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

Version: Date: 24 March 2015

Reviewer: Hamish McLeod

Reviewer's report:

- Major Compulsory Revisions

This is an interesting and clearly-written study that tested various pathways between neurocognitive factors and violence in people receiving treatment in inpatient or outpatient forensic mental health settings. The use of statistical modeling to trace the various pathways goes some way to expanding current understanding of the ways that violence various risk factors interact.

Issues to be addressed in revision of the paper:

1. The prospective nature of this study is one of its design strengths and this will help to generate new ideas about the temporal relationship between the measured predictors and violent incidents. However, it is not clear why only the first violent incident for each person was counted and reported. It would seem that the base rate of violence frequency will vary across individuals and those with higher rates of violent acts may well differ on some of the measured dimensions (e.g. HCR—20, severity of symptoms, substance misuse history, comorbid personality disorder). Do the authors know whether some of the 16 recently violent participants displayed more than one violent incident in the study observation period? Can they explain more fully the rationale for not measuring or reporting the overall rate of violence?

2. The argument for examining a pathway from neurocognition to PANSS symptoms to violent acts is also slightly unclear. The authors cite evidence that delusions and risk of violence are associated but then go on to use total PANSS score in their model. Given the heterogeneity of symptom profiles in people with psychosis it is not clear why this approach was taken.

3. There is limited information provided about the characteristics of the participants (n=15) who are diagnosed with something other than schizophrenia or schizoaffective disorder. A violent incident was recorded during the follow up period for 40% of this subgroup (6 incidents out of 15 participants) but only 13% of the schizophrenia/schizoaffective sample (10 incidents for 89 participants). This apparent difference in incidence of violence raises questions about differences in the sub-sample characteristics but insufficient information is provided about the “other diagnoses” subgroup. There is a brief comment in the discussion suggesting that other diagnoses subgroup also had psychotic
disorders but the details warrant clarification.

4. Some of the interpretations regarding the wider implications of these results are over-stated (e.g. the Discussion section on Generalisability) and should be carefully re-considered. For instance, the proposal is offered that the greater cognitive impairment in the schizophrenia spectrum patients gives rise to deficits in social and emotional reasoning and this elevates violence risk. It is not clear how this argument can be defended when all of the participants in the study had been violent at some point and this precipitated disposition to forensic mental health care. So, the data showing that the patients who had a recent incident of reactive violence were more cognitively impaired may speak more to the role of these factors in managing emotional provocation or distress (i.e. more cognitively impaired patients are more disinhibited, impulsive, less able to resolve interpersonal conflict non-violently). The argument on p.26 for a developmental pathway from neurocognitive impairment to social-emotional reasoning deficits and then HCR-20 risk factors (relationship difficulties, unemployment, substance misuse) might be true for many violent patients but it is a proposal that cannot be tested by the current design because, by definition, all of the study participants were violent at some point in their history and this necessitated treatment by forensic mental health services.

- Minor Essential Revisions

The author can be trusted to make these. For example, missing labels on figures, the wrong use of a term, spelling mistakes.

The manuscript is very well written and shows few typos or proofing errors. I did spot a couple of issues warranting attention:

p.10, line 198 – the subsample numbers do not add up – “n=89; 80 non-violent, 10 violent” (total n=90?)

p. 25, line 560. “ref” – should be a citation?

- Discretionary Revisions

None

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

**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