of presentation which is often poorly organized and/or overly detailed, which detracts from its impact and interpretability.

Major Compulsory Revisions:

Introduction: The introduction is very poorly organized. It should be made clear right away that this is a study of inpatients on a long-stay forensic unit. The literature review, accordingly, should be refocused on this patient population. Additionally, the authors need to specify their hypotheses in the introduction and describe BRIEFLY how they planned to test them/the study design.

Another important problem I have with the entire design of the study is this: It is unclear why the authors carried out a study with such an imbalanced number of people with SZ diagnoses (89) and other general psychiatric diagnoses (15). Did the authors have any meaningful hypotheses about differences between these pt populations? Why didn't the authors simply focus on the SZ group? This becomes more of an issue because (if I understand correctly) while the non-SZ patient group comprised only 14% of the overall sample, they committed 37.5% of the violent acts (6 out of only 16 incidents). To my mind, this study would be much clearer in its focus if it was limited to the SZ patients. It also appears from the results that (as one would expect) combining SZ and non-SZ patients in the total sample leads to only minor differences between them. At any rate, some explanation for this kind of methodological design is required given the extent to which the non-SZ group affected the relationship between cognition and violence.
in the overall sample.

Methods: The eligibility criteria for the study need to be clearly stated up front. Otherwise, it is very hard to understand how eligibility was actually determined. Demographic details should be outlined an easy to read table, not described in the text in minutiae.

Results: There is much too much detail in the reporting of certain results (eg the DUNDRUM-1 instrument), which should instead be briefly summarized in the text. Specific details can be found in tables. On the other hand, for "Correlations between cognition, real world functioning, violence risk and violence" the upshot of Table 2 needs to be summarized, rather than just referring readers to a table. It doesn't make sense why the authors describe the results for the SZ group and the total sample, but not for the non-SZ group. Overall, I think it would be much more clear if the results were separated by: SZ-group, non-SZ group, and overall sample. Or, just drop the non-SZ group if it's not adding anything really interesting. I would avoid editorializing in the results (e.g., "page 18: neurocognition appears to have no influence on violence independent of its effect on social cognition...") Just give the stats and leave the interpretation for the discussion.

Discussion: The authors should expand their discussion on the implications of their findings to treatments for reducing violence in sz that foster social cognition. Several psychotherapeutic approaches (metacognitive psychotherapy (MERIT) of Lysaker and colleagues; mentalization-based treatment (Brent and colleagues) or cognitive treatments that enhance social reality monitoring (Subramaniam et al., Neuron 2012) might be cited as examples of potentially useful treatment adjuncts.

Minor Revisions:
1. page 5: 3rd sentence, change "there is a link" to "the link"
2. recommend not saying "schizophrenic patients" which can be viewed as pejorative. Instead say "pts with schizophrenia" or something like that.
3. page 6, 2nd paragraph, would specify in 1st sentence that the authors are referring to neurocognition (not just "cognition").
4. I'm not sure how compelling it is to say that inpatient violence reports are likely to be more "objective." Perhaps some citation could be made for this opinion.
5. The gaps in the literature on violence and cognition should be stated in a more parsimonious way, rather than listing 4-5 things that seem to be missing from the literature.
6. page 9: There should be a period after problem solving and before Social Cognition (I think). The subsequent sentence at the top of page 10 is a run on.
7. Page 10: reference to table 1b should be in the results section, not the methods.
8. Results: would be good to have a summary paragraph that sums up what the data showed for the SZ group, the non-SZ group and the overall sample.
9. Discussion: The sample was overwhelmingly male, but there is no discussion of how that is a limitation of the study and also how that affects its generalizability.

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

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** Yes, but I do not feel adequately qualified to assess the statistics.

**Declaration of competing interests:**

I declare that I have no competing interests.